National Transport Commission

Draft Code for the land transport of dangerous goods

Consultation Regulatory Impact Statement

National Transport Commission | 30 September 2024

Report Outline

Title	Draft Code for the land transport of dangerous goods (the Code) Consultation Regulatory Impact Statement (C-RIS).
Purpose	The purpose of this C-RIS is to seek feedback and comment from stakeholders on the draft Code.
Abstract	In November 2020, transport and infrastructure ministers approved the NTC's recommendation to conduct a comprehensive review of the Australian Code for the Transport of Dangerous Goods by Road and Rail (the Code). Ministers also supported that the Code be expanded to include Class 1 Explosives and that the NTC incorporate into the Code principles from both: • the Agreement for the International Transport of Dangerous Goods by Road (ADR) • the Agreement for the International Transport of Dangerous Goods by Rail (RID).
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Key words	Dangerous goods, ADG Code review, ADR, RID, transport, the Code, C-RIS,
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Glossary

Abbreviation	Term
ADG Code/the Code	Australian Code for the Transport of Dangerous Goods by Road & Rail
ADG 5	Australian Code for the Transport of Dangerous Goods by Road & Rail, 5th Edition
ADG 6	Australian Code for the Transport of Dangerous Goods by Road & Rail, 6th Edition
ADG 7	Australian Code for the Transport of Dangerous Goods by Road & Rail, 7th Edition
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road
AEC	Australian Explosives Code
AFER	Australian Forum for Explosives Regulators
API	American Petroleum Institute
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CAP	Competent Authorities Panel
CBA	Costs And Benefits Analysis
CoP	Code of Practice
C-RIS	Consultation Regulatory Impact Statement
DCP	Dry Chemical Powder
DGL	Dangerous Goods List
DGSA	Dangerous Goods Safety Advisor
DMIRS	Department of Energy, Mines, Industry Regulation and Safety
D-RIS	Decision Regulatory Impact Statement
ECOSOC	United Nations Economic and Social Council
EIP	Emergency Information Panel
EU	European Union
FRP	Fibre-reinforced plastic
GHS	Globally Harmonised System for the Classification and Communication of Hazardous Chemicals

Abbreviation	Term
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO TIs	International Civil Aviation Organization Technical Instructions
IGA	Intergovernmental Agreement
IMDG	International Maritime Dangerous Goods
ITMM	Infrastructure and Transport Ministers Meeting
ISO	International Organization for Standardization
LQ	Limited Quantity
LNG	Liquified natural gas
MSI	Model Subordinate Instrument on the Transport of Dangerous Goods by Road or Rail
MEGCs	Multiple-element gas containers
MEMUs	Mobile Explosive Manufacturing Units
MTAW	Melbourne Transport and Warehousing
MPUs	Mobile Processing Units
NPE	Nonylphenol Ethoxylate
NSW	New South Wales
NTC	National Transport Commission
OIA	Office of Impact Analysis
OECD	Organisation for Economic Cooperation and Development
OTIF	Organisation for International Carriage by Rail
PG	Packing Group
PHMSA	Pipeline and Hazardous Material Safety Administration
PSN	Proper Shipping Name
PPE	Personal Protective Equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SCBA	Self-contained breathing apparatus
TDG	Transport of Dangerous Goods

Abbreviation	Term
TfNSW	Transport for New South Wales
TERP	Transport Emergency Response Plan
TIC	Transport and Infrastructure Council
UN	United Nations
UN MR	United Nations Model Regulation
UNECE	United Nations Economic Commission for Europe
USA	United States of America
WA	Western Australia
WP	Working Paper
WTO	World Trade Organisation
49 CFR	Title 49 of the Code of Federal Regulations

Executive Summary

Introduction

- Economic activity around the world depends on the production and use of dangerous goods. We cook with flammable gas, we wash clothes with alkaline washing liquids, and power our cars through flammable liquids or electric storage devices. The dangerous goods transport industry represents a sizeable part of Australia's $72.6 billion freight industry. The chemical manufacturing industry alone supplies 108 of Australia’s 114 industries.
- Dangerous goods are hazardous materials and include flammable, corrosive, explosive, toxic, oxidizing, and water-reactive substances. Incorrect labelling, packing, and transporting, of these substances can lead to catastrophic incidents. Regulatory mechanisms aim to ensure the safe transport of dangerous goods, minimising risks to public safety and the environment, without unduly restricting their movement, except for those classified as too dangerous to transport.
- The UN Model Regulations (UN MR) and associated instruments for sea, air, road, and rail are the basis for international co-operation and harmonised requirements to inform regulation of the transport of dangerous goods and to facilitate global supply chain safety and efficiency. Unlike many countries that base their dangerous goods land transport codes on the UN Economic Commission for Europe (UNECE) road-specific instrument (ADR) and Intergovernmental Organisation for International Carriage by Rail (OTIF) rail-specific instrument (RID), the Australian Dangerous Goods Code (the Code) is based on the UN MR, with all mode-specific requirements developed in and specific to Australia.
- The Code is updated every two years with consultation with industry and States and Territories, following the biennial maintenance cycle of the UN MR. As the UN MR is mode-agnostic, Australian-specific land-transport requirements have not been comprehensively updated since 2007. In 2020, transport and infrastructure ministers agreed to a comprehensive review of the Code to update outdated chapters, identify, and correct translation errors, and incorporate relevant ADR and RID concepts.
- This Consultation Regulatory Impact Statement (C-RIS) seeks feedback on the draft Code to evaluate the costs and benefits of proposed changes, informing the development of effective regulations. The process includes drafting, ongoing consultation, and setting a timeline for the Code's implementation by October 1, 2026. The current legislative framework and implementation of the Code by States and Territories are out of scope for this C-RIS.

What is the problem?

- Unlike many countries that base their land transport codes on the mode-specific ADR and RID, the Code is based directly on the UN MR. Australia’s current process for developing and updating the Code based on the mode-agnostic UN MR, has resulted in a number of gaps in our road and rail requirements. This includes several missing provisions and insufficient detail, increasing the risks to people, property and the environment associated with dangerous goods transportation.
- Gaps in the Code have created the need for the development of and reliance on separate regulatory tools such as Competent Authority interventions at the state and national level. While one-off Competent Authority interventions are manageable, they reduce the usefulness and transparency of the Code. As these decisions sit outside of the Code, they are often poorly documented and are hard to find.
- Where land transport provisions have been included in the Code, they are Australian-specific, and have been developed in response to singular issues or stakeholder interests. Many of these are now outdated and are not aligned with international standards and codes for other modes. Where Australian specific

provisions are outdated, misaligned with international standards and at variance with sea and air codes, this creates unnecessary burden and adds substantial costs to industry.

- When initially aligning to the UN MR during the transition from the 6th (ADG 6) to the 7th (ADG 7) Edition of the Code, many provisions were either omitted completely, or dispersed through other areas of the Code. This has led to a repository of often disjointed, contradictory, and difficult to navigate road and rail requirements. The lack of a cohesive and consistent Code contributes to the confusion and complexity of businesses, employees, and regulators in attempting to comply with and enforce the requirements of the Code.
- There is an opportunity for the Code to improve community safety by addressing gaps in the current Australian Explosives Code (AEC), which is outdated and has no responsible agency. Bringing Class 1 explosives into the Code would support a coordinated and legally recognised approach to updating the AEC, streamline compliance, and reduce the burden on both industry and regulators.

Why is Government action needed?

- Overall, the primary intended outcomes of the Code are to:
  - Reduce as far as practicable the risk of personal injury, death, property damage and environmental harm arising from the transport of dangerous goods by land.
  - Whilst minimising intermodal and international barriers to trade, supporting industry efficiency and Australia's participation in the global economy.
- The lack of a systematic approach for developing and maintaining the road and rail specific requirements of the Code, coupled with a lack of cohesiveness and consistency in the existing requirements, has led to a continuous cycle of ad-hoc and random amendments, without consideration of the consequential inconsistencies or contradictions introduced by those changes.
- The current process is time consuming and expensive. With each amendment, substantial government costs are involved in legal advice, training and guidance material, legislation drafting, and the development of regulatory impact analysis. On the industry side, administration and costs are likewise incurred to understand and interpret new requirements, train employees, and put in place processes and systems to ensure compliance with the changes.
- The continuous cycle of amendments also places pressure on State and Territory governments and their parliaments, contributing to inconsistent timing of the implementation of legislative amendments by jurisdictions. Where jurisdictions have not yet been able to implement agreed amendments, this creates challenges for both regulators – e.g., increasing the difficulty in assessing compliance– and duty holders – e.g., adding to the operational complexity of entities based in multiple jurisdictions.
- Most importantly, however, the current regulatory process has failed to keep land mode provisions of the Code current and aligned with international standards as well as other transport codes. Under the current process, land mode provisions have not been comprehensively reviewed or updated since 2007, leaving significant gaps in the road and rail requirements of the Code
- The Australian government has made the decision that regulation of the dangerous goods transport industry is required in order to keep the community safe and to comply with international standards. Without government intervention, industry cannot fully control the risks associated with its activities. The transportation of dangerous goods is subject to market failures such as imperfect information and economic externalities. The Government plays a critical role in addressing these market failures, ensuring the safety of people, property, and the environment across Australia.

What options were considered?

The identification of the selected option follows a comprehensive process involving extensive consultation with industry, regulators and the public since 2019. Four potential options were identified for consideration in addressing problems with the Code, discussed in Chapter 2.

- **Option 1** is the 'do nothing' and represents no change to the current Code nor the current process for developing and maintaining the Code. Continuing with the status quo is not an option. Numerous NTC reviews have identified gaps and errors in the land provisions of the Code which must, at a minimum, be addressed to ensure the safe and smooth land transportation of dangerous goods across Australia.
- While **Option 2** would address gaps in the Code and improve alignment with ADR/RID, the option is not sustainable. As per the base case, Option 2 would maintain the current process for developing and maintaining the Code. This is the approach that has been adopted for previous reviews and has failed to keep the land mode provisions of the Code contemporary and up to date. Without a systematic approach to updating the land provisions of the Code, these requirements will become increasingly obsolete and misaligned over time.
- In line with Principle 2 of the comprehensive review, **Option 3** would incorporate ADR/ RID concepts into the Code by becoming a contracting party to the modal agreements. By leveraging the ADR/RID process for maintaining the land provisions of the Code, Option 3 would support simplification of the maintenance task as well as a contemporary Code going forward. However, due to the ADR/RID's origins in Europe, significant derogations would be required for some practices. Duty holders would need to read both the ADR/RID and Australian derogations to understand their responsibilities, making this solution overly complex and impractical.
- **Option 4** was identified as the only viable option through extensive consultation with stakeholders. The option builds on the benefits from Option 3, with the added simplicity of supporting a single point of reference for the dangerous goods transport industry. This would combine both internationally and locally derived land provisions. By supporting a transparent and easy to navigate Code, Option 4 would reduce the complexity currently experienced by industry in understanding and complying with its requirements. By reducing reliance on measures outside of the Code such as Competent Authority determinations, Option 4 would also promote consistency in the application of its requirements across jurisdictions. Together, these drivers would support a more effective and efficient Code into the future.

The draft Code

Changes to the structure and content of the Code, are summarised in Table 1, organised by part.

Table 1 Content of the Code under selected option by Part

Part	Description	What has remained	What has changed
1.	General Provisions	Most provisions within this chapter remain relatively unchanged.	• Restructured for better alignment with ADR and greater clarity of requirements. • Clearer understanding of general safety obligations applicable to duty holders. • Many provisions are currently addressed in the model legislation, or under Competent Authority policies/processes. Inclusion of these provisions in the Code supports improved understanding of requirements.
2.	Classification	The classification criteria, precedence of hazards criteria,	• Restructured for easier navigation and greater clarity of requirements.

Part	Description	What has remained	What has changed
		and principles of classification remain the same.	• Substances that are prohibited from transport due to the hazard they present are clearly identified. • Relocated additional classification criteria from special provisions for a comprehensive overview of requirements.
3.2.	Dangerous Goods List DGL	Structure largely remains the same.	• DGL entries for prohibited or unregulated substances are clearly marked. • DGL entries with additional requirements for specific UN Number substances are split into separate line items with descriptive text outlining the requirements. • New columns for classification codes and carriage conditions, including loading, unloading, handling, and operations, have been added. • A list of UN numbers for certain chemical groups has been included to aid in segregating incompatible dangerous goods as specified in Table 9.2 of the Code.
3.3.	Special Provisions	All special provisions taken from the UN MR remain unaltered, other than those discussed in Section 5.6.2 Special Provisions	• Redundant special provisions have been removed from the Code. • Added special provisions to assist with correct UN number assignment. • Introduced additional special provisions for land transport context. • Moved special provisions related to transport methods to Part 7. • In some instances, the need for Competent Authority intervention has been replaced with detailed requirements. • Conditional concessions have been included for the transport of waste paints and other commodities that are unable to comply with requirements for new products and are therefore currently being transported in non-compliance. • Some current total exemptions have been modified to require a minimum assurance of safety in order to qualify for the exemption.
4.	Packing and tank provisions	Most provisions within this chapter remain relatively unchanged.	• Packing instructions updated with additions and clarifications for requirement interpretation. • Additional guidance for: • – Determining fill levels. • – Packagings permitted to be used as salvage packagings. • – Verification of chemical compatibility with plastic packagings. • Moved provisions for vehicle selection and packaging type transport to Part 7. • Incorporated determinations and industry codes previously outside the Code. • Definition and requirements for use of MEGCs have been expanded to include MEGCs that are not designed for multi-modal use.
5.	Consignment procedures	Basic structure remains.	• Content revised to remove duplication and improve readability.

Part	Description	What has remained	What has changed
			• Relocated several requirements to more relevant sections; exemptions currently in Part 5 moved to Part 1, preparation of transport documentation moved from Part 11 to Part 5 and requirements to mark and label segregation devices moved from Part 4 to Part 5. • Maintained Australian-specific road and rail methodologies, with amended EIP and look of placards trigger requirements. • Removed concept of 'placardable unit' and clarifying distinction between 'packaged dangerous goods' and 'tanks'. • Distinguished marking and labelling of 'packaged dangerous goods' versus EIP for 'tanks' and vehicles. • Clarification has been provided that IBCs are defined as 'packaged dangerous goods', resulting in removal of the requirement to display an EIP on them. • Retained vehicle EIP requirement when transporting IBCs, addressing emergency services' concerns.
6.	Requirements for the construction and testing of packagings, IBCs, large packagings, tanks and bulk containers	Structure largely remains the same.	• Incorporation of specific ADR requirements, such as permission for the use of tanks designed according to the ADR. • Clarification of requirements for Code users, for example, requirements for segregation devices, to support comprehension. • Incorporation of Competent Authority determinations, such as vacuum-operated waste tanks, for transparency. • Addressing existing gaps in the Code, including requirements for tube-vehicles.
7.	Provisions concerning the conditions of carriage, loading, unloading and handling	• Provisions largely unchanged.	• Restructured for alignment with the transport process to reduce complexity and improve compliance understanding. • Centralised provisions for vehicle selection and loading tasks. • Improved/simplified identification of appliable requirements.
8.	Requirements for vehicle crews, equipment, operation and documentation	N/A	• New Part 8 of the Code provides detailed provisions for requirements that need to be implemented by carriers (transport operators) and drivers of dangerous goods vehicles. • Chapters and sections within this part will support effective implementation of these requirements.
9.	Requirements concerning the construction and approval of vehicles	Requirements largely consistent with the Australian Standards (AS2809.1).	• New Part 9 of the Code specifies requirements that are included in the Australian Standards, which are not freely accessible (AS2809.1).

What is the likely benefit of each option?

- The draft Code supports the safe transportation of dangerous goods:
  - By addressing gaps and updating safety concepts, the draft Code mitigates emerging risks, supporting the continued safety of dangerous goods land transport in Australia.

  - More coherent and easier to navigate requirements, will further support duty holders and regulators alike to comply and administer compliance with the Code.
- Safety is balanced with the efficient and smooth transportation of dangerous goods:
  - Improved alignment of the Code with international standards will minimise the cost burden of dangerous goods importers and exporters alike, facilitating trade and economic growth.
  - By improving alignment with other transport modes, the draft Code will also reduce intermodal frictions and costs in the transportation of dangerous goods across Australia.
- Additional industry compliance costs associated with the draft Code are expected to be partially if not fully offset by proposed changes that reduce the regulatory burden on industry:
  - A significant number of new concessions for low-risk goods will either remove these goods from the requirements of the Code or provide more options for complying with them.
  - The inclusion of a wider range of harmonised standards from the ADR, will provide greater choice and flexibility, supporting the productivity of the dangerous goods transport industry.
- Similarly, government implementation costs are also expected to be partially if not fully offset by efficiencies supported through the draft Code:
  - Leveraging the ADR framework and process for maintaining land provisions, will support simplification of the maintenance task and a contemporary Code going forward.
  - The draft Code shifts reactive provisions reliant on Competent Authority intervention to being proactive, reducing unnecessary burden and time delays for all parties.
- Overall, the hypothesis to be tested through consultation is that the safety benefits supported by the draft Code would outweigh the additional costs to industry and government to implement and demonstrate compliance with proposed changes to requirements.
- An Impact Analysis Framework has guided the assessment of costs and benefits, direct and indirect, both qualitative and quantitative, to key impacted groups including suppliers and manufacturers of dangerous goods, the dangerous goods transport industry, government, and the broader community.
- Due to data limitations, it has not been possible to quantify the size of impacts for the C-RIS. Our proposed approach for undertaking the Impact Analysis addresses these data limitations front-on to iteratively develop the CBA over the C-RIS and the D-RIS.

1 Introduction

Key messages

Economic activity around the world depends on the production and use of dangerous goods. We cook with flammable gas, we wash clothes with alkaline washing liquids, and power our cars through flammable liquids or electric storage devices.[1] The dangerous goods transport industry represents a sizeable part of Australia's $72.6 billion freight industry.[2,3] The chemical manufacturing industry alone supplies 108 of Australia's 114 industries.[4]

Dangerous goods are hazardous materials and include flammable, corrosive, explosive, toxic, oxidizing, and water-reactive substances. Incorrect labelling, packing, and transporting, of these substances can lead to catastrophic incidents. Regulatory mechanisms aim to ensure the safe transport of dangerous goods, minimising risks to public safety and the environment, without unduly restricting their movement, except for those classified as too hazardous to transport.

The UN Model Regulations (UN MR) and associated instruments for sea, air, road, and rail are the basis for international co-operation and harmonised requirements to inform regulation of the transport of dangerous goods and to facilitate global supply chain safety and efficiency. Unlike many countries that base their dangerous goods land transport codes on the UN Economic Commission for Europe (UNECE) road-specific instrument (ADR) and Intergovernmental Organisation for International Carriage by Rail (OTIF) rail-specific instrument (RID), the Australian Dangerous Goods Code (the Code) is based on the UN MR, with all mode-specific requirements developed in and specific to Australia.

The Code is updated every two years with consultation with industry and States and Territories, following the biennial maintenance cycle of the UN MR.[5] As the UN MR is mode-agnostic, Australian-specific land-transport requirements have not been comprehensively updated since 2007. In 2020, transport and infrastructure ministers agreed to a comprehensive review of the Code to update outdated chapters, identify, and correct translation errors, and incorporate relevant ADR and RID concepts.

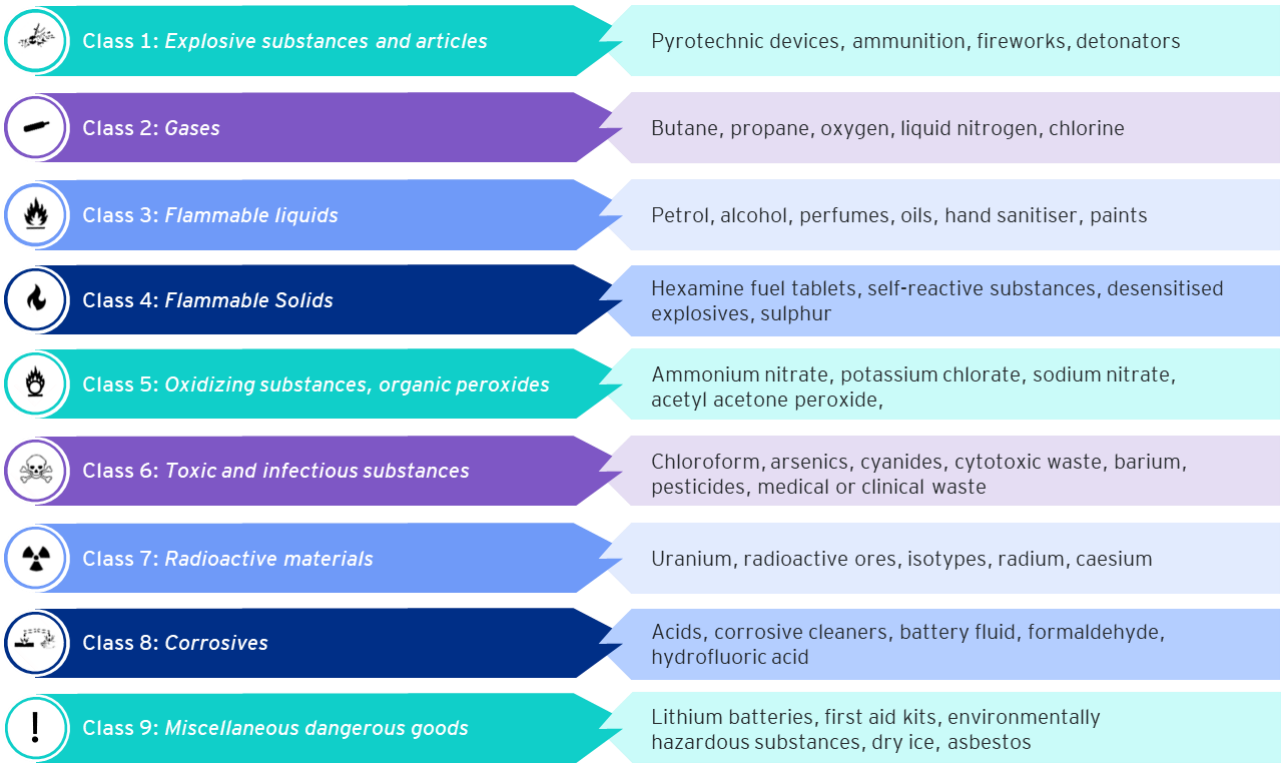
This Consultation Regulatory Impact Statement (C-RIS) seeks feedback on the draft Code to evaluate the costs and benefits of proposed changes, informing the development of effective regulations. The process includes drafting, ongoing consultation, and setting a timeline for the Code's implementation by October 1, 2026. The current legislative framework and implementation of the Code by States and Territories are out of scope for this C-RIS.

1.1 Background

1.1.1 What are dangerous goods?

Dangerous goods are hazardous products, substances and materials that can cause serious harm to people, property, and the environment. There are nine classes of dangerous goods that are currently regulated by the Code, as summarised by Figure 1.

Figure 1: List of dangerous goods with example substances[6]



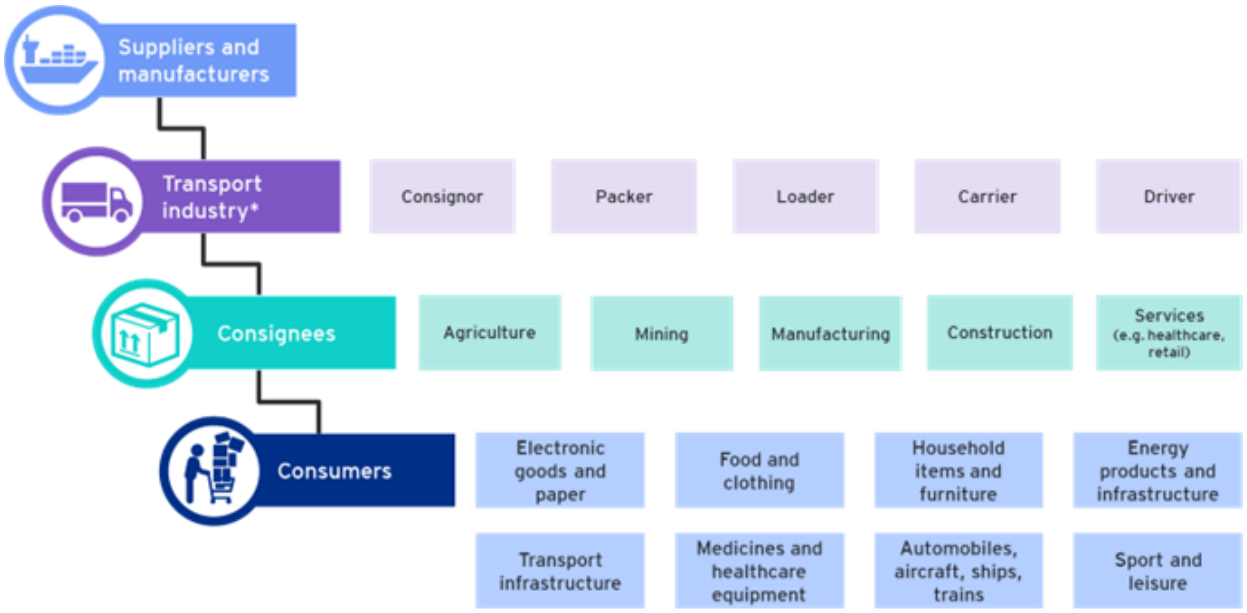
Dangerous goods include flammable, corrosive, explosive, toxic, oxidizing, and water-reactive substances. Incorrect labelling, packing, transporting, loading, unloading or mishandling of these substances can result in catastrophic incidents such as explosions, fires, significant harm to people and animals—including poisoning and chemical burns—and damage to the environment, such as air and water pollution.

1.1.2 The dangerous goods transport supply chain

The dangerous goods transport supply chain begins with manufacturers or suppliers, who engage consignors, packers, loaders, carriers, and drivers (i.e. the transport industry), to safely move dangerous goods to consignees, who use these dangerous goods as ready for use products or as intermediary inputs in the production of goods and services that our modern world depends on.

Figure 2 illustrates the dangerous goods transport supply chain.

Figure 2: Dangerous goods transport supply chain



** Note: In the transport industry, a single duty holder may assume multiple responsibilities, including various duties, tasks, or roles.*

Australia manufactures, imports and exports large volumes of dangerous goods such as refined and crude petroleum, natural gas, some ores and concentrates, and chemicals.[7,8] For example, the basic chemical and chemical product industry is Australia's third largest manufacturing industry by value added ($11.3b, FY23).[9,10] In 2017-18, Australia imported $25.5 billion in chemical products, including basic organic chemical products, fertilisers, other petroleum and coal products. In the same year, Australia exported $6.2 billion in chemical products, including basic inorganic chemical products and cleaning compounds.[10] Australia is also the world's largest exporter of liquefied natural gas (LNG), accounting for 20% of global export trade in LNG.

The domestic freight industry is estimated at $72.6 billion[2,3], with total domestic freight volumes projected to grow by 26% between 2020- 2050. Road and rail freight volumes are projected to grow by 77% and 5.7%, respectively.[2,3] Dangerous goods are believed to represent a significant portion of the annual road and rail freight industry revenue. In 2002, dangerous goods made up an estimated 4% of total tonnes moved and 8% of the total tonne-kilometres travelled in 2002.[11] The dangerous goods land transport industry contains major freight players such as Toll Group, Linfox, and K&S for transport by road, and Aurizon, Pacific National, and SCT Logistics for transport by rail.[2,3]

The dangerous goods transport industry is a contributor to almost all sectors of the economy. Of Australia's 114 industries, for example, 108 rely on the chemistry sector as intermediate inputs into essential goods and services. Major industries that depend on the production of chemicals include manufacturing, construction, services (e.g. healthcare), agriculture and mining.[10] For example, flammable liquids (petrol) are used for manufacturing and delivering of goods, while pesticides and fertilizers are used in agriculture.

1.2 Regulating the transport of dangerous goods

Existing regulatory mechanisms aim to ensure the safe transport of dangerous goods, minimising risks to public safety and the environment without unduly restricting their movement, except for those classified as too hazardous to transport.

1.2.1 About the UN Model Regulations

The United Nations (UN) leads a process of international co-operation to agree harmonised requirements informing the regulation of the transport of dangerous goods and to facilitate global supply chain safety and efficiency. Although these regulations are not legally binding, they are directed at governments with the expectation that they will adhere to the stipulated principles when updating or creating new regulations.

The fundamental concepts of dangerous goods classification, packaging, marking, labelling, and communication, as outlined in the UN MR, are widely accepted internationally, and serve as the foundation for transport codes around the globe. The UN MR do not include requirements or recommendations to address risks that are specific to any particular mode of transport.

The UN MR are guided by 12 underlying general principles, which are summarised in Table 2. As a full member state abiding by the UN MR, the Australian Government has committed to these principles.

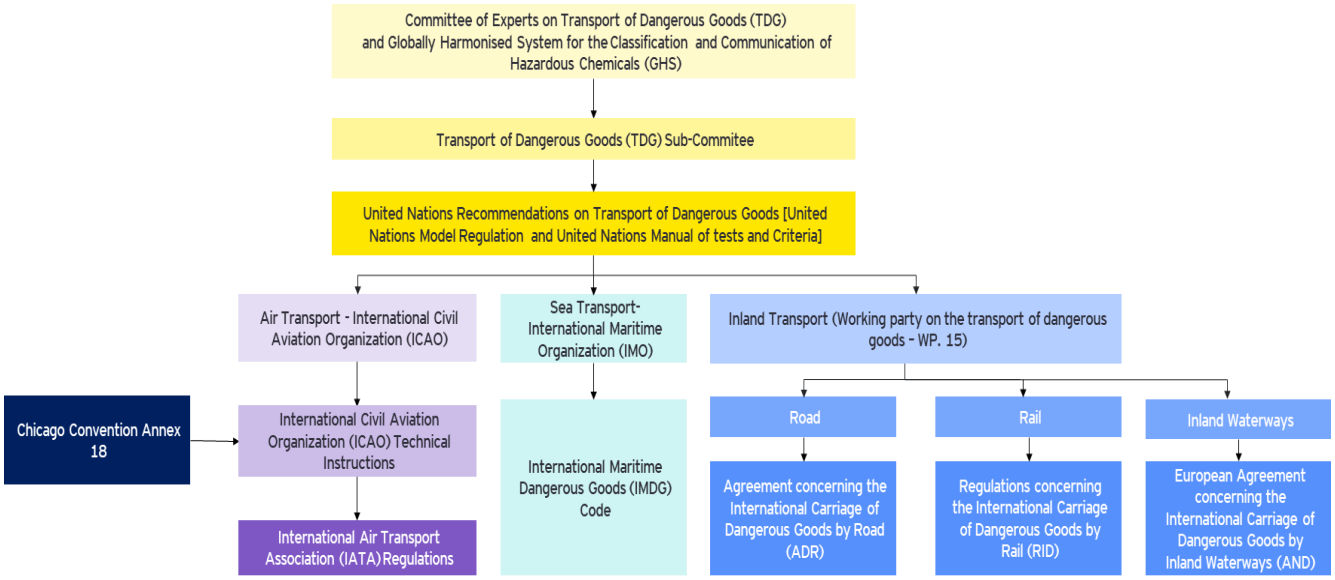
Table 2: UN MR guiding principles[12]

Principle	Description
1	Regulations for the transport of dangerous goods aim to ensure safety and environmental protection, without impeding their movement, by minimising risks and barring excessively hazardous materials.
2	Transport regulations for dangerous goods promote safe, advanced, and harmonised transport of dangerous goods across all modes, with provisions for specific modal requirements.
3	The recommendations do not apply to the bulk transport of dangerous goods in sea-going or inland navigation bulk carriers or tank-vessels, which is subject to special international or national regulations.
4	The Model Regulation provides a framework for consistent national and international dangerous goods transport rules, with flexibility for specific needs.
5	The form of the Model Regulation aims to harmonise multimodal transport regulations, ease adoption by authorities, and enhance understanding, compliance, and safety in dangerous goods transport.
6	The UN Economic and Social Council (ECOSOC) seeks global harmonisation of dangerous goods transport regulations through mandatory Model Regulations for ease of adoption and enforcement.
7	The UN MR cover all aspects of dangerous goods transport, including training, security, classification, labelling, documentation, and special requirements, ensuring comprehensive guidance.
8	The harmonised system for classifying, packing, marking, and documenting dangerous goods simplifies processes for carriers and authorities, reducing trade barriers and supporting sector growth.
9	Regulations should differentiate between general requirement (e.g., marking and packing) and technical requirements (e.g., packaging specifications and testing), and clearly assign responsibilities.
10	To provide the greatest international consistency, the Model Regulations should be as comprehensive as possible.

Principle	Description
11	If areas or requirements needing substantial changes are identified in the course of the work, they should be brought to the attention of the Transport of Dangerous Goods (TDG) Sub-Committee.
12	The Model Regulations generally exclude single mode cargo unit specifications and modal-specific operations but allow authorities to add these details as needed in designated sections.

The UN MR, along with the Manual of Tests and Criteria — which provides technical details on testing methods to determine product hazards — are integral parts of the recommendations on the transport of dangerous goods. These are developed and maintained by the TDG Sub-Committee led by the Committee of Experts on TDG and the Globally Harmonised System for the Classification and Communication of Hazardous Chemicals (GHS) as depicted in Figure 3.

Figure 3: Mode-Specific Instrument Development



UN mode-specific instruments are based on the provisions of the UN MR, including classification procedures and the Dangerous Goods List. UN mode-specific instruments exist for road (ADR), rail (RID), air (ICAO TIs) and sea (IMDG). Where requirements are created or amended in the UN MR, the modal bodies work to transform generic requirements into more detailed requirements that are specific to their transport mode. Impacts from these changes can then be fed back into the UN MR to continually improve it. This process ensures a comprehensive program of ongoing review, using findings and expertise from regulators and industry throughout the world. The UN MR is updated biennially to keep pace with technical advancements, the emergence of new substances and materials, and the demands of contemporary transport systems,

Many countries including key trading partners to Australia such as China – have already become contracting parties to or based their own standards on the ADR and RID (refer to Table 3). As a member of the World Trade Organisation (WTO) and a Comprehensive Strategic Partner to the Association of Southeast Asian Nations (ASEAN), Australia is obligated to align with the ADR and RID.

Table 3: Global approach to dangerous goods regulation[13]

Country / Region	Description
ASEAN	In 2002, the Transport Ministers of ASEAN signed Protocol 9 to the ASEAN Framework Agreement on the Facilitation of Goods in Transit. This requires all contracting parties to the agreement to adopt the provisions of the UN MR and ADR.
China	On 1 December 2018, China implemented the Regulations concerning Road Transportation of Dangerous Goods (JT/T 617). These regulations are closely aligned to the ADR, with three of the seven parts of the regulations directly referencing the ADR. Unlike other countries using direct reference, China's regulations specifically reference ADR 2015. Referencing a specific version of the ADR is likely to impact on China's ability to maintain currency of its requirements.
European Union (EU)	All EU Member States have signed the Agreement concerning the International Carriage of Dangerous Goods by Road, which mandates the ADR, and the Convention for International Transport by Rail, which mandates the RID. Legal effect is given to the ADR and RID through the Acts, Decrees and Regulations of the Member State. Duties of the parties involved in the transport chain are contained in the ADR and RID, along with the technical provisions. Member States are permitted to regulate variations to the provisions in the ADR but must notify these to ECOSOC.
United States of America (USA)	The land transport of hazardous materials (dangerous goods) in the US is regulated under Title 49 of the Code of Federal Regulations (49 CFR). The Pipeline and Hazardous Material Safety Administration (PHMSA) in the Department of Transportation is responsible for 49 CFR. The PHMSA administers the regulations and issues procedural regulations. The PHSMA also issues Final Rules that amend the Hazardous Materials Regulations, including aligning the regulations with revisions to the UN Recommendations and modal codes. Final Rules were issued in 2011 and 2009 to update the regulations to align with the UN MR. The US is represented by PHMSA at both the UN Sub-Committee and WP.15, where they have full voting status.

1.2.2 National framework for the transport of dangerous goods by road and rail

Australia uses a model law national scheme structure to implement laws regulating the transport of dangerous goods by road and rail. This structure contains the administrative provisions (under the Model Law Act), duties to specific parties (under the Model Subordinate Instrument) and gives legal effect to the Code. The Code sets out the technical requirements for the land transport of dangerous goods. The objectives of the Code include ensuring safe transportation of dangerous goods, ensuring uniformity and consistency and harmonising Australian regulations with international intermodal regulations.

Given the national instruments do not have legal effect on their own, states and territories replicate provisions from the Act and Model Subordinate Instrument (MSI) in their own legislation, giving legal effect to the Code. The Code is given force in each jurisdiction by direct reference or 'call up' in their regulations.

The model law is underpinned by an Intergovernmental Agreement (IGA). Under the IGA, the National Transport Commission (NTC) is responsible for developing policy and model laws, including maintaining the model laws for land transport of dangerous goods, for approval by the Transport and Infrastructure Ministers Meeting (ITMM) formerly the Transport and Infrastructure Council (TIC). All amendments to model laws must be approved by the ITMM by consensus. Under the IGA, every State and Territory must 'use their best endeavours to implement and maintain Agreed Reforms in a uniform or nationally consistent manner.'

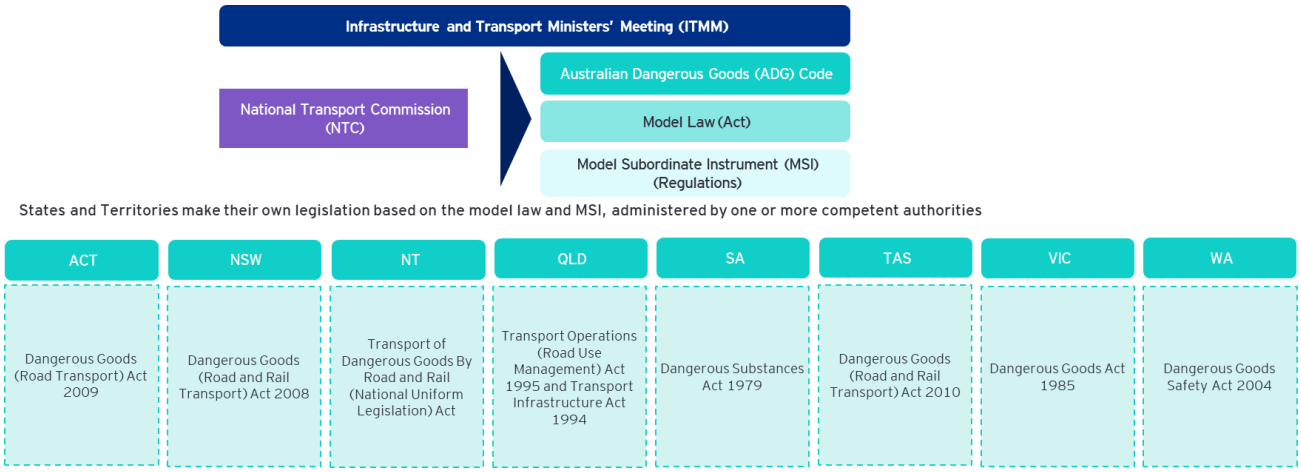
Each State and Territory appoints one or more Competent Authorities to administer the regulation of dangerous goods transport within their jurisdiction. In this role, Competent Authorities have responsibility for making decisions relating to the transport of dangerous goods. To support the consistent application of

dangerous goods legislation across the country the Competent Authorities Panel (CAP) was set up. The CAP is made up of representatives from each of the Competent Authorities. The CAP provides a mechanism for nationalising determinations, approvals and exemption applications referred by a Competent Authority.

The Competent Authorities are also responsible for enforcing the regulations for the transport of dangerous goods in accordance with the Code in their jurisdiction. However, legislation may additionally provide for the extension of enforcement powers to other persons or bodies, such as police.

Figure 4 provides a summary of the Australian Dangerous Goods Regulatory Framework.

Figure 4: Australian Dangerous Goods Regulatory Framework[11]



1.2.3 Responsibilities of duty holders

Businesses must comply with relevant State and Territory specific Acts and Regulations. These give legal effect to the Code and set out key responsibilities of duty holders across the transport lifecycle of dangerous goods. These responsibilities are summarised by transport activity, which includes:

- Importing, or arranging for the importation of, dangerous goods into Australia.
- Packing dangerous goods for transport.
- Marking or labelling packages containing dangerous goods for transport.
- Placarding containers and vehicles in which dangerous goods are transported.
- Consigning dangerous goods for transport, including the preparation of transport documentation.
- Loading dangerous goods onto a vehicle, or into a container that is to be put on a vehicle, for transport.
- Unloading dangerous goods that have been transported.
- Handling fumigated cargo transport units.
- Driving a vehicle carrying dangerous goods.
- Maintaining vehicles and equipment used in the transport of dangerous goods.
- Following appropriate procedures such as the implementation of emergency plans in dangerous situations.
- Being the consignee of dangerous goods that are transported.

1.3 Comprehensive review of the Code

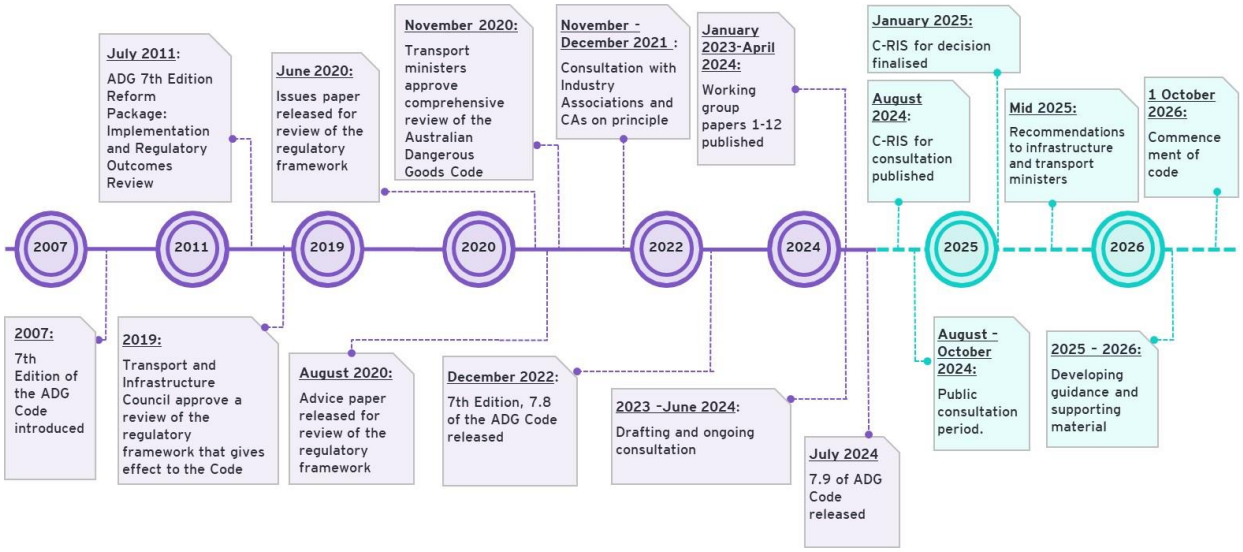
1.3.1 Previous reviews

In 2019, the TIC (now ITMM) approved an NTC review of the regulatory framework that supports the Code. The objective of the review was to identify potential improvements to be made to the Code's regulatory framework and whether greater guidance was required to promote consistent compliance and enforcement of the technical requirements within the Code.[11] The review involved the release of an *'Issues Paper*' in June 2020 for consultation, and an '*Advice Paper*' in August post consultation.

As part of consultation on this review, stakeholders identified significant gaps in the land mode requirements of the Code. The last time these were reviewed comprehensively was in 2007, with the introduction of the 7th version of the Code. To address this feedback, the NTC's Advice Paper recommended a full review of the Code to update outdated chapters, identify and correct translation errors, incorporate relevant ADR concepts as well as requirements for Class 1 and Division 6.2.[13]

Figure 5 provides a timeline of key milestones in the life of the Code.

Figure 5: Code Review Timeline



1.3.2 Current review

In November 2020, the ITMM agreed for the NTC to conduct a comprehensive review of the Code. ITMM also supported the proposal to incorporate principles from the ADR and the RID. The goals of the review are to deliver a Code that:

- Remains contemporary.
- Addresses the specific risks of transport by land, while also recognising any risks unique to the Australian transport environment.
- Is aligned to international practices that support the smooth and safe movement of dangerous goods across borders and transport modes.[14]

To help guide the review and set it up for success, a set of review principles were drafted. The principles were accompanied by several supporting documents including a high-level overview of the key differences between the Code and the ADR (see Attachment A).

These draft principles were consulted with stakeholders via an online survey, and three separate webinars, targeted at: Competent Authorities, industry bodies and all stakeholders. Following consultation, the review principles were updated to include the following:

1. The current practice of drawing core requirements not specific to a mode from the UN MR will continue. These core requirements will also continue to be updated in line with the UN MR.
2. The starting point for requirements specific to land transport will be the requirements in ADR and RID. But the Code will keep current methodologies for placarding, segregation, and compliance with Australian Standards (where relevant).
3. The IMDG Code will be the starting point for:
    - The table of dangerous goods that must be segregated for transport.
    - The point at which emergency information must be included on marking and labelling, and placarding.
4. Existing provisions in the Code unique to Australia will only be kept if an analysis against ADR or RID identifies a valid risk that is not controlled by an existing ADR or RID provision.
5. Variations to ADR or RID provisions will only be made if either:
    - The variation does not impact the cohesiveness of the requirements overall.
    - There is data and evidence that show the benefits of making the variation outweigh the impact of varying ADR or RID provisions.
6. Existing Australian methodologies identified to be kept will be reassessed to make sure they still meet their intended purpose. This includes reassessing trigger thresholds and operational application, e.g., reassessing placard thresholds.

Once the principles were established, the content of the Code was broken into a series of topics to allow consultation to be conducted in more manageable pieces.

To date, the NTC has publicly consulted widely on 12 working group papers as well as draft parts of the Code with their starting point in the ADR and RID documents (as per Principle 2 above). A copy of these papers can be found on the NTC website.[15]

1.4 Purpose of this C-RIS

1.4.1 In scope

The purpose of this C-RIS is to elicit feedback on the draft Code and obtain evidence on the costs and benefits of proposed changes as part of this. This will inform the best approach to regulate the movement of dangerous goods by rail and road providing a structured basis for government policy development and the establishment of effective and efficient regulations.

Key milestones of the C-RIS include:

- *2023-June 2024*: Drafting and ongoing consultation.
- *July 2024*: Further drafting incorporating consultation comments.
- *End August 2024*: C-RIS and complete draft Code.
- *Mid 2025*: Recommendations to infrastructure and transport ministers.
- *2025-2026*: Development of guidance and supporting material.

- *1 October 2026*: Commencement of the Code.

1.4.2 Out of scope

Items that are out of scope for this C-RIS include:

- The current legislative framework is not in scope.
- Implementation of the Code by States and Territories will be tackled in a separate process post the C-RIS.

1.5 Methodology overview and report structure

The Australian Government's Office of Impact Analysis has confirmed this C-RIS complies with the requirements under the Regulatory Impact Analysis Guide for Ministers' Meetings and National Standard Setting Bodies, of 18 January 2024. As per the guide, an initial C-RIS has been prepared for public consultation, responding to the Office of Impact Analysis' (OIA) first four questions.

Figure 6: OIA questions and methodology

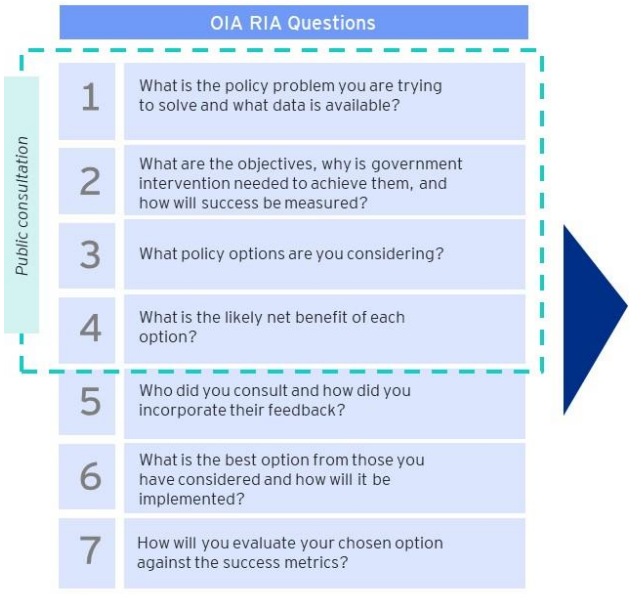


Table of Contents		
Problem definition	This chapter draws on the NTC's review of the ADG Code including stakeholder consultation to set out the problems, their causes and effects to be addressed by this C-RIS.	Chapter 2
Why is Government action needed?	This chapter provides the rationale for government intervention including clear objectives to guide consideration of options addressing problems identified in Chapter 2.	Chapter 3
Options identification	This chapter sets out the options identification and assessment process for this C-RIS, and describes the four options proposed for assessment. The options include a 'do nothing' base case and incorporate non-regulatory solutions. Options which were not deemed viable will not be pursued further.	Chapter 4
Selected Option	This chapter focuses on the selected option and outlines the key changes required under the Code. Key changes are categorised as structural changes, clarification of existing requirements, and changes to requirements for duty holders.	Chapter 5
Benefits Analysis	This chapter undertakes a qualitative analysis of the impacts on businesses, government and the community of the selected option. Chapter 6 also sets out the proposed approach to the quantitative assessment of impacts, which will be undertaken post consultation.	Chapter 6

2 What is the problem?

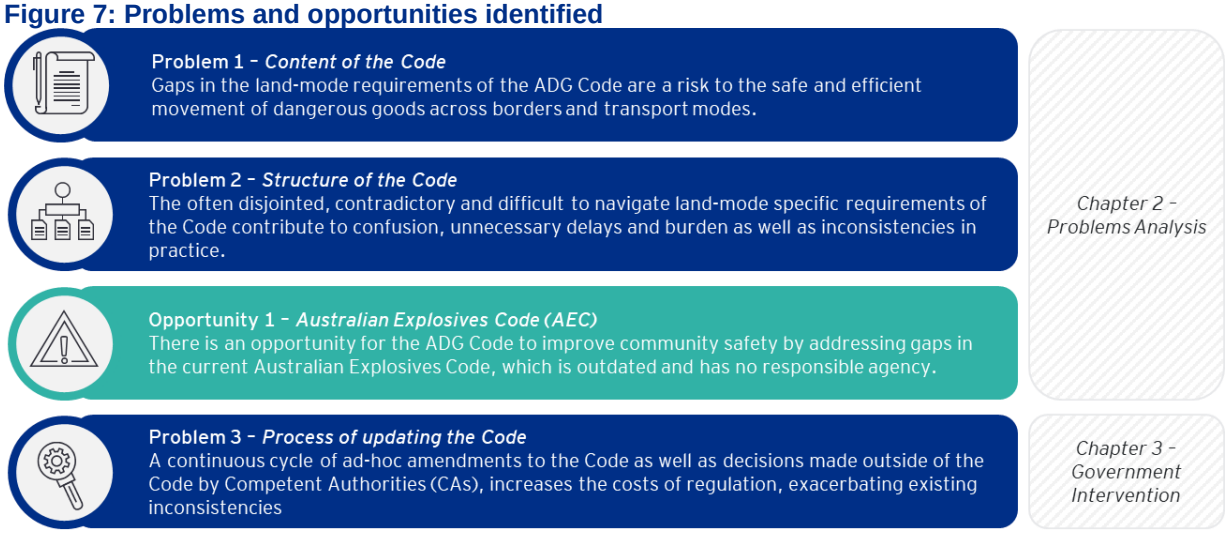
Key Messages

- Unlike many countries that base their land transport codes on the mode-specific ADR and RID, the Code is based directly on the UN MR. Australia's current process for developing and updating the Code based on the mode-agnostic UN MR, has resulted in a number of gaps in our road and rail requirements. This includes several missing provisions and insufficient detail, increasing the risks to people, property and the environment associated with dangerous goods transportation.
- Gaps in the Code have created the need for the development of and reliance on separate regulatory tools such as Competent Authority interventions at the state and national level. While one-off Competent Authority interventions are manageable, they reduce the usefulness and transparency of the Code. As these decisions sit outside of the Code, they are often poorly documented and are hard to find.
- Where land transport provisions have been included in the Code, they are Australian-specific, and have been developed in response to singular issues or stakeholder interests. Many of these are now outdated and are not aligned with international standards and codes for other modes. Where Australian specific provisions are outdated, misaligned with international standards and at variance with sea and air codes, this creates unnecessary burden and adds substantial costs to industry.
- When initially aligning to the UN MR during the transition from the 6th (ADG 6) to the 7th (ADG 7) Edition of the Code, many provisions were either omitted completely, or dispersed through other areas of the Code. This has led to a repository of often disjointed, contradictory, and difficult to navigate road and rail requirements. The lack of a cohesive and consistent Code contributes to the confusion and complexity of businesses, employees, and regulators in attempting to comply with and enforce the requirements of the Code.
- There is an opportunity for the Code to improve community safety by addressing gaps in the current Australian Explosives Code (AEC), which is outdated and has no responsible agency. Bringing Class 1 explosives into the Code would support a coordinated and legally recognised approach to updating the AEC, streamline compliance, and reduce the burden on both industry and regulators.

2.1 Introduction

Through consultation completed as part of the comprehensive review of the Code, three problems and one opportunity were identified. This is set out in Figure 7 and then expanded upon in the subsequent sections.

Figure 7: Problems and opportunities identified



2.2 Problem 1 – Gaps in the Code are a risk to the safe and efficient movement of dangerous goods

2.2.1 Gaps lead to an increase in safety risk associated with the transportation of dangerous goods with costs to people, property, and the environment

Unlike many other countries (discussed in Chapter 1), which base their land transport codes on the mode-specific ADR and RID, the Code is based directly on the UN MR, with all mode-specific requirements being developed in and specific to Australia. UN MR provisions are intended to form core non-mode specific requirements, allowing smooth cross border and cross mode transport. The provisions are often drafted with flexibility to allow the details to be developed by mode-specific working groups. For example, Working Party WP.15 is responsible for developing risk appropriate provisions for land transport in the ADR and RID.

Australia's current policy process for developing and updating the Code based on the UN MR alone, has resulted in several deficiencies in the road and rail requirements of the Code, including several missing provisions and a lack of detailed information for existing provisions. These gaps increase the risk to people, property and the environment associated with the land transportation of dangerous goods in Australia.

Example 1: Gaps in land transport specific special provisions

The Code currently provides special provisions applicable to specific dangerous goods or classes of dangerous goods to allow for their safe transportation. These provisions are based on the UN MR and provide relaxation from requirements for lower risk substances or activities and stricter controls for higher risk substances or activities. However, special provisions in the UN MR are mode-agnostic. The expectation is that these will be supplemented in mode-specific codes, with special provisions relevant to those modes. In the ADR and RID, land-specific special provisions are included as SP 500-676. By replicating the special provisions of the UN MR alone, the Code leaves significant gaps for road and rail transport in Australia.

Moreover, a number of exemptions in the current Code are written as total and absolute and are out of alignment with contemporary land transport practices. A key point of focus in Working Paper (WP) 10 of the Review is special Provision AU01. This provides an almost blanket exemption for environmentally hazardous substances, when transported in packagings that do not incorporate a receptable (a hollow object used to contain a substance) exceeding 500kg/L or in an intermediate bulk container (IBC).

Consequently, unregulated dangerous goods such as environmentally hazardous substances (under the named conditions) do not have to comply with basic safety and packing requirements. The AU01 exemption also means that there is no requirement to mark or label these goods to communicate the hazard to other

duty holders or those responding to incidents involving these goods, leading to potentially significant impacts to people, property and the environment. The Cherry Creek chemical spill in the following case study, exemplifies the environmental impacts of chemical spills as well as the higher expectations of community around the safe management of dangerous goods.

Case Study: Cherry Creek chemical spill

Below: Deceased fish in Cherry Creek

In March 2022, approximately 12,000 litres of a detergent called Teric N9 spilled from Melbourne Transport and Warehousing's (MTAW) Laverton North site into Cherry Creek and Cherry Lake via the local stormwater system. Teric N9 contains the hazardous ingredient nonylphenol ethoxylate (NPE). NPE is classified as UN 3082 and is therefore Currently exempted from the requirements of the Code.[16]

The consequences of the spill were catastrophic including the removal of around 20-tonnes of dead fish from Cherry Lake. A significant number of native eels were also killed, along with rats, pelicans, and other invertebrate aquatic life.[17]

The clean-up process from Melbourne Water involved the flushing and diversion of 36-million litres of contaminated water to the local sewer network. Despite this, chemical levels at the sites of Cherry Creek and Cherry Lake have remained above levels of concern for human health from the date of the incident (7th March 2022) until the 27th of April 2022.

MTAW faces a penalty of up to $1.8 million for the incident.[18,19]

Another key point of focus in WP 10 is special Provision SP 123, which provides a total and absolute exemption for all Dangerous Goods List (DGL) entries under UN 3171 including all battery powered vehicles and other equipment. Since 2017, demand for personal mobility devices such as e-bikes and e-scooters has increased 800%.[20] An unintended consequence of this surge in demand has been the high incidence of e-bike and e-scooter fires due to faulty lithium-ion batteries. This underscores the importance of ensuring the Code remains up to date and contemporary in the face of rapidly emerging technologies.

Case Study: Lithium battery fires and the IMDG Code

Below: Felicity Ace prior to sinking.

Lithium-ion batteries caused over 1,000 fires in the past year in Australia and cause over three fires a day at waste and recycling facilities.[21] Fire authorities across the country have linked the increase in these incidents to significant growth in small, battery powered vehicles like e-bikes and e-scooters, with 75,000 e-bikes being purchased in Australia in 2022, compared to 9,000 in 2017.[22]

In March this year, a lithium-ion battery, believed to be from an e-scooter or e-bike, caught fire in the back of a garbage truck in Sydney's west. This caused the driver to dump the load and extinguish the fire.[23]

Lithium-ion battery fires are also a significant issue in the sea transport of dangerous goods. In 2022, for example, the Felicity Ace sank off the coast of Portugal, and with it 4,000 luxury and electric vehicles. It is believed that lithium batteries in the electric vehicles carried fuelled the fire and prevented it from being contained. In recognition, of the risks presented, special provisions were added to the IMDG Code in 2015 to

address the hazards associated with transportation of lithium-powered goods by sea.[24]

Example 2. Gaps in the safety equipment requirements

There are significant gaps in the safety equipment requirements of the Code. Fire extinguishers and other firefighting equipment are required equipment for vehicles transporting a placard load (i.e. loads of dangerous goods that are required to display placards such as class labels or Emergency Information Panels (EIPs) during transport).[25] However, these requirements are based on the type and volume of the load, they do not consider the most common types of non-impact fires. Moreover, the Code does not provide guidance on when the extinguishers should be used and what the role of the driver is in such an event. Finally, the current Code does not mandate an extinguisher to be carried when transporting less than a placard load. As demonstrated by the case study below, these gaps increase the risks to people, property and the environment, should an incident occur during the transportation of dangerous goods.

Case Study: Great Central Road tanker explosion

Below: Crater from the Great Central Road tanker explosion

In October 2022, a road train on the Great Central Road carrying 61 tonnes of ammonium nitrate emulsion (a substance used in mine site blasting) created a 17-metre-long crater after its rear trailer caught fire and exploded. The blast flattened nearby trees, propelled a 100-kilogram piece of steel shrapnel 413 metres from the blast site and a 31kg piece of the trailer 672 metres from the blast site.

Prior to the explosion, the driver attempted to fight the fire with three separate fire extinguishers and at one point climbed under the trailer to reach the blaze as it spread. Unable to extinguish the fire, the driver unhooked the rear trailer (which was alight) and drove to a safe distance.

The Department of Energy, Mines, Industry Regulation and Safety (DMIRS) stated that the explosion would not have occurred if the driver had been able to extinguish the fire and that the fire extinguishers used by the driver were inappropriate as they are less effective against tyre fires and fires of that size.[26]

Example 3. Gaps in regulating the design and construction of vehicles

Selecting the correct vehicle for the type and volume of dangerous goods being transported is essential to managing the risks associated with dangerous goods. For instance, transporting a tank of Class 3 flammable liquids with a vehicle that poses ignition source hazards could result in a significant fire or explosion. Similarly, a transport company repurposing former petroleum tankers for the transport of substances they were not designed for may pose a catastrophic environmental risk in the event of a spill. The current requirements of the Code around the design and construction of vehicles are deficient. In particular, there is an overt focus on tank vehicles, with limited controls on other vehicles. This has resulted in transport scenarios in the Code where limited or no information is provided. For example:

- **Rail tank wagons:** No standards are currently provided for rail tank wagons The Code notes that rail tank wagons need to be acceptable to the authority responsible for rail safety and Competent Authorities. This makes it difficult for regulators to assess compliance, places greater pressure on Competent Authorities, contributing to inconsistencies in practice across Australia.
- **Vacuum tanks:** No additional information is provided on assessing vacuum tanks for dangerous goods. In 2015, a CAP determination agreed to incorporate certain sections of the ADR and American

Petroleum Institute (API) Recommended Practice into practice. However, this has not been formally incorporated into the current Code. This makes it very difficult for a transporter to be aware of their obligations in design, use and maintenance of vacuum tanks for dangerous goods.

- **Fibre-reinforced plastic (FRP) tanks:** The UN MR contain provisions for UN specification FRP portable tanks, but the Code contains no formal provisions for the design and construction of non-UN FRP tanks. With an increasing demand for FRP tanks, this has created a significant workload for industry and Competent Authorities, as they must be approved under alternative approval pathways.
- **Multiple-element gas containers (MEGCs):** The current Code does not address MEGCs that are designed and constructed outside the UN MEGC requirements. In most cases the requirements from the UN are likely suitable, but there may be more niche applications where this is not the case.
- **Tube-vehicles:** Tube-vehicles are completely absent from the current Code. However, with the expected rise in demand for compressed hydrogen transport, there is already a significant demand for compliance requirements for these vehicles (and hence the containment systems they use).
- **Marking of tanks:** The Code directs tank manufacturers to install a plate containing all information related to the tank, e.g., manufacture date and capacity. This information is insufficient in some cases and may lead to incorrect tanks being used to transport dangerous goods, increasing safety risks.
- **In-service inspection and testing:** The information provided in the Code relating to maintenance requirements is inadequate and is not available to anyone who has not purchased Australian Standard AS 2809. Referring to this type of requirement in AS2809 “locks away” critical compliance requirements behind a paywall.
- **Ullage and filling of tanks:** The Code includes ullage and filling provisions for tank vehicles and portable tanks. However, the ullage rules are defined without a filling and reference temperature. This increases the risk for a tank to be filled and then heated, resulting in liquid expansion and loss of containment, which increases safety risks.

Table 4 provides a summary of the key gaps, by transport activity, identified through consultation.

Table 4: Key gaps by transport activity

Issue	Gap
General Provisions	The current Code omits a number of issues such as generally applicable exemptions and training and emergency requirements. Definitions are taken from the UN MR. As the Code is a combination of UN MR derived and Australian content, it is very difficult to produce definitions that apply to the Code as a whole without a comprehensive review of the specific terminology and its use in each case. This has resulted in multiple attempts to patch these inconsistencies, often without resolving the underlying problem, and potentially propagating new issues.
Classification	No additional information on hazards associated with a specific dangerous good is provided. The lack of additional information on hazards makes it difficult for duty holders to apply requirements such as segregation, increasing safety risks. For example, ADR and RID assign classification codes which provide information such as whether a substance is a liquid or a solid, organic or inorganic, whether a gas is liquefied, refrigerated, compressed, dissolved, adsorbed, and so on, which is not included in the Code.
Special provisions and exemptions	The current Code replicates the special provisions from the UN MR but does not include additional special provisions for transport by road or rail. This is out of alignment with the expectation of the UN TDG sub committee and the approach in the IMDG Code and the ICAO TIs. This leaves duty holders without the efficiency and safety benefits these special provisions provide.

Issue	Gap
Dangerous Goods List	The DGL does not clearly specify which entries are prohibited from transport due to being considered excessively dangerous. Appendix A – Goods too dangerous to be transported is outdated and in some areas, contradictory to the DGL. If a duty holder uses Appendix A to classify a consignment, they may incorrectly carry a good that is currently too dangerous to be transported, increasing safety risks.
Packing and tank provisions	When initially aligning to the UN MR, many packing and tank provisions were omitted completely. For example, while the Code requires packaging to be compatible with the dangerous goods in them but provides no detail on how to assess compatibility. The lack of guidance regarding packaging compatibility creates variation in the appropriateness of methods used and acceptance criteria. This also creates difficulties for Competent Authorities in assessing compliance.
Construction and testing of packagings, IBCs, large packagings, tanks and bulk containers	The current Code is missing some key land-mode specific dangerous goods containment systems. For example, tanks that do not conform to AS 2809 must be dealt with as exceptions, such as vacuum tanks. In addition, the Code does not distinguish between the tank and the vehicle that is used to transport the tank. This lack of guidance creates an environment for variations in the appropriateness of methods used and acceptance criteria, leading to safety risks and operational inefficiencies.
Construction and approval of vehicles	The current Code does a poor job of providing for requirements for vehicles used for the transport of dangerous goods. There are some requirements provided on vehicle and tank selection, however they are only brief and are inadequate for the task. This may lead to the use of vehicles that are inappropriate for dangerous goods carriage, increasing safety risks and operational inefficiencies.
Safety equipment for road vehicles	Current fire extinguisher requirements do not consider the most common types of non-impact fires and do not provide guidance on when the extinguishers should be used and what the role of the driver is in such an event. The Code also does not mandate an extinguisher to be carried when transporting less than a placard load. Carrying appropriate firefighting equipment can be the difference between a localised fire and full engulfment of the load. With no clear expectations set on the role of the driver, there may be significant variations in how drivers, companies or regulators interpret the role of the driver in an incident. The lack of clarity of the driver's role in an incident also makes it difficult to assess if the equipment specified is appropriate.

2.2.2 Gaps in the Code create a reliance on separate regulatory tools

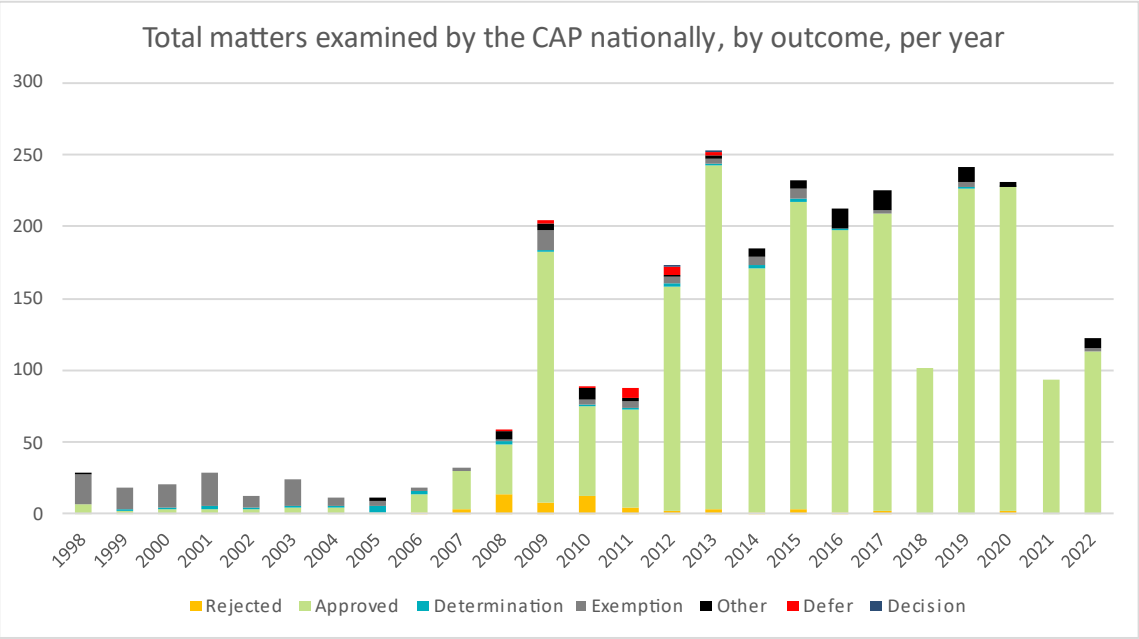
Gaps in the Code have created the need for the development of and reliance on separate regulatory tools such as Competent Authority intervention at the state and national level. Between 1998 and 2022, the CAP presided over 2,715 matters brought forward for their decision through industry submissions, including approvals, determinations, and exemptions (summarised by Figure 8).

While for one-off scenarios CAP interventions are manageable, they reduce the usefulness of the Code. It means that large parts of the process of transporting dangerous goods is a function of practice and convention, rather than written requirements. In turn, this means that significant effort is required to ensure common practice across the country.

A reliance on Competent Authority decisions also impacts transparency, as these decisions sit outside of the Code, are often poorly documented and are hard to find. It is likely that duty holders are not aware of some, or all of, the relevant decisions, meaning that they may not be aware that a problem they have has been solved.

Finally, gaps in the Code have created challenges for regulators and Competent Authorities including for enforcing and assessing compliance with the Code. This has led to unnecessary delays and burden on all parties and inconsistencies in the requirements imposed across the Competent Authorities, with corresponding implications on safety.

Figure 8: Total matters examined by the CAP nationally, by outcome, per year



Example 1. A number of special provisions are dependent on Competent Authority intervention

Some special provisions require Competent Authority intervention before transport occurs. For example, SP 363 currently specifies that where a lithium battery installed in a machine or an engine is damaged or defective, the machine or engine shall be transported as defined by the Competent Authority. This places a time pressure burden on the Competent Authority to develop requirements at the time of need and could result in a vehicle involved in an accident being unable to be moved to a safe location, creating and unnecessary delays for other road users. It also introduces the potential for inconsistencies in the conditions and restrictions being imposed across Competent Authorities. In practice, stakeholders have observed that no Competent Authorities have been approached for authorisation or instructions under SP 363, indicating non-compliance with this provision. It is likely that car owners and towing companies are completely unaware of SP 363, which could, in turn, jeopardise their insurance coverage.

Example 2. Many CAP determinations are not publicly available and are outdated

In addressing issues in the Code highlighted by industry, the CAP can approve determinations to mandate operating at variance to the requirements of the Code. However, many of these determinations are not available to the industry, while others are outdated. For example, to fill the gap relating to vacuum operated waste tanks (see Section 2.2.1 example 3), in May 2014 the CAP issued a determination making requirements mandatory for dangerous goods vacuum tankers. Demonstrating a lack of transparency, determination CA2014/19 sits outside of the Code and of the associated regulations and is not publicly available. Moreover, the determination is based on the ADR 2013 and the Australian Standards, which have both been updated since the determination was issued. However, the determination has not been reviewed or updated since it was issued in 2014, as there is currently no mechanism in place to do so.

2.2.3 Misalignment with international standards and other transport codes impacts the productivity and efficiency of Australian industry

Australian specific land transport provisions in the current Code have been developed in response to singular issues or stakeholder interests. Many of these are now outdated, not aligned with international standards and at variance with the codes for other transport modes.

Case Study: Limitations of the review process from ADG 6 to ADG 7

The current Code is updated every two years, following the biennial maintenance cycle of the UN MR. However, as the UN MR is mode-agnostic, this means that Australian-specific land-transport requirements have not been comprehensively reviewed and updated since 2007.

During the review process from ADG 6 to ADG 7, it was intended that each unique Australian Provision was to be examined for its current relevance and underlying risk basis. However, this proved to be impossible, as in most instances, there was no data or evidence to support the inclusion of the requirements making it impossible to determine whether the requirement had contributed to safer outcomes. The result was a compromised review that saw Australian provisions retained without thorough examination, in the interests of completing the review in a timely manner. The process also delivered a Code that was, at its core, disjointed and contained gaps, contradictions, and inconsistencies.

The limitations in the review process resulted in the undertaking to phase out unique Australian provisions over the life of ADG 7.

As the following examples demonstrate, where Australian specific provisions are outdated, misaligned with international standards and at variance with sea and air codes, this creates unnecessary burden and adds substantial costs to industry.

Table 5: Examples of the Code's misalignment with international standards

Issue	Description	Implication
Load restraint requirements	Load restraint requirements in the Code have remained relatively unchanged since the 5th Edition of the Code (ADG 5) was released in 1992, and potentially even prior to this. With the introduction of mandatory performance standards for load restraint, the mandating of specific load restraints method is no longer appropriate.	The mandating of specific load restraint methods introduces duplication and potential conflict with other legislation. This is evident through the mandating of gates, an outdated requirement that conflicts with load restraint laws and introduces an unacceptable manual handling risk as a set of vehicle gates could weigh as much as 300kg.
Placardable units	The concept of a 'placardable unit' was introduced to the Code during the transition from ADG 6 to ADG 7. The term was used to enable Australia to retain the long-standing concept of bulk versus packaged dangerous goods. The concept is unique to Australia and has not been reviewed for any unintended impacts or consequential amendments since its introduction in 2007.	The requirements in the UN MR are based on containment type, being either packages or tanks. The concept of a 'placardable unit' is based on the capacity of the individual container (500 kg/L). This has led to several amendments, including to rectify contradictory definitions. For example, prior to ADG 7.8, the definition of placardable unit included MEGCs and excluded cargo transport units. Cargo transport units are an international concept that underpin many of the requirements in the Code and include MEGCs. This circular reference made MEGCs both included and excluded in the definition of a placardable unit. The concept also adds significant costs to Australian industry. For example, responding to concerns raised by emergency services, the Code currently requires a vehicle transporting IBCs to display EIPs. The practice is unique to Australia, leading to intermodal difficulties and inefficiencies for industry, which are typically passed down to consumers as higher prices for goods and services. The case study below demonstrates the burden to industry associated with the requirement for EIPs.
Conditional exemptions for marking,	When imported dangerous goods or dangerous goods prepared for export, have been marked, labelled and/or placarded in	The gaps in the conditional exemptions for marking, labelling and placarding can result in:

Issue	Description	Implication
labelling and placarding	accordance with the IMDG Code or IATA Regulations, the marking, labelling and placarding may be different than that required in the Code. To allow for such instances, the Code provides conditional exemptions for the journey immediately before export or after import. However, these exemptions have several gaps.	▪ Transport providers and drivers having to choose between non-compliance or performing unsafe acts to be able to comply. ▪ Significant additional costs to industry in complying with requirements.

Case Study: EIPs on IBCs[27]

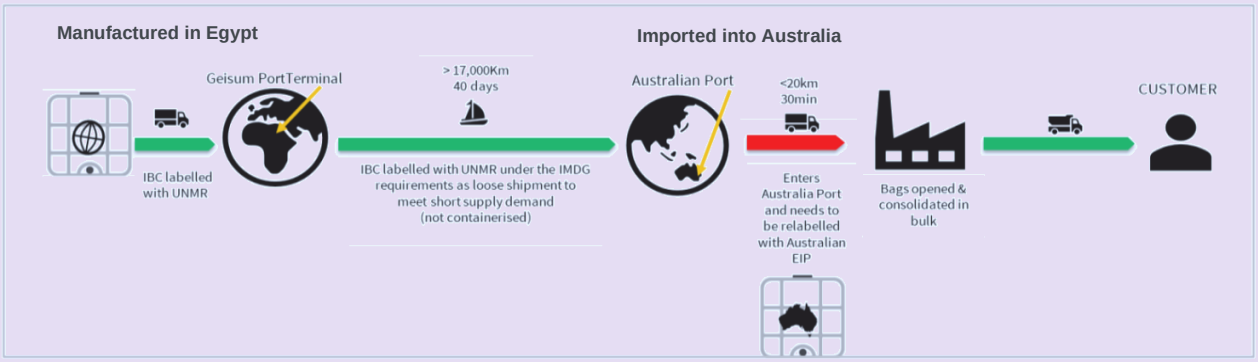
Below: Australian EIP.

Below: UN MR Label.

In Australia, it is currently required under the Code that IBCs are labelled with EIPs. These provisions are uniquely Australian and deviate from international practices, both with our major trading partners, such as the EU, USA, China and New Zealand, and with other international modal codes, such as the IMDG Code and the IATA Regulations.

Due to this deviation from international practice, most Australian businesses are forced to re-label imported IBCs and segregate Australian products from international products in warehouses. This is demonstrated by the case study below, which was based on the actual experience of a supplier where the business was requested by the regulator to relabel a number of individual IBCs to cover a transport journey of less than 0.05% due to lack of international harmonisation.

Chemistry Australia has been calling for better alignment of Australian labelling requirements with international practices to improve productivity, competitiveness and eliminate unnecessary red tape. In its 2018 submission, Chemistry Australia estimated that it costs the chemical industry an estimated $19,000 per annum, per business, or $96 million in total ($22,000 per annum, per business, or $180 million per annum in total when escalated to 2024 figures)[28] due to the additional labelling requirements. Chemistry Australia believes that the burden introduced by these requirements is overly cautious, with no net benefit to safety outcomes.



2.3 Problem 2 –The disjointed, contradictory and difficult to navigate land-mode requirements of the Code

When initially aligning to the UN MR during the transition from ADG 6 to ADG 7, many provisions were either omitted completely, or dispersed through other areas of the Code. In the case of some Australian-specific land-mode requirements, no evidence base, or justification can be found to support their original introduction.

This has led to a repository of often disjointed, contradictory, and difficult to navigate road and rail requirements, as demonstrated by the examples in Table 6.

The lack of a cohesive and consistent Code contributes to the confusion of businesses, employees and regulators in attempting to comply with and enforce the requirements of the Code. In turn this leads to:

- Unnecessary delays in approval/determination processes and associated delay costs for industry.
- Greater burden, time pressures and associated costs for Competent Authorities.
- Inconsistencies in the application of the Code across different jurisdictions, with corresponding impacts on non-compliance and industry safety.

Table 6 Structural deficiencies in the Code

Issue	Example
Classification	Correct classification of dangerous goods is the starting point for all requirements relating to their safe packaging and transport. Currently, the steps in the classification process in the current Code contains many issues, including: • The information in the classification process is poorly located, with incorrect or misleading headings, making it difficult to find and easy to overlook. • Provisions relating to what a given Class includes are often broken up and interspersed with unrelated information. • Information within each chapter follows no consistent structure or numbering. While the Code's classification content aligns with the UN MR and other mode-specific codes, the way additional information is placed and structured is deficient, e.g., Class 2 Gases (Page 16 of WP 1). This can lead to incorrect application of the Code by duty holders, increasing the risk of goods considered too dangerous to transport entering the transport network.
Dangerous Goods List	The DGL reflects the outcome of the classification requirements discussed above. The DGL provides cross-references to specific requirements to be applied for the transportation of each listed substance or article, and to the chapters or sections where these specific requirements can be found. However, there are currently several areas in the DGL that lack clarity, including: • Different requirements may apply to different substances of the one UN number. This is not easily identifiable in the current Code. For example, substances of UN 1790 Hydrofluoric Acid with more than 85% hydrogen fluoride require more stringent packaging than Hydrofluoric Acid with more than 60% but not more than 85% hydrogen fluoride. However, the DGL provides a single entry for Hydrofluoric Acid, with more than 60% hydrogen fluoride, making it difficult for duty holders to identify and apply the different requirements • Some entries on the DGL are either not regulated for transport by land or are prohibited from transport. These entries are not clearly identifiable in the current Code. For example, UN 2455 is listed in the DGL as if it may be transported, even though it is also listed in Appendix A of the Code as "too dangerous to transport". Appendix A includes a list of substances that are considered too dangerous to transport, the majority of which are not listed by UN number or name in the DGL. This list is outdated and, in some areas, contradictory to the DGL. This has the potential to create confusion for duty holders in what their requirements are, consequently, lowering compliance and increasing safety risks.
Packing and tank provisions	In Part 6 of the Code, there is a statement that the filling of cylinders must be completed in accordance with AS 2030 – Gas cylinders. As Part 6 relates to design and construction, an individual filling a cylinder is likely to look to P200 of the Code which relates to the packing requirements of cylinders, not Part 6. This placement of requirements mean that they are difficult to find and easy to overlook, impacting compliance and increasing safety risks.
Consignment procedures	An overpack is an enclosure used to contain a number of packages to form a unit load for handling and stowage during transport. In the Code, the current requirements concerning

Issue	Example
	the marking and labelling of overpacks, and segregation devices are scattered throughout the Code and often contradict each other. For example: • Paragraph 5.1.2.1.1 of the current Code states that an overpack must be clearly marked with the word 'OVERPACK'. • Paragraph 5.1.2.1.2 of the Code states that the 'OVERPACK' mark is not required on an overpack intended only for transport by road or rail within Australia. These requirements create confusion for duty holders, who, due to the conflicting nature of the requirements, risk operating in non-compliance, which has an infringement penalty of $400 and a maximum court-imposed penalty of $2,000.
Consignment procedures	Part 5 of the Code – Consignment procedures include labelling, marking and placarding requirements. However, the requirements concerning the marking and labelling of segregation devices are specified in Part 4 of the Code – Packing, tank, container, vehicle and equipment provisions. The placement of these requirements makes it difficult for duty holders to find and will cause unintended non-compliance, increasing safety risks.

2.4 Opportunity 1 – There is an opportunity for the Code to incorporate the Australian Explosives Code (AEC)

Currently the Code does not cover Class 1 explosives[29] as this is contained in the AEC, which has not been updated since 2009 and has no responsible agency. Secretariat support has been rotated around the Competent Authorities with no central agency ownership. As a result, this has created:

- Increased risk in the handling of Class 1 explosives across Australia.
- Increased complexity and confusion in complying with and enforcing the AEC.
- Growing misalignment between the AEC Code and domestic dangerous goods regulation.
- A lack of consistency in AEC application across the jurisdictions.

There is strong feedback from industry for the Code to be expanded to cover Class 1 explosives and for the AEC to become obsolete.[30] Incorporating Class 1 explosives into the Code would:

- Enable maintenance of the Class 1 explosive regulatory requirements through the biennial maintenance review process.
- Facilitate national consistency as jurisdictions align Class 1 explosives with other dangerous goods under their respective Model Subordinate Laws.
- Streamline compliance requirements and reduce the burden on industry and regulators.

Example 1. Limited quantity provisions provide limited guidance to duty holders

Under the UN MR, IMDG Code, ICAO TIs and ADG Code, certain goods may be transported under limited quantity (LQ) provisions. These requirements refer to small containers that have been packed in a box or a shrink-wrapped tray and relate to the maximum size of inner packagings, packaging, marking, labelling, information, and documentation.

The rationale for LQ provisions is that certain lower risk dangerous goods (in small containers and packed in adequate packaging) pose a lower risk in transport than the same goods packed in larger volumes. The provisions are designed to ensure that any potential release in transport would be minimum and that LQ goods can be transported with less stringent requirements than those that apply to fully regulated goods.[31]

Feedback from duty holders is that they are experiencing difficulties understanding the AEC requirements for the land transport of explosives, particularly with respect to LQ provisions. Currently, jurisdiction issues are arising post-discharge of LQ explosives from vessels, as the IMDG Code applies only at the port of loading, and the AEC was never updated to include LQ provisions for Class 1, meaning that LQ provisions cannot be used.

Example 2. Application of 1.4S diamond stickers requires costly additional resources

Currently, AEC requirements for labelling of explosives permitted by the UN MR to be transported under LQ concessions conflict with those in the IMDG Code. For example, the AEC necessitates 1.4S label (diamond), which are not required under the IMDG Code, and the AEC requires the package to be marked with a UN Number and Proper Shipping Name (PSN) which is also not required under the IMDG.

In complying with AEC labelling requirements, duty holders have confirmed they incur additional costs in time, labour, and consumables. For example, one duty holder noted that to re-label pallets of goods with 1.4S diamond stickers requires a minimum of two resources (labour) to be taken off other tasks to meet AEC requirements.

Industry have approached the Australian Forum for Explosives Regulators (AFER) for endorsement to operate with the requirements of the Code at variance to the AEC. However, this has been hindered by administrative barriers, namely:

- While the AEC is given legal effect, via individual State and Territory based regulations, AFER has no legal standing to make nationally applicable decisions. The AFER is given ‘authority’ through the AEC.
- There is no secretariat support to the AFER or government ownership of the AEC. Safe Work Australia has ceased support of the AEC in recent years and secretariat support is being rotated around Competent Authorities with no federal support.

3 Why is Government action needed?

Key messages

- Overall, the primary outcome the NTC aims to achieve through the Code is to:
  - Reduce as far as practicable the risk of personal injury, death, property damage and environmental harm arising from the transport of dangerous goods by land.
  - Whilst minimising intermodal and international barriers to trade, supporting industry efficiency and Australia's participation in the global economy.
- The lack of a systematic approach for developing and maintaining the road and rail specific requirements of the Code, coupled with a lack of cohesiveness and consistency in the existing requirements, has led to continuous cycle of ad-hoc and random amendments, without consideration of the consequential inconsistencies or contradictions introduced by those changes.
- The current process is time consuming and expensive. With each amendment, substantial government costs are involved in legal advice, training and guidance material, legislation drafting, and the development of regulatory impact analysis. On the industry side, administration and costs are likewise incurred to understand and interpret new requirements, train employees, and put in place processes and systems to ensure compliance with the changes.
- The continuous cycle of amendments also places pressure on State and Territory governments and their parliaments, contributing to inconsistent timing of the implementation of legislative amendments by jurisdictions. Where jurisdictions have not yet been able to implement agreed amendments, this creates challenges for both regulators – e.g., increasing the difficulty in assessing compliance– and duty holders – e.g., adding to the operational complexity of entities based in multiple jurisdictions.
- Most importantly, however, the current regulatory process has failed to keep land mode provisions of the Code current and aligned with international standards as well as other transport codes. Under the current process, land mode provisions have not been comprehensively reviewed or updated since 2007, leaving significant gaps in the road and rail requirements of the Code
- The Australian government has made the decision that this industry requires regulation as it affects community safety and in order to comply with international standards. Without government intervention, industry cannot fully control the risks associated with its activities. The transportation of dangerous goods is subject to market failures such as imperfect information and economic externalities. The Government plays a critical role in addressing these market failures, ensuring the safety of people, property, and the environment across Australia.

3.1 Objectives and key performance indicators of Government intervention

Overall, the primary outcome the NTC aims to achieve through the Code is to:

- Reduce as far as practicable the risk of personal injury, death, property damage and environmental harm arising from the transport of dangerous goods by land.
- Whilst minimising intermodal and international barriers to trade, supporting industry efficiency and Australia's participation in the global economy.

To enable the outcome, the following supporting objectives have also been identified:

- A transparent and easy to navigate Code that supports compliance with its requirements.

- An easy to maintain and contemporary Code, ensuring its sustainability going forward.
- Consistency in the implementation of land-mode requirements under the Code (to the extent possible).

Table 7 below maps the desired objectives, to expected benefits of meeting these objectives and how these benefits can be measured going forward.

Table 7: Objectives, Benefits and Benefit Measures of government intervention.

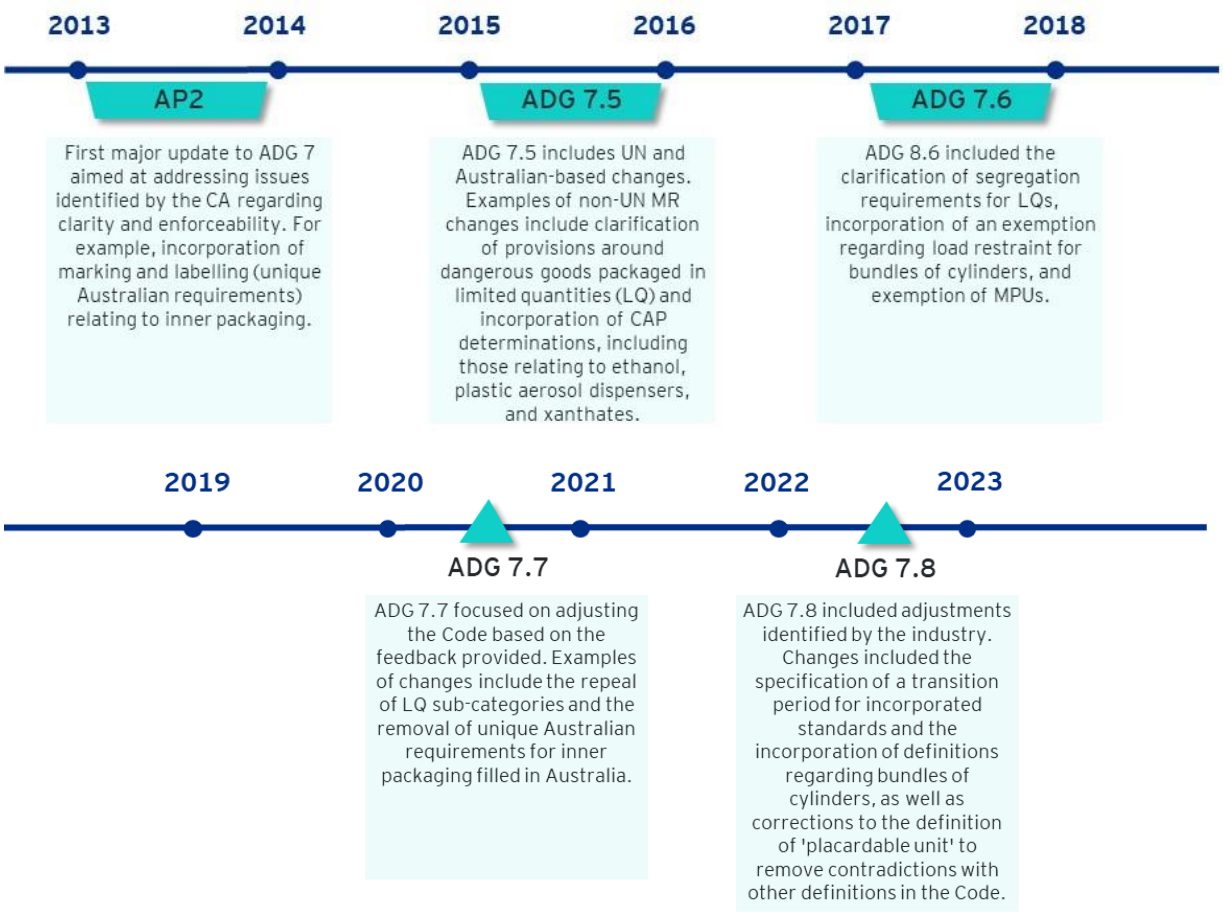
Objective	Benefits	Benefit Measures
The **safe transportation** of dangerous goods across Australia.	• Avoided dangerous goods incidents due to improved compliance with the draft Code	• Avoided deaths and injuries to community • Avoided health care and first responder costs • Avoided property and environmental costs
Minimise intermodal and international barriers to trade supporting industry efficiency and Australia's participation in the global economy.	• Improved trade competitiveness and economic growth due to improved alignment with international standards	• Increased domestic output • Increased employment
Minimise intermodal and international barriers to trade supporting industry efficiency and Australia's participation in the global economy.	• A reduction in intermodal difficulties and inefficiencies due to improved alignment with other transport modes	• Reduced intermodal transport costs
A **transparent and easy to navigate Code** that supports compliance with its requirements.	• Reduced complexity and difficulty in understanding and complying with the Code, as the content and/or structure of the Code are improved	• Reduced time and costs spent by industry in understanding and interpreting with the land mode requirements of the Code • Reduced time spent by Competent Authorities providing advice or assistance in identifying requirements • Reduction in non-compliance
Consistency in the interpretation and enforcement of land-mode requirements under the Code	• More efficient cross-border operations, to the extent that proposed changes support national consistency in the application of the Code	• Reduced duplication of compliance costs for national transport operators
An **easy to maintain and contemporary Code**, ensuring its sustainability going forward	• Less resource intensive and more timely maintenance of the land mode requirements of the Code, by leveraging the ADR/RID process	• Reduced costs to government of maintaining the Code
An **easy to maintain and contemporary Code**, ensuring its sustainability going forward	• Reduced complexity and difficulty in administering compliance with the Code, as the content and/or structure of the Code are improved	• Reduced costs to Competent Authorities associated with submissions from industry

3.2 Problem 3: The current process is unsustainable

The lack of a systematic approach for developing and maintaining the road and rail specific requirements (explored by Problem 1), coupled with a lack of cohesiveness and consistency in the existing requirements (explored by Problem 2), has led to a continuous cycle of ad-hoc and random amendments, without consideration of the consequential inconsistencies or contradictions introduced by those changes.

Figure 9 provides just a sample of policy amendments made to the land mode provisions of the Code between 2013 and 2023.

Figure 9: Timeline of amendments to land mode provisions in the Code.



Many of these policy amendments originated as submissions from industry to a Competent Authority and resulted in either an exemption (e.g. allowance of plastic aerosol dispensers containing Division 2.2 to be used in Australia if specific requirements are met) or a determination (e.g. requirement of xanthates to comply with the packaging group II requirements) made by the Competent Authority for their jurisdiction or by the CAP at a national level. This reflects the two-way process currently in place for amending requirements of the Code. These changes flow top-down from the Code following a biennial review of alignment with the UN MR, or flow bottom-up from CAP decisions and changes to State and Territory regulation into the Code.

Importantly, a number of policy amendments to the Code have triggered the need for subsequential amendments to land transport requirements, to address inconsistencies and/or contradictions introduced by the original amendment. For example, Incorporation of Determination VCAP-01-DET Competent Authority 2010-12 re ‘Bundles of Cylinders” and this required consequential amendments to several other definitions, including ‘capacity’, and ‘placardable unit’ to clarify requirements for duty holders. Without a cohesive starting document and a systematic process for updating Australian-specific land transport requirements, any unintended consequences of amendments often do not become apparent until the industry brings them to the attention of the Competent Authority. This contributes to a continuous cycle of ad-hoc amendments, increasing the costs of regulation to government and industry.

This current process is time consuming and expensive. For example, the coal determination discussed below took over one year to be resolved and necessitated significant stakeholder engagement, with representatives from all jurisdictions required to achieve consensus on the issue. Significantly, this determination would not have been needed if the Code aligned with the ADR/RID. Moreover, with each amendment substantial government costs are involved in legal advice, training and guidance material, legislation drafting, and the development of regulatory impact analysis. On the industry side, administration and costs are likewise incurred to understand and interpret new requirements, train employees, and put in place processes and systems to ensure compliance with the changes.

Case Study: Coal Determination

In October 2023, SafeWork New South Wales (NSW) declared that black coal, including its various types, is not classified as dangerous goods for transport by road or rail in bulk containers. This determination, which is applicable to all relevant transport activities in NSW, included other specific conditions, including temperature checks for coal not directly conveyed from extraction. Through this process there was limited to no visibility of the determination, and it was not Gazetted or any public record of it. The determination was given national effect at the November 2023 CAP meeting and is based on Special Provision 665 of RID. However, the only record of it being given national effect was in the minutes of the November 2023 CAP meeting (noting that CAP meeting minutes are confidential). Implementing this determination involved significant costs and time for both authorities and industry, with discussions spanning from May 2022 to October 2023.

The continuous cycle of amendments also places pressure on State and Territory governments and their parliaments, who often have competing requirements, contributing to inconsistent timing of the implementation of legislative amendments by jurisdictions. For example, the NTC's 2019 National Transport Reform Implementation Monitoring Report, shows that some jurisdictions had not yet implemented the 2016 or 2018 transport of dangerous goods amendment packages.[32] Where jurisdictions have not yet been able to implement agreed amendments, this creates challenges for both regulators - increasing the complexity in assessing compliance and undertaking enforcement activities – and duty holders – increasing the difficulty for entities that operate in multiple jurisdictions to take advantage of reforms and adding to the complexity of their operations.

Most importantly, however, the current regulatory process has failed to keep land mode provisions of the Code up to date and aligned with international standards as well as other transport codes. Under the current process, land mode provisions have not been comprehensively reviewed or updated since 2007, leaving significant gaps in the road and rail requirements of the Code. The continuing implications of this on our people, our environment and our international competitiveness is potentially significant.

3.3 Without government intervention, industry cannot fully control risks associated with the transportation of dangerous goods

Suppliers, manufacturers, and the transport industry have incentives to ensure that transportation of dangerous goods is conducted safely. Incentives include ensuring their own/their employees' safety, protecting against damage to their property and assets; and maintaining their reputation which could impact profits. However, without government intervention, these incentives are unlikely to be sufficient to meet community expectations and fully control associated risks in transporting dangerous goods for Australians.

The transportation of dangerous goods is subject to market failures such as imperfect information and economic externalities. Examples in the transport of dangerous goods include:

- Transport operators, such as drivers, may lack the necessary information to make informed decisions about engaging in certain activities or the best practices for transporting dangerous goods.
- Members of the community may not have sufficient information to determine the best way to act to protect themselves in the event that they are involved in or witness to an incident.
- Suppliers and transport businesses may under-invest in safety measures if they do not experience the full costs and benefits of their actions.

- First responders might not possess sufficient details about the hazardous materials transported, hindering their ability to respond safely and effectively.

The Government plays a critical role in addressing market failures as it corrects imbalances that occur naturally in unregulated markets. For example, by making dangerous goods licenses mandatory, ensuring that all drivers have had the minimum amount of training, or by making sure the hazards associated with a particular dangerous goods are visible to all and clearly understood through appropriate labelling etc.

Due to the hazardous properties of dangerous goods, including explosiveness, flammability, toxicity, radioactivity, there is a high degree of risk to community safety associated with their transportation. The Australian government has committed to mitigate this risk by regulating the dangerous goods transportation task to help Australia's transport and logistics industry to operate safety when carrying dangerous goods.

Further, as Australia participates in several international trade groups, e.g. the World Trade Organization (WTO), Asia-Pacific Economic Cooperation (APEC) and the Organisation for Economic Cooperation and Development (OECD), the Australian government has committed to comply with international standards, which involves the regulation of dangerous goods.

4 What options were considered

Key messages

The identification of the selected option follows a comprehensive process involving extensive consultation with industry, regulators and the public since 2019. Four potential options were identified for consideration in addressing problems with the Code, discussed in Chapter 2.

- **Option 1** is the 'do nothing' and represents no change to the current Code nor the current process for developing and maintaining the Code. Continuing with the status quo is not an option. Numerous NTC reviews have identified gaps and errors in the land provisions of the Code which must, at a minimum, be addressed to ensure the safe and smooth land transportation of dangerous goods across Australia.
- While **Option 2** would address gaps in the Code and improve alignment with ADR/RID, the option is not sustainable. As per the base case, Option 2 would maintain the current process for developing and maintaining the Code. This is the approach that has been adopted for previous reviews and has failed to keep the land mode provisions of the Code contemporary and up to date. Without a systematic approach to updating the land provisions of the Code, these requirements will become increasingly obsolete and misaligned over time.
- In line with Principle 2 of the comprehensive review, **Option 3** would incorporate ADR/ RID concepts into the Code by becoming a contracting party to the modal agreements. By leveraging the ADR/RID process for maintaining the land provisions of the Code, Option 3 would support simplification of the maintenance task as well as a contemporary Code going forward. However, due to the ADR/RID's origins in Europe, significant derogations would be required for some practices. Duty holders would need to read both the ADR/RID and Australian derogations to understand their responsibilities, making this solution overly complex and impractical.
- **Option 4** was identified as the only viable option through extensive consultation with stakeholders. The option builds on the benefits from Option 3, with the added simplicity of supporting a single point of reference for the dangerous goods transport industry. This would combine both internationally and locally derived land provisions. By supporting a transparent and easy to navigate Code, Option 4 would reduce the complexity currently experienced by industry in understanding and complying with its requirements. By reducing reliance on measures outside of the Code such as Competent Authority determinations, Option 4 would also promote consistency in the application of its requirements across jurisdictions. Together, these drivers would support a more effective and efficient Code into the future.

4.1 Introduction

4.1.1. Overview of Project Options

Four potential options were identified for consideration in addressing problems with the Code, discussed in Chapter 2. Each option summarised below, presents a different approach to addressing the problems – from addressing key gaps and structural issues to overhauling the process for developing and maintaining the Code in the long term. Options include:

- **Option 1** is the 'do nothing' and represents no change to the existing Code. Under Option 1, the structure of the Code would remain the same and no changes to the content of the Code would be made to address gaps, errors, or outdated requirements. Option 1 would also retain the current process for developing and updating the Code based on the mode-agnostic UN MR, which has resulted in a number of gaps and errors in the Code's Road and rail requirements.
- **Option 2** would retain the current process for developing and maintaining the Code but would make amendments to the current Code to address gaps, errors and outdated requirements identified by the NTC's comprehensive review of the Code. This is the approach that has been adopted for previous reviews, and which has resulted in less-than-optimal outcomes. Without a systematic process for updating the land provisions of the Code, these will become increasingly obsolete over time.
- **Option 3** would require the Australian government to become a contracting party to the ADR agreement and its sister document the RID, with significant derogations for Australian-specific rail and road requirements, such as placarding and segregation methodologies. Duty holders would need to read both the ADR/RID and Australian derogations to understand their responsibilities under the Code. Under Option 3, Australia would be able to leverage the ADR/RID framework and process for maintaining road and rail requirements of the Code on a biennial basis. There will still be a need for a review process for Australian-specific requirements, however, this will be significantly reduced compared to the review requirements under Options 1 and 2.
- In alignment with the industry preference for one consolidated document, **Option 4** is comprised of a modified version of the Code that integrates the ADR and RID into one transparent, easy to navigate and understand re-structured document. As per Option 3, this option would leverage the ADR/RID maintenance process. This option would also include a process to review Australian-specific requirements but through a less laborious process then under Option 3. Contrary to Option 3, Australia would not need to become a contracting party to the ADR/RID and would continue to have direct access to and be able to provide inputs into WP15, to influence the future direction of ADR/RID, in line with Australian requirements.

Irrespective of the option, the NTC is committed to supporting industry, regulators and Competent Authorities to understand and implement proposed changes. In light of this, Options 2, 3 and 4 propose a number of common non-regulatory solutions including:

- A strengthened governance and agreement framework to support consistent implementation of the Code across the jurisdictions, as far as practicable.
- Clearer and more transparent training requirements in the Code, to support compliance with the refreshed Code and any requirements.
- Additional guidance material to support implementation and enforcement of the draft Code. The extent of guidance and training required would be expected to be different across the options depending on the complexity of the solution and the extent of proposed changes.
- A register of regulatory changes across jurisdictions to support transparency of the Code's requirements.

Key differences across the options are visually represented by Table 8: Options comparison below.

Table 8: Options comparison

	Option 1: Base Case – Retain Status Quo	Option 2: Update Code for gaps and errors identified through the review	Option 3: Become a contracting party to ADR and RID, with Australian derogations	Option 4: Modified version of the Code with integrated ADR and RID principles
Content of the Code				
Retain existing Code as it is	✓			
Address gaps and errors identified by the comprehensive review		✓	✓	✓
Improve alignment of the Code with the ADR/RID		✓	✓	✓
Improve alignment of the Code with the IMDG Code		✓	✓	✓
Requirements are appropriate for Australian land transport methodologies		✓	✓	✓
Structure of the Code				
Retain existing structure of the Code	✓	✓		Partial alignment
Adopt the land-specific requirements of the Transportation of Dangerous Goods Regulations from Canada				
ADR + separate set of derogations for rail and Australian land-specific requirements			✓	
Use the ADR as the starting document and make Australian land-specific updates				✓
Implementing/enforcing the Code				
Regulated by State and Territory Competent Authorities	✓	✓	✓	✓
Adopt the Code by reference	✓	✓	✓	✓
Maintaining the Code				
Biennial review of the non-mode specific provisions in the Code following UN MR review cycle	✓	✓	✓	✓
Retain current ad-hoc process of updating Australian land-specific road and rail requirements of the Code	✓	✓	*	*
Leverage ADR/RID framework/process for maintaining road and rail requirements of the Code			✓	✓
Non-regulatory solutions				
Strengthened Governance & Agreement Framework		✓	✓	✓
Specified training included in the Code		✓	✓	✓
Additional guidance material including education communication		✓	✓	✓
Maintaining register of regulatory changes made across the jurisdictions[33]		✓	✓	✓

** Although Options 3 and 4 largely adhere to the ADR/RID framework and processes for maintaining road and rail requirements of the Code, there will still be a need for a review process for Australian-specific requirements under these options. This will likely be to a lesser extent under Option 4 than under Option 3, and significantly reduced compared to the review requirements under Options 1 and 2.*

4.1.2. Out of scope

The following options, identified through the initial selection process, were not taken forward for further consideration.

- **Self-regulation by industry**

  Suppliers, manufacturers and the transport industry have incentives to ensure the transportation of dangerous goods is conducted safely, such as ensuring their own/their employees' safety and reputational damage. However, as noted in Chapter 3, without Government intervention, these incentives are unlikely to be sufficient to meet community expectations and fully control the associated risks in transporting dangerous goods for Australians. Further this option does not comply with the Australian Government's commitment to the international framework for regulating the transport of dangerous goods and does not address the instruction of Ministers to adopt ADR/RID into the Code.

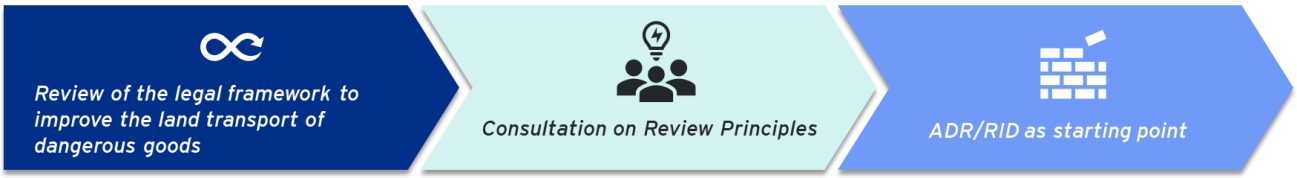
- **Look to the land transport codes of other key trading partner**

  This option was identified through stakeholder consultation. Most countries' regulatory frameworks including in the UK, US and China, identified in the NTC desktop review, have either adopted the ADR/RID or have based land-mode requirements on these instruments.[34] This option was not taken forward as it would be more practical for Australia to align with the ADR/RID directly, rather than aligning to a country that is based on these instruments. Differences between Australia's land transport environment and the model country would require either amendments to the adoptive code or the development of an additional set of derogations for any requirements that differ from the model code.

4.1.3. Process for identifying the selected option

The selected option has been identified and developed through a comprehensive process involving ongoing consultation with industry representatives, Competent Authorities and the public since 2019 (see Figure 10 Process for identifying and developing the selected option).

Figure 10 Process for identifying and developing the selected option



In 2020, the NTC released an issues paper that examined the legal framework for the land transport of dangerous goods. Many of the submissions received highlighted that problems were more with the Code itself rather than the legal framework. Stakeholders identified that the land mode provisions of the Code had not been comprehensively reviewed since 2007 and that there were significant gaps in these provisions.

In November 2020, the ITMM agreed to Recommendation 4 of the review to: "*Conduct a full review of the Code to update outdated chapters, identify and correct translation errors, incorporate relevant ADR concepts and incorporate requirements for Class 1 and Division 6.2*".

With this direction set by Ministers, the option to "do nothing" (Option 1) is no longer a viable option. Nor is amending the Code for identified gaps but maintaining the current process of developing and maintaining the Code (Options 2). This is the approach that has been adopted for previous reviews and has failed to keep the land mode provisions of the Code contemporary and up to date.

To help guide the review and set it up for success, a set of review principles were drafted. The draft principles were consulted with stakeholders via an online survey, and three separate webinars, targeted at: Competent Authorities, industry bodies and all stakeholders. Importantly, Principle 2 agreed that: *"The*

starting point for requirements specific to land transport will be the requirements in ADR and RID". A copy of the survey questions can be found in Attachment B and a summary of the comments received through the consultation process, along with the NTC's responses can be found at Attachment C.

Two options were identified by the NTC for achieving Principle 2. These included, becoming a contracting party to the ADR and RID with Australian derogations (Option 3) or a modified version of the Code which integrates ADR and RID principles (Option 4). Based on the complexity of the option and supporting regulatory environment, Option 3 was not considered viable.

Ongoing consultation over a prolonged period has demonstrated Option 4 to be the best option. No other viable option has been identified through this process. In light of this, the focus of the C-RIS will be on eliciting feedback on the draft Code in line with Option 4 (see Chapter 5 and Attachment D) and obtaining further evidence on the costs and benefits of the proposed changes of the draft Code (see Chapter 6). An Impact Analysis will only be undertaken for the outcomes of Option 4.

4.2 Option 1 – Status Quo (Base Case)

4.2.1 Advantages

- No additional costs associated with changes and updates to the Code.

4.2.2 Disadvantages

- Industry, government, and community will continue to face additional costs and safety risks associated with continued gaps and errors in the current Code.
- International barriers to trade associated with continued misalignment with international standards.
- Loss of industry productivity and efficiency associated with continued misalignment of Australian specific provisions with the IMDG Code and IATA.
- Inconsistent interpretation and compliance with requirements associated with continued poorly structured and difficult to follow requirements.
- Continued reliance on instruments outside the Code, placing greater burden on all parties (including Competent Authorities) and leading to unnecessary delays.

4.3 Option 2 – Update Code for gaps and errors identified through the review

4.3.1 Advantages

- This option will improve the content of the Code by addressing gaps, errors and outdated requirements as identified by NTC's comprehensive review.
- By not fundamentally altering the structure, the Code will remain familiar to users, and extensive retraining may be avoided.

4.3.2 Disadvantages

- Continued lack of a systematic process for keeping the Australian-specific land mode provisions contemporary and up to date.
  - This option would essentially follow the same process as previous comprehensive reviews, the outcomes from which have been far from optimal. In all instances, the resulting Codes have had significant gaps and contained contradicting or incomplete requirements.

  - Without a systematic approach to maintaining the land provisions of the Code, under Option 2 the Code will become increasingly obsolete and misaligned over time, impacting on the productivity and competitiveness of industry.

- The perpetuation of a continuous revision cycle of ad-hoc changes and associated costs and resources necessary to keep up to date with amendments to the Code. Prior comprehensive reviews performed in this manner have imposed significant regulatory burden on some businesses.[35]
- Inconsistent interpretation and compliance with requirements associated with continued poorly structured and difficult to follow requirements. This makes it difficult for all jurisdictions to take full advantage of the benefits of reform.

4.4 Option 3 – Become a contracting party to ADR and RID, with Australian derogations

4.4.1 Advantages

- Improve the content of the Code, addressing gaps and errors, to the extent the content is fit for purpose in an Australian setting.
- In line with Principle 2 of the review, greater alignment with the ADR/RID and other transport codes (e.g., the IMDG Code), supporting the reduction of international and international barriers to trade. Some stakeholders expressed a general preference for alignment, while others highlighted specific areas of the ADR that they wish to adopt (e.g. classification codes currently omitted from the Code).
  - Quote from a Competent Authority: '*Alignment with this process (ADR/RID) ensures Australia takes full advantage of the technological and regulatory changes in the transport of dangerous goods; and ensures Australian industries are not disadvantaged by obsolete and redundant regulatory requirements and processes.*'
  - Quote from a Competent Authority: '*Alignment to codes (ADR/RID) that are designed with a focus on prevention, education, training, and higher risks will lead to less complex laws, better compliance, and lower costs to industry.*'
- Alignment to existing internationally accepted requirements for land transport of dangerous goods – with Australia directly benefiting from the land transport experience of ADR-contracting parties – while remaining free to retain Australian practices where change is not warranted, and it's not fit for purpose.
- Simplification of the maintenance tasks of the Code since ADR/RID changes would flow through to the Code and lapses between revisions would become much shorter.

4.4.2 Disadvantages

- The ADR/RID were developed mainly for road and rail transport in European countries. An additional technical code would be required to address rail and road specific requirements losing the benefits of a single system for road and rail.
- Currently Australia's surrounding regulatory environment of the Code differs from the ADR and RID. For example, the Code utilises the Australian Standards whereas the ADR and RID utilises the International Organization for Standardization (ISO) standards. As a result, Option 3 would require a significant number of derogations to make the Code fit for purpose in an Australian setting, impacting the ease of implementation and alignment over time.
- Risk of omitting provisions in the revision cycle and issues associated with referencing international standards which do not apply in Australia.

- Complex nature of this solution where two documents need to be cross-referenced, kept up to date and used in tandem, one aligned with UN regulations and one dealing with local exceptions. This may result in potential confusion and reduced compliance.
- Significant government buy-in would be required for Australia to become a contracting party to the ADR/RID.

4.5 Option 4 – Modified version of Code with integrated ADR and RID principles

4.5.1 Advantages

As per Option 3 with the addition of:

- A modified version of the Code with ADR/RID principles and the retention of Australian specific content, as needed. This would enable local practice being kept up to date with international best practice.
- A single point of reference for transporters combining both local and international requirements which will support a transparent, easy to navigate and interpret Code. In turn, this would improve duty holders' compliance with the road and rail requirements of the draft Code compared to Option 3.

4.5.2 Disadvantages

- This option would result in an incomplete harmonisation with other codes, since the draft Code will still reference Australian Standards and retain Australianisms where appropriate.
- There will need to be an ongoing maintenance program to ensure Australian-specific provisions, not modified from the ADR/RID, are regularly reviewed and kept up to date. This should be a more manageable process compared to the 'status quo' review system.

4.6 Conclusion

Continuing with the status quo (**Option 1**) is not an option. The NTC's comprehensive review identified gaps and errors in the land provisions of the Code which must, at a minimum, be addressed to ensure the safe and smooth transportation of dangerous goods across Australia.

While **Option 2** would address gaps and errors in the current Code and improve alignment with the ADR/RID, the option is not sustainable in the longer term. As per the status quo, Option 2 would maintain the current process for developing and maintaining the Code, leading to a continuous cycle of ad-hoc amendments, increasing the cost of regulation, without addressing underlying inconsistencies. Without a systematic approach to maintaining the land provisions of the Code, under Option 2 the Code will become increasingly obsolete and misaligned over time. Moreover, the lack of cohesiveness and consistency of requirements across the Code, will continue to frustrate compliance and enforcement efforts, placing unnecessary burden on all parties and contribute to inconsistent practices across jurisdictions. Together, these factors will continue to inhibit the safe and smooth land transport of dangerous goods.

Unlike Option 2, **Option 3** addresses the objectives of the Code in both the short term and long term, through addressing gaps in the Code and becoming a contracting party to the ADR/RID. Direct alignment with the ADR/RID will support the productivity and international competitiveness of Australian industry, reducing frictions and inefficiencies across different transport modes. Most of Australia's trade partners have already become contracting parties to or based their own standards on the ADR and RID.

By leveraging the ADR/RID framework and process for maintaining road and rail requirements of the Code, Option 3 would support simplification of the maintenance task as well as a contemporary Code going

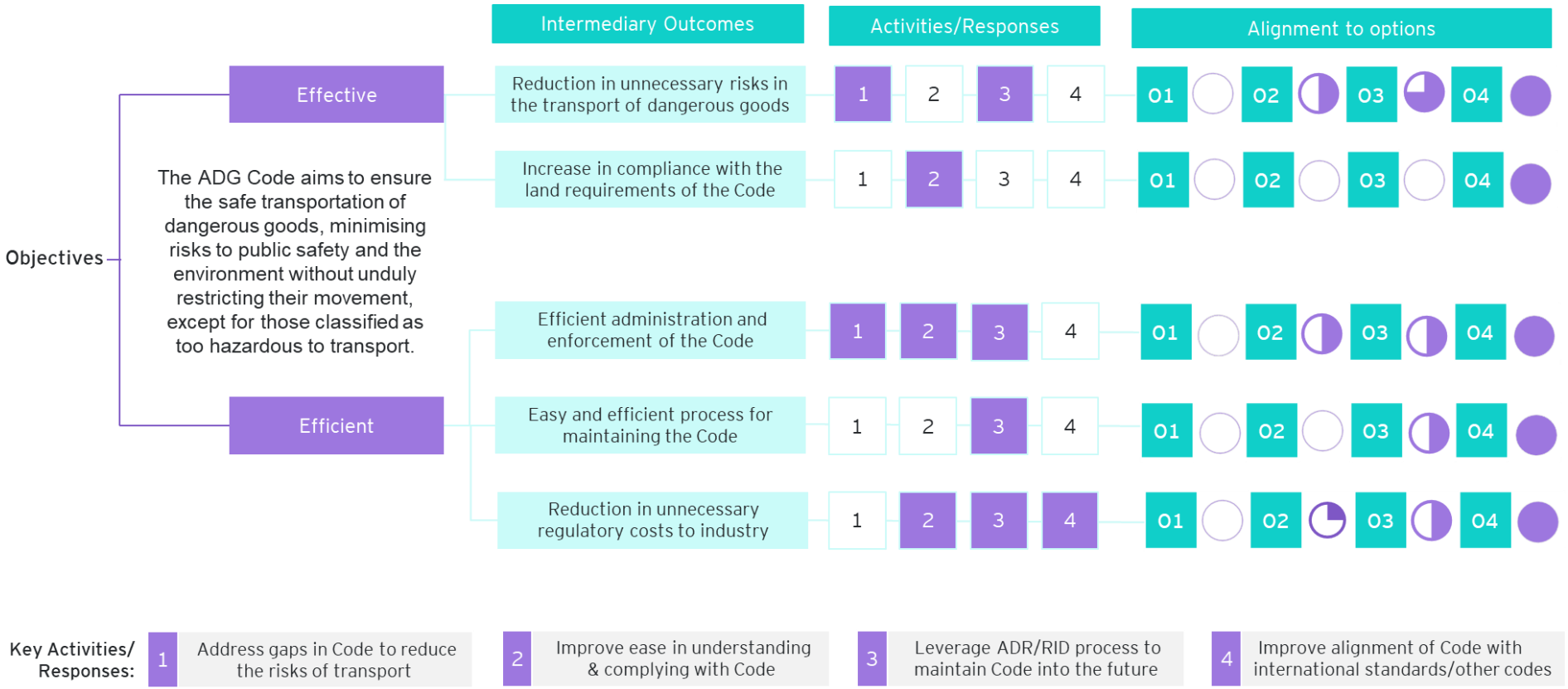
forward. However, the ADR/RID were developed mainly for road and rail transport in European countries. An additional technical code would be required to address Australian specific requirements such as Australian segregation rules, losing the benefits of a single document. To understand their responsibilities, duty holders would effectively need to use and cross-reference both documents, one aligned with UN regulations and one dealing with local derogations. Inevitably, this would introduce unnecessary complexity and confusion for duty holders, impacting their compliance and presenting potential safety risks. In this context, the burden would fall back onto the regulators and Competent Authorities to intervene and clarify requirements.

In the current legislative environment, Option 3 would require a significant number of derogations to make the Code fit for purpose in an Australian setting. This would also result in administration and implementation challenges that would make this a more complex option.

Option 4 was identified as the best option with no other viable options identified through extensive consultation with stakeholders. The option builds on the benefits from Option 3, with the added simplicity of supporting a single point of reference for the dangerous goods transport industry, which combines both internationally and locally derived road and rail requirements. By supporting a transparent and easy to navigate Code, Option 4 would reduce the complexity currently experienced by industry in understanding and complying with its requirements. By reducing reliance on measures outside of the Code such as Competent Authority determinations, Option 4 would also promote consistency in the application of its requirements across jurisdictions. Together, these drivers would support a more effective and efficient Code.

Figure 11: **Alignment of options to government objectives** summarises alignment of the options against the primary objectives of the Code and intended outcomes of the review.

Figure 11: Alignment of options to government objectives



5 Selected option

Key messages

This chapter outlines the process for developing the draft Code in line with the selected Option 4, including principles that have guided its development, key findings from consultation undertaken to date, and an overview of the structure of the draft Code, what has changed and what has not changed.

Changes to the structure and content of the draft Code are then outlined, organised by part of the draft Code. Each section provides an overview of key draft changes, highlighting the associated change in regulatory burden, benefits, and the parties most affected by the proposed changes**.**

Issues requiring further consultation are also outlined, organised by issue. Each section provides an overview of the issue and an overview of the options for consideration and feedback.

5.1 Process of drafting the draft Code

The draft Code has been drafted through a comprehensive process involving ongoing consultation with industry representatives, Competent Authorities and the public since 2022 (see Figure 12). In line with the intent of Option 4, four principles have guided development of the draft Code, which can be summarised as:

- Follow the structure of the ADR/RID.
- Where there is limited or no conflict with Australian practice, retain the ADR/RID.
- Where significant conflict with Australian practice exists, determine the ideal course of action, aiming to maintain the "look and feel" of Australian practices, whilst integrating them into the ADR structure.
- Incorporate Australian regulatory requirements that are not addressed by the ADR/RID but need to be retained.

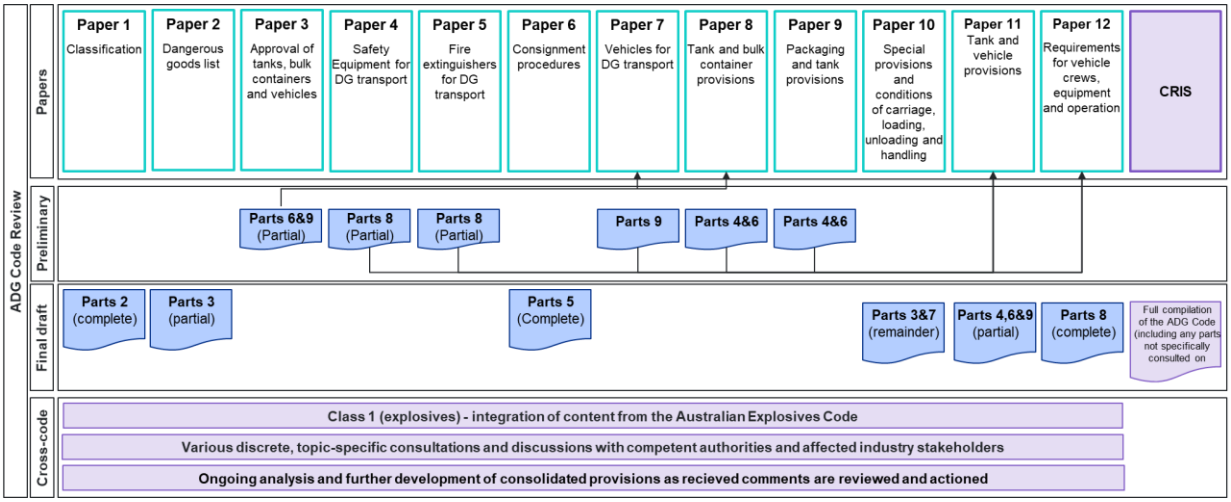
Figure 12: Code review and drafting process

The NTC has consulted on 12 Working Group Papers on specific topics, including the classification of dangerous goods, fire and safety equipment, and tank and vehicle provisions. Focus has been placed on complex areas of integration between the ADR/RID and Australian-specific provisions. To date, 138 submissions have been received from 36 industry entities, eight State and Territory government agencies, including seven Competent Authorities, on specific consultation questions outlined in the papers. Attachment E summarises the feedback received and how this has been addressed. Key feedback themes from the submissions include:

- Many provisions in the current Code are unnecessarily prescriptive and create a significant burden for the industry, e.g., EIPs on IBCs and special provisions that require Competent Authority intervention.
- The structure of the requirements in the ADR and RID makes it easier for duty holders to comply and will lead to better safety outcomes.
- The industry strongly supports the incorporation of ADR and RID concepts and approaches into the Code, including those regulating classification, vehicles, administrative controls, equipment to be carried, roles of duty holders, placarding, packing, special provisions, and tanks. It was noted that guidance will need to be developed for unfamiliar concepts adopted from ADR and RID, e.g., classification codes.
- The incorporation of requirements from the ADR and RID would have minimal impact on the operations of duty holders.

Feedback received on the papers informed the development of nine draft parts of the Code. As illustrated by Figure 13, most elements of the draft Code have now been consulted on, with remaining elements to be consulted as part of this C-RIS. Attachment D provides the latest draft of the Code for reference.

Figure 13: Code review working papers and consultation



5.2 Overview of selected option

The selected option consists of various changes to the existing Code (7.9 edition) to achieve its desired outcomes. Changes to the existing Code can be categorised as:

- **Changes to requirements for duty holders** to address gaps, errors, and outdated requirements in the land-mode provisions of the Code as well as misalignment with international standards and other transport codes.
- **Structural changes** to deliver a cohesive and consistent Code which addresses the disjointed, contradictory, and difficult to navigate land-mode requirements.
- **Added guidance or clarification of existing requirements** to reduce ambiguity, misalignment and confusion around existing Australian road and rail requirements.

The proposed draft Code will be a combination of existing and new parts, as summarised by Figure 14.

Figure 14: Structure of the current and draft Code, by Part

Existing Code		Draft Code	
Part 1	General provisions, definitions and interpretation	Part 1	General provisions
Part 2	Classification	Part 2	Classification
Part 3	DGL, special provisions and exceptions	Part 3	DGL, special provisions and exemptions related to limited and excepted quantities
Part 4	Packing, tank, container, vehicle and equipment provisions	Part 4	Packing and tank provisions
Part 5	Consignment procedures – including labelling, marking and placarding	Part 5	Consignment procedures
Part 6	Requirements for the construction and testing of packagings, IBCs, large packagings, portable tanks, MEGCs, bulk containers, tank vehicles, freight containers & segregation devices	Part 6	Requirements for the construction and testing of packagings, IBCs, large packagings, tanks and bulk containers
Part 7	Provisions concerning transport operations	Part 7	Provisions concerning the conditions of carriage, loading, unloading and handling
Part 8	Stowage and restraint		
Part 9	Segregation		
Part 10	Bulk transfer of dangerous goods	Part 8	Requirements for vehicle crews, equipment, operation and documentation
Part 11	Documentation		
Part 12	Safety equipment for road vehicles		
Part 13	Procedures during road transport		
		Part 9	Requirements concerning the construction and approval of vehicles (New to the Code)

Changes to the structure and content of the Code, organised by part, are summarised in Table 9, and are expanded on in Sections 5.4 to 5.12. Each section provides an overview and analysis of the key draft changes, highlighting the associated change in regulatory burden, benefits, and the parties most affected by the proposed changes**.**

The examples in this chapter are not an exhaustive list of changes and aim to provide insight to those changes that are perceived to have the most significant impact on industry productivity. To see all proposed changes, see Attachment F which provides analysis of all proposed changes and Attachment D, which contains the draft Code. When answering the consultation questions throughout this document, please consider all relevant changes included in Attachment F.

Table 9 Content of the Code under selected option, by Part

Part	Description of Part	What has remained	What has changed
1.	General Provisions	Most provisions within this chapter remain relatively unchanged.	• Restructured for better alignment with ADR and greater clarity of requirements. • Clearer understanding of general safety obligations applicable to duty holders. • Many provisions are currently addressed in the model legislation, or under Competent Authority policies/processes. Inclusion of these provisions in the Code supports improved understanding of requirements.
2.	Classification	The classification criteria, precedence of hazards criteria, and principles of classification remain the same.	• Restructured for easier navigation and greater clarity of requirements. • Substances that are prohibited from transport due to the hazard they present are clearly identified. • Relocated additional classification criteria from special provisions for a comprehensive overview of requirements.
3.2.	Dangerous Goods List DGL	Structure largely remains the same.	• DGL entries for prohibited or unregulated substances are clearly marked. • DGL entries with additional requirements for specific UN Number substances are split into separate line items with descriptive text outlining the requirements. • New columns for classification codes and carriage conditions, including loading, unloading, handling, and operations, have been added. • A list of UN numbers for certain chemical groups has been included to aid in segregating incompatible dangerous goods as specified in Table 9.2 of the Code.
3.3.	Special Provisions	All special provisions taken from the UN MR remain unaltered, other than those discussed in Section 5.6.2 Special Provisions	• Redundant special provisions have been removed from the Code. • Added special provisions to assist with correct UN number assignment. • Introduced additional special provisions for land transport context. • Moved special provisions related to transport methods to Part 7. • In some instances, the need for Competent Authority intervention has been replaced with detailed requirements. • Conditional concessions have been included for the transport of waste paints and other commodities that are unable to comply with requirements for new products and are therefore currently being transported in non-compliance. • Some current total exemptions have been modified to require a minimum assurance of safety in order to qualify for the exemption.
4.	Packing and tank provisions	Most provisions within this chapter remain relatively unchanged.	• Packing instructions updated with additions and clarifications for requirement interpretation. • Additional guidance for: – Determining fill levels.

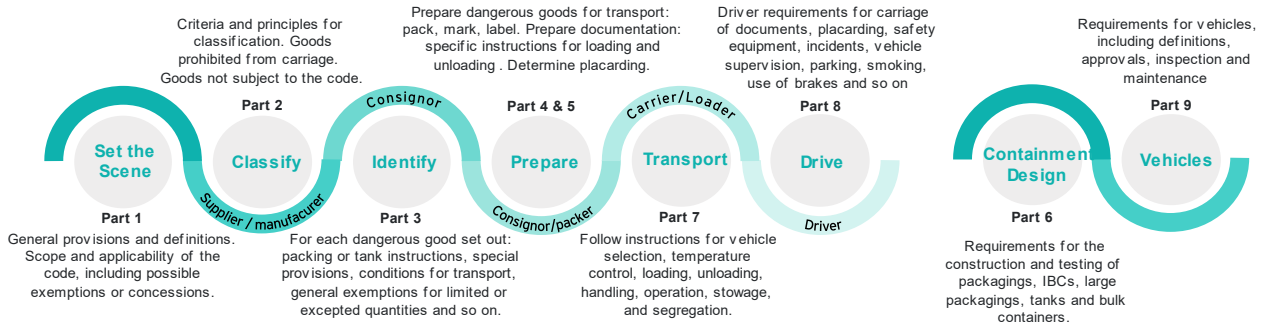
Part	Description of Part	What has remained	What has changed
			– Packagings permitted to be used as salvage packagings. – Verification of chemical compatibility with plastic packagings. • Moved provisions for vehicle selection and packaging type transport to Part 7. • Incorporated determinations and industry codes previously outside the Code. • Definition and requirements for use of MEGCs have been expanded to include MEGCs that are not designed for multi-modal use.
5.	Consignment procedures	Basic structure remains.	• Content revised to remove duplication and improve readability. • Relocated several requirements to more relevant sections; exemptions currently in Part 5 moved to Part 1, preparation of transport documentation moved from Part 11 to Part 5 and requirements to mark and label segregation devices moved from Part 4 to Part 5. • Maintained Australian-specific road and rail methodologies, with amended EIP and look of placards trigger requirements. • Removed concept of ‘placardable unit’ and clarifying distinction between ‘packaged dangerous goods’ and ‘tanks’. • Distinguished marking and labelling of ‘packaged dangerous goods’ versus EIP for ‘tanks’ and vehicles. • Clarification has been provided that IBCs are defined as ‘packaged dangerous goods’, resulting in removal of the requirement to display an EIP on them. • Retained vehicle EIP requirement when transporting IBCs, addressing emergency services' concerns.
6.	Requirements for the construction and testing of packagings, IBCs, large packagings, tanks and bulk containers	Structure largely remains the same.	• Incorporation of specific ADR requirements, such as permission for the use of tanks designed according to the ADR. • Clarification of requirements for Code users, for example, requirements for segregation devices, to support comprehension. • Incorporation of Competent Authority determinations, such as vacuum-operated waste tanks, for transparency. • Addressing existing gaps in the Code, including requirements for tube-vehicles.
7.	Provisions concerning the conditions of carriage, loading, unloading and handling	• Provisions largely unchanged.	• Restructured for alignment with the transport process to reduce complexity and improve compliance understanding. • Centralised provisions for vehicle selection and loading tasks. • Improved/simplified identification of appliable requirements.
8.	Requirements for vehicle crews, equipment, operation and documentation	N/A	• New Part 8 of the Code provides detailed provisions for requirements that need to be implemented by carriers (transport operators) and drivers of dangerous goods vehicles. • Chapters and sections within this part will support effective implementation of these requirements.
9.	Requirements concerning the construction and approval of vehicles	Requirements largely consistent with the Australian Standards (AS2809.1).	• New Part 9 of the Code specifies requirements that are included in the Australian Standards, which are not freely accessible (AS2809.1).

5.3 Global structural changes

The selected Option 4 presents the simplicity of a single point of reference for the dangerous goods transport industry, combining international best practice ADR/RID principles and locally derived Australian road and

rail requirements. Navigation of the draft Code has been improved through sequencing requirements in alignment with the transport process (see Figure 15 below). The flow of classification provisions has been restructured, for example, to follow a clearer logical order (including a consistent format and numbering style), making it easier for suppliers and manufactures to classify dangerous goods.

Figure 15 Alignment of the draft Code with the Transport Process



Land mode provisions have also been restructured to separate provisions and their requirements for different types of vehicles (e.g., tanks vs tube vehicles) and duty holders (e.g., transport operators vs drivers). For instance, to assist carriers in locating requirements, provisions relating to the selection and use of vehicles for transporting specific packaging types have been relocated to Part 7 of the draft Code. Meanwhile, Part 8 of the draft Code consolidates requirements that apply to a carrier or driver, eliminating the need for users to jump between different sections of the draft Code to determine which requirements apply to them.

Requirements have also been structured to address existing contradictions in land-mode provisions, delivering a more cohesive and consistent Code. For example, Part 5 of the draft Code – Consignment procedures, contains the requirements for preparing a load of dangerous goods. Consultation identified clarity and readability of consignment procedures as key concern for industry. The draft Code addresses these concerns in several ways including through removing duplication and shifting several requirements to more appropriate parts of the Code. For example, provisions regarding exemptions have been relocated from Part 5 to Part 1 with all other provisions addressing exemptions. Similarly, the preparation of transport documentation has been relocated from Part 11 of the current Code to Part 5 of the draft Code.

Global structural changes will reduce the complexity currently experienced by industry and regulators in complying with and enforcing land mode requirements of the Code, supporting improved safety outcomes and greater consistency in dangerous goods practices across Australia.

5.4 Part 1 – General requirements

5.4.1 Overview

Part 1 of the draft Code has been expanded with provisions that apply to dangerous goods transport generally. While some of this information, e.g., definitions, is included in the current Code, the draft Code expands on and provides a lot more guidance and information. These changes would be expected to support greater comprehension of the overall controls that apply to the transport of dangerous goods and include:

- Exemptions and concessions that apply to all transport operations.
- Duties and obligations held by transporters, in a more descriptive manner.
- Administrative controls for dangerous goods, including approvals of packages and tanks, and emergency planning.
- Security provisions.

5.4.2 Chapter 1.1 – General

The most significant change in Chapter 1.1 of the draft Code is the direct incorporation of several exemptions for dangerous goods transport. This chapter has reconfigured the existing exemptions for transport that do not fall under the typical definition of transport of goods as part of a business.

Another major change is the consolidation of provisions for small loads into one location. This provides duty holders with a single location in the draft Code to determine what concessions are available to them when transporting certain loads. Some of the requirements in this chapter of the current Code require a user to search through both the Code and enabling legislation to determine if they are applicable.

Additionally, other matters that affect duty holders generally, such as intermodal transport issues, are now addressed in one place within the Code. The Code will also include the decision-making criteria that Competent Authorities use in making determinations and exemptions relating to dangerous goods transport.

5.4.2.1 Key changes in requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
1.1.3.1	The exemptions that apply to dangerous goods transport outside of transport operations have been substantially reconfigured.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Clearer provisions for persons who are undertaking transport that is not freight transport, such as private individuals or companies performing ancillary transport tasks.	• Private transporters
1.1.3.6	The provisions relating to small loads have been consolidated and their application clarified. Additionally, taking these concessions has been made optional.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	All information is in one place, reducing the workload to determine if they apply. Making the concession optional aligns to the principles found throughout the Code and provides flexibility to duty holders.	• Transport industry
1.1.3.11	Certain dangerous goods being transported from a retail sale location are exempted from regulation in some cases.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Equivalent treatment of home delivery services as private transport for low-risk domestic dangerous goods.	• Retailers/ home delivery services
1.1.3.13	Short journeys that cross a road, such as to load a vehicle or to move goods between two premises owned by one owner are exempted.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Clarity for businesses (including farms) about the applicability of regulations for extremely short journeys.	• Private transporters
1.1.6	Information on determinations and exemptions by Competent Authorities moved into the Code.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Provides readily available information for transporters about Competent Authority decision-making for determinations or exemptions.	• Transport industry

5.4.3 Chapter 1.3 – Training

This is a short chapter of the draft Code that provides descriptive information about the training requirements for participants in dangerous goods transport, except for drivers (driver training is covered later in the Code in greater detail, in Chapter 8.6). This chapter does not outline new requirements and aims to clarify what sufficient training looks like in the dangerous goods transport supply chain. While this chapter is quite short, it provides information that it is likely to be expanded on as the NTC undertakes further work to analyse and consider more detailed training requirements for dangerous goods transport.

5.4.4 Chapter 1.4 – Safety obligations of the participants

This is a descriptive chapter that outlines the various safety obligations applicable to participants in dangerous goods transport. This chapter does not introduce any changes in regulatory burden and only moves existing safety obligations from the MSI into the Code. This information is currently only available by reviewing the duties contained in the dangerous goods transport legislation. The formal duties that apply to the various participants in the transport of dangerous goods will continue to be assigned by the legislation, however this will enable transporters to more readily understand and comply with their obligations.

5.4.5 Chapter 1.6 – Transitional provisions

The current Code contains some transitional provisions; however, they are only sparse in nature. Currently, the Code does not contain any global provisions for the ongoing use of equipment or practices that conform to earlier editions of the Code. While dangerous goods transport legislation contains transitional provisions to permit ongoing use, these are not readily accessible for users of the Code, and the way these provisions are applied can be uncertain. As they are found in legislation, they are often written in a non-specific way that is unfamiliar for non-specialists.

By including a chapter for transitional provisions, users will be provided with greater certainty about the ongoing use of equipment or practices that conform to earlier editions of the Code. The content of this chapter is to be developed when the finalised version of the Code is compiled and may include both enduring and temporary transitional provisions. The NTC proposes to use the following general principles for the development of these provisions:

- Where equipment (and related procedures) conforms to earlier editions of the Code, an enduring transitional Provision will be provided. This requires that the continued use is safe, and that equipment and procedures are properly maintained.
  - An example of this is the ongoing use of a tank designed to an earlier edition of the Code. Provided it is properly inspected and maintained, it will be permitted for ongoing use.
- Where a practice or equipment Provision changes and it is necessary to transition this out of use, a temporary transitional Provision will be provided. The time for such a transition will depend on several factors, such as the level of safety provided, and the time it takes to replace equipment.
  - An example of this is where required markings on packagings change. It is appropriate to provide time for transporters to use existing stock of packagings, but new stock must comply with the new provisions of the draft Code.

5.4.6 Chapter 1.8 – Administrative controls for dangerous goods

Chapter 1.8 incorporates administrative controls relating to the transport of dangerous goods into the Code. These provisions are currently found spread across the Code, the model legislation and Competent Authority policies and procedures. Thus, many of the changes in this chapter consist of relocating into the Code those provisions that are only found outside of the Code. Including this content into the Code will support:

- More effective understanding of industry's compliance obligations.
- Greater uniformity of how administrative controls are applied across States and Territories.

In addition to the greater detail this chapter provides to both the transport industry and Competent Authorities, Chapter 1.8 also provides information on the appointment of a dangerous goods safety advisor (DGSA). This is a recommended advisory role that functions as a source of expertise and advise on the transport of dangerous goods for companies involved in this activity.

Additionally, this chapter includes information on planning for dangerous goods transport incidents. Australian consignors and transporters of dangerous goods have long been required to have emergency plans in place to manage transport incidents. However, this information has never been included in the Code itself. The draft Code has not introduced any substantial new requirements for emergency preparation, instead consolidating these provisions in Section 1.8.5, supporting greater transparency of these obligations

5.4.6.1 Key changes in requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
1.8.1 & 1.8.2	Information has been included on Competent Authority inspections and the Provision of mutual support.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Duty holders and Competent Authorities are provided with greater clarity on these provisions, which can be expected to increase compliance.	• Transport industry • Competent Authorities
1.8.3	Recommends the creation of a DGSA role by transporters.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Having expertise in dangerous goods transport would be expected to reduce instances of non-compliance and support more effective transport operations for dangerous goods.	• Transport industry
1.8.5	Incorporates the definition of a dangerous situation into the Code, the requirements for transport emergency response planning, and notification to Competent Authorities. These requirements are currently located in the MSI.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Greater clarity on when an incident is considered a dangerous situation, and planning requirements for transport. This would be expected to support more effective emergency response.	• Consignors and carriers
1.8.5	Information about insurance required for transporters of dangerous goods has been incorporated into the draft Code from the MSI.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Greater transparency is provided for transporters of dangerous goods, which would be expected to increase compliance.	• Consignors and carriers
1.8.7	Substantially greater detail on the administrative controls for approvals of tanks and vehicles for the transport of dangerous goods.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Manufacturers and inspectors of tanks and vehicles
1.8.7	This section also creates a more effective linkage between pressure receptacle design registration and the Code.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Makes clear the link between the pressure receptacle legislation and the Code, reducing the potential for confusion.	• Manufacturers and inspectors of tanks and vehicles
1.8.9	This section incorporates the packaging approval requirements currently found in the model legislation.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Clarifies the underlying rules for approval of packagings for dangerous goods.	• Packaging manufacturers • Competent Authorities

Questions for consultation

Q1. How will including information in the Code, that is currently only found in the regulations, help your organisation?

Q2. Should the dangerous goods safety advisor role be made mandatory?

5.4.7 Chapter 1.10 - Security provisions

Chapter 1.10 is a new chapter proposed for inclusion in Part 1 that addresses gaps in the current Code associated with the tampering with or theft of dangerous goods throughout the transportation process. Both the UN MR and ADR include requirements for security plans; however, the current Code marks the equivalent chapter as “reserved”. The security provisions are not particularly prescriptive, rather they inform a transporter of the security matters they should consider when transporting dangerous goods. Transporters of dangerous goods with a greater security concern will need to develop a security plan, to ensure that these matters are properly addressed.

5.4.7.1. Key changes in requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
1.10.1	Section 1.10.1 outlines the general security provisions to be followed by duty holders.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Greater clarity on expectations would be expected to support a reduction of risk to transport operators, their employees and the community associated with the theft and/or tampering of dangerous during the transport/logistics process.	• Transport Industry • Community
1.10.2	Section 1.10.2 directs that the training provided to duty holders should also include training on the security of dangerous goods.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport Industry
1.10.3	Section 1.10.3 provides provisions for high consequence dangerous goods (those that have the potential for misuse in a terrorist event, e.g., toxic gases, flammable liquids, and ammonium nitrate). This section includes the requirement for a transporter to develop a security plan that addresses security requirements for the loads being transported. The requirements are descriptive, not prescriptive.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport Industry • Community
1.10.3	Section 1.10.3 includes the security requirements for Class 1 transport, which have been taken from the AEC.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	By including this section in the Code (which is also a section in ADR) it would be subject to regular review. This would keep the requirements within this section up to date, which can be expected to improve safety outcomes.	• Community

Questions for consultation

Q3. We seek to understand to what extent transport providers already have measures in place to ensure the security of dangerous goods and costs associated with this. In particular:

- Do you have a security plan in place for dangerous goods of security concern? If so, what costs are associated with the development and implementation of this per annum?

- What if any additional costs would be expected from complying with these security provisions?

Q4. Do you consider the thresholds for high consequence dangerous goods, which would require the preparation of a security plan, are appropriate?

- If not, please explain why?

5.5 Part 2 – Classification

5.5.1 Overview

While there are no changes proposed to classification criteria, Part 2 has been restructured and renumbered to improve the readability and cohesiveness of the Code. The inclusion of additional classification requirements previously imposed via special provisions, ensures all classification related requirements are contained in Part 2 of the draft Code. The improved structure and flow of requirements in Part 2 is expected to make identifying, understanding, and applying classification easier for duty holders. It would also be expected to make it considerably easier for duty holders to locate requirements relevant to them.

5.5.1.1 Key changes

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
2.2	Classification codes have been included. Classification codes are used to communicate hazard information, including additional information not readily ascertained from the Class or Division, Subsidiary Hazards and Packing Group. This information includes, among others, whether a substance is a liquid or a solid, organic or inorganic, and whether a gas is liquefied, refrigerated, compressed, dissolved, adsorbed.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Classification codes are expected to address some of the issues raised by stakeholders, particularly the desire to provide physical descriptions in the dangerous goods list and the ability to distinguish between acids and alkalis in Class 8.	• Importers • Manufacturers • Transport industry
2.2.x.2	Substances of a Class that are prohibited for carriage are clearly identified and are always numbered 2.2.x.2, e.g., 2.2.3.2 for prohibited substances of Class 3, or 2.2.61.2 for prohibited substances of Class 6.1.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden☒ Structural change ☒ Guidance/clarification ☐ Unknown	Provides transparency of substances that are considered too dangerous to transport. This can be expected to reduce the occurrence of unintentional incorrect classification and consequently improve safety outcomes.	• Transport industry

For further detail, see Working Group Discussion Paper #1 - Classification of Dangerous Goods

5.6 Part 3 – Dangerous goods list (DGL), special provisions and exemptions related to limited and excepted quantities

5.6.1 DGL

Changes to the DGL represent no real change to requirements. Instead, they provide clarity and enhance the readability of the Code, which has been a key concern raised by stakeholders during previous

consultations. Stakeholders have also raised issues with understanding which requirements apply to their circumstances. The proposed changes to the DGL improve both the readability of the Code and the identification of requirements. Additional columns have been added to the dangerous goods list to include references to assigned special provisions for carriage. These are detailed further in Section 5.10 below. To see the DGL that is proposed for the draft Code, see Attachment G.

5.6.1.1 Examples of key changes

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
3.2.3	Additional columns have been added to allow inclusion of classification codes and references to new special provisions for carriage. Special provisions added to the DGL include V codes (provide guidance for carriage in packages), VC codes (providing guidance for carriage in bulk), and CV codes (provide guidance for the loading, unloading or handling of certain classes or specific goods).	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Duty holders are provided with transparent additional hazard information, including additional information not readily ascertained from the Class or Division, subsidiary hazards and packing group. This can be expected to increase compliance and safety outcomes.	• Consignors • Transport industry
3.2.3	UN entries not subject to regulation for land transport or prohibited from transport have been clearly identified with 'NOT SUBJECT TO THIS CODE' or 'NOT ACCEPTED FOR CARRIAGE', respectively.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Removes potential confusion and reduces the likelihood of substances that present an unacceptable high risk from being transported.	• Consignors • Transport industry
3.2.3	Primary and subsidiary hazards have been combined and are detailed in Column 4.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Duty holders are provided with simplified information, which can be expected to reduce potential confusion and reduce non-compliance.	• Consignors • Transport industry
3.2.3	Additional entries have been added for some UN Numbers to enable compliance with other requirements, e.g., Provision 4.1.1.10 which prohibits the transport of liquids in IBCs if the liquid has a vapour pressure of more than 110 kPa (1.1 bar) at 50°C, or provisions for viscous substances.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Duty holders are provided with transparent requirements, which can be expected to increase compliance and safety outcomes.	• Consignors • Packers

For further detail, see Working Group Discussion Paper #2 – UN Entries

5.6.2 Special Provisions

Chapter 3.3 details the special provisions, which are assigned to UN entries in the DGL to specify conditions or concessions applicable to a particular article or substance. The current Code replicates the special provisions from the UN MR but does not include additional special provisions for transport by road or rail. The inclusion of land mode-specific provisions in the draft Code implements the UN TDG Sub-Committees' intent of developing mode-specific requirements that harmonise with UN MR provisions, while providing controls that are appropriate for land transport risks, including concessional exemptions for low-risk goods. The land-mode special provisions proposed in the draft Code generally fall into the following categories:

- Special Provisions that assist in assigning the correct entry in the DGL or provide additional information.
- Special Provisions that provide full or partial exemption from the requirements of the Code, with or without conditions.
- Special Provisions that prohibit the carriage of specific substances.
- Special Provisions that add additional requirements or restrictions.
- Special Provisions that provide detailed transport conditions that replace the requirement for Competent Authority intervention before transport can occur.
- Special provisions that enable compliance.
- Australian specific special provisions or special provisions that have been modified from the original source (UN MR, ADR, or RID) are identified with an 'A', e.g., SP 650A.

5.6.2.1 Deleted special provisions

In the current Code, there are several special provisions that contain additional requirements for classification, e.g., SP 63, SP 204, and SP 206. In the draft Code, the content of these special provisions has been relocated to Part 2 – Classification to better align with the transport process. Consequently, these special provisions are redundant in Part 3 and have not been included in the draft Code.

5.6.2.1.1 Examples of deleted special provisions

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
3.3	SP 63, SP 204, SP 206, SP 223, SP 299, and SP 362 have not been carried forward. The content of these special provisions is now contained in Part 2 – Classification.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	The relocation of content within these special provisions better aligns with the transport process, supporting ease of navigation of the Code which can be expected to improve compliance.	• Consignors

For further detail, see Working Group Discussion Paper #10 – Special provisions and conditions of carriage, loading, unloading and handling

5.6.2.2 Special provisions that provide full or partial exemptions

In the current Code, transport scenarios are often regulated with blanket requirements that do not differentiate between high-risk and low-risk goods. In the draft Code, several special provisions are proposed that would provide full or partial exemptions for low-risk goods, e.g., SP 584, SP 653, and SP 592. It is expected that the inclusion of these provisions would reduce unnecessary burden, supporting the efficiency and productivity of the dangerous goods transport industry.

5.6.2.2.1 Examples of special Provision that provide full or partial exemptions

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
3.3	SP 584 provides a conditional exemption from the requirements of the Code for very small gas cylinders containing carbon dioxide or nitrous oxide when: • It contains not more than 0.5% air in the gaseous state; • It is contained in metal capsules (sodors, sparklets)	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Carriers of goods subject to the proposed special provisions would be exempt from all other requirements of the Code. The proposed risk-based approach to regulation reduces unnecessary burden for low-risk	• Retail industry/ home delivery services

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
	free from defects which may impact their strength; • The leak proofness of the closure of the capsule is ensured; • A capsule contains not more than 25g of this gas; and • A capsule contains not more than 0.75g of this gas per cm^3 of capacity.		transport scenarios and supports the efficiency and productivity of industry. This approach also removes the dangerous goods surcharges imposed by transport providers for exempt goods.	
3.3	SP 653 exempts the transport of argon, carbon dioxide, helium and nitrogen in small cylinders that have a maximum test pressure capacity product of 15.2 MPa/litre from the requirements of the Code provided the conditions specified in the special Provision are met.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry • Metal manufact-uring and fabrication industries • Medical industry • Fertiliser industry
3.3	SP 592 exempts from the requirements of the Code uncleaned, empty packagings (including empty IBCs and large packagings), empty tank-vehicles, empty tank-wagons, empty demountable tanks, empty portable tanks, empty tank-containers and empty small containers which have contained substances of UN 1376, 1932, 2002, 2009, and 2793. This includes iron oxide, scrap cinematography film, zirconium sheets and scrap, and ferrous metal borings, shavings, turnings or cuttings.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry
3.3	SP 601 exempts from the requirements of the Code ready for use pharmaceutical products (medicines), which are substances manufactured and packaged for retail sale or distribution for personal or household consumption.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Retail industry/ home delivery services • Pharma-ceutical manufact-urers and suppliers
3.3	SP 598 provides a conditional exemption from the requirements of the Code for new or end of life batteries of UN 2794, 2795, 2800, and 3028.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry
3.3	SP 648 exempts from the requirements of the Code articles impregnated with pesticides meeting the specified UN Numbers including fibreboard plates, paper strips, cotton-wool balls, and sheets of plastics material, in hermetically closed wrapping.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
3.3	SP 665 exempts unground hard coal, coke and anthracite, meeting the classification criteria of Class 4.2, Packing Group (PG) III, from the requirements of the Code. This effectively replicates the determination made by the CAP in November 2023.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Coal industry
3.3	SP 668 provides a concessional exemption from the requirements of the Code for elevated temperature substances for the purpose of applying road markings provided: • They do not fulfill the criteria of any class other than Class 9; • The temperature of the outer surface of the boiler does not exceed 70°C; • The boiler is closed in such a way that any loss of product is prevented during carriage; and • The maximum capacity of the boiler is limited to 3000L.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Local Councils
3.3	SP 654 provides concessions and clear instructions for the transport of waste lighters of UN1057 collected separately and carried for transport.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Waste industry
3.3	SP 636 provides conditional concessions for lithium cells and batteries being transported to an intermediate processing facility for sorting, disposal or recycling.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Waste and recycling industry
3.3	SP 650 provides alternative packing methods for the safe transport of wastes of paint and paint related materials of UN1263.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Carriers of impacted have risk appropriate and achievable alternative requirements, providing greater flexibility, and reducing burden and associated costs such as for packing and segregation.	• Waste industry

For further detail, see Working Group Discussion Paper #10 – Special provisions and conditions of carriage, loading, unloading and handling

Questions for consultation

For each concessional exemption applicable to your organisation (please include the special Provision number(s) in your response).

Q5. How many consignments of impacted goods do you consign per annum, on average?

Q6. Can you provide an estimate of the annual savings in dangerous goods surcharges these concessions would provide your business?

5.6.2.3 Special provisions clarifying prohibited substances

The Code currently prohibits the carriage of specific substances due to the unacceptable risks presented during transport by road and rail, e.g., anhydrous hydrogen cyanide is prohibited in some forms due to the severe explosion hazard it presents. It is often unclear what substances are prohibited, creating potential risk of these substances being unintentionally classified and transported. In the draft Code, special provisions have been introduced to clarify the prohibited status of substances and prevent prohibited substances from entering the supply chain, e.g., SP 602, SP 603, SP 607, SP 609, SP 610, SP 611, SP 613, and SP 614.

5.6.2.3.1 Examples of special provisions clarifying prohibited substances

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
3.3	SP 603 prohibits the carriage of anhydrous hydrogen cyanide not meeting the description for UN No. 1051 or UN No. 1614. The special Provision also clarifies that hydrogen cyanide (hydrocyanic acid) containing less than 3% water is stable, if the pH-value is 2.5 ± 0.5 and the liquid is clear and colourless.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Clarifies existing requirements. This helps prevent impacted substances being inadvertently assigned to the mentioned UN numbers and can be expected to improve safety outcomes.	• Transport industry
3.3	SP 607 prohibits the carriage of mixtures of potassium nitrate and sodium nitrite with an ammonium salt.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry

For further detail, see Working Group Discussion Paper #10 – Special provisions and conditions of carriage, loading, unloading and handling

5.6.2.4 Special provisions that remove the need for reactive Competent Authority intervention

The current Code includes several special provisions that necessitate case-by-case intervention by the Competent Authority, e.g., SP 301, SP 363, SP 388 and SP 374. This process can create variation in the practice and conditions imposed across jurisdictions by Competent Authorities.

In the draft Code, many of these provisions and requirements within these provisions have been omitted and replaced with requirements or special provisions that do not necessitate Competent Authority intervention, e.g., SP 672, SP 663 and SP 667. This approach shifts requirements from being reactive to proactive in nature, reducing unnecessary time delays and burden for all parties, and ensuring consistency in industry practice. Regardless of the approach, the requirements would be applicable in all cases.

5.6.2.4.1 Examples of special provisions that remove the need for Competent Authority intervention

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
3.3	SP 301 is only assigned to UN 3363. The following paragraph has been deleted from SP 301: "The Competent Authority may exempt from regulation articles which would otherwise be transported under this entry". A reference to SP 672 has replaced this paragraph and still exempts dangerous goods in articles, machinery, or apparatus of UN 3363 from all other requirements of the Code, provided the packaging instructions in SP 672 are met.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	By removing the need for Competent Authority intervention and outlining the requirements for these goods, industry and Competent Authorities can be expected to benefit from a reduction in unnecessary delays and burden associated with the current reactive process. The change is also expected to support greater consistency in practices across jurisdictions.	• Transport industry
3.3	SP 374 allows consignments to be classified as UN 3509 Packagings discarded, empty, uncleaned. SP 374 has been deleted and replaced with SP 663, which removes the requirement for Competent Authority authorisation, limits the scope of UN 3509 and outlines the specific requirements that apply.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry

For further detail, see Working Group Discussion Paper #10 – Special provisions and conditions of carriage, loading, unloading and handling

5.6.2.5 Australian specific special provisions

The current Code contains seven special provisions which are unique to Australia. These special provisions have not been carried forward to the draft Code. Some of these special provisions are replaced with the same requirements from the ADR/RID. Others are addressed in more appropriate areas of the Code. For example, AU04 is now addressed by the assignment of SP589A and AU08 is now addressed in 1.1.3.6.3.

5.6.2.5.1 Examples of changes to Australian specific special provisions

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
3.3	AU01 has been removed and replaced with SP 601 which provides a total exemption for ready to use pharmaceutical products, and SP 375A which provides two levels of exemptions: • Packages not exceeding 30 kg/L remain fully exempt, provided minimum packaging requirements are met. • Packages with a capacity greater than 30kg/L are exempt from all requirements other than minimum packaging requirements and are marked and labelled.	☒ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	This change is expected to prevent loss of containment and improve communication of hazards, reducing risks to people and the environment. Exemptions are retained but attach minimum safety requirements.	• Paint industry • Agricultural and veterinary industry.
3.3	AU03 has not been carried forward. The requirement to provide a copy of the Transport Emergency Response Plan (TERP) to the relevant hazmat incident combat	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification	The regulatory burden incurred by duty holders in providing the TERP to the	• Bulk gas industry

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
	agency before the journey commences has not been carried forward. Other requirements of AU03 are now addressed in other areas of the Code. • DGL entries – new entries have been created for UN 1011, UN 1075, UN 1978 that are unodourised. The new entries add 'UNODOURISED' to the proper shipping name. • Chapter 1.8 provides information on the requirements for a TERP. • S51A has been added to column 19 of the dangerous goods list. The detailed requirements of S51A are contained in Chapter 8.5. They specify the need to carry a gas detector and when it is to be used.	☐ Unknown	relevant hazmat incident combat agency prior to carriage would be removed. This is expected to simplify the transport of Unodourised LP Gas, Propane and Butane.	
3.3	AU07 has been removed and the segregation of chlorine has changed to be based on its inherent hazards.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Basing the segregation of chlorine on its inherent hazards is expected to reduce intermodal barriers by realigning with international practice, and reduce safety risks.	• Transport industry

For further detail, see Working Group Discussion Paper #10 – Special provisions and conditions of carriage, loading, unloading and handling

Questions for consultation

For all changes proposed for AU special provisions:

Q7. Are there any impacts you believe have not been identified and addressed?

Q8. If so, please indicate the applicable special Provision number(s) and the associated impact(s).

For AU01:

Q9. If your operations are impacted by the changes made to AU01, what industry do you operate in and what articles would be impacted?

Q10. If any, what operational implications would there be for your industry?

Q11. How many large capacity consignment/packages would this change impact per year? What proportion of total consignments does this represent?

Q12. If possible, please provide an estimate of the additional costs associated with this change, including packaging, preparation of transport documentation, and marking and labelling costs.

5.6.3 Table C – Chemical groupings

To assist in the segregation of incompatible substances listed in Table 9.2, a list of UN numbers for the relevant chemical groupings has been added to Chapter 3.2, as Table C. These chemical groupings are:

Acids (with strong acids identified); Alkalis; Ammonium compounds; Bromates, Chlorates; Chlorites; Cyanides; Hypochlorites; Nitrites; Perchlorates; Permanganates; Peroxides; and Powdered metals.

5.7 Part 4 - Packing and tank provisions

The structure and content of Part 4 of the current Code has been retained. In the draft Code, the requirements in this chapter have been extended to address existing gaps, e.g., non-UN MEGCs, and to include additional guidance that currently sits outside the Code, e.g., guidance that currently sits in CAP determinations. Additional guidance has also been included to assist in the application of other requirements, e.g., 4.1.1.4 - degree of filling or 4.1.1.2 – compatibility of substances and plastics packagings.

5.7.1 Packing instructions

Packing instructions originating from the UN MR largely remain as per the current Code. However, several minor variations have been incorporated in Part 4 of the draft Code. These variations are primarily aimed at improving safety during transport or adding clarity.

5.7.1.1 Examples of key changes

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
IBC instructions	Special packing instructions B1 and B2 have been deleted from IBC instructions. The requirement for carriage in closed or sheeted vehicles has been relocated to Part 7.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Existing requirements in the Code have been restructured to support navigability. These changes aim to promote transparency of the requirements and reduce inadvertent non-compliance.	• Transport industry
P001	A requirement for venting has been added for substances of Class 3, PG III, which give off small quantities of carbon dioxide or nitrogen. This includes some paints, varnishes, lacquers, and petroleum oils.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☒ Unknown	Prevents build-up of pressure that could result if the packaging fails, which can be expected to improve safety outcomes for loaders and unloaders.	• Consignors • Transport industry
P003	A note has been added to P003 special packing Provision PP16, requiring the securing of batteries and protection from damage and short circuit. A second note has also been added, directing the use of P801 for used batteries of UN 2800. P801 has been amended to require bins carrying used batteries to be either covered or carried in closed or sheeted vehicles or containers.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Provides greater options and flexibility to industry, which would be expected to support operational efficiencies and improve compliance.	• Transport industry

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
P410	Special packing Provision PP40 prohibits the use of bags for PG II goods and has been extended to apply to aluminium ferrosilicon powder (UN 1395), aluminium powder, uncoated (UN 1396), zinc powder or dust (UN 1436), and fused lithium hydride (UN 2805).	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☒ Unknown	Bags do not provide sufficient containment for these dusts. Prohibiting the use of bags can be expected to prevent the escape of fine dusts into the atmosphere, improving safety outcomes and limiting environmental impacts.	• Consignors • Transport industry
New special packing provisions	Special packing instructions have been proposed for land transport. These include: • 10 new RR special packing provisions have been included for P packing instructions. • 4 new BB special packing provisions have been included for IBC packaging instructions. • 1 new LL special packing Provision has been included for LP packing instructions.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☒ Unknown	Provides flexibility for duty holders without compromising safety, which can be expected to improve compliance.	• Transport industry

For further detail, see Working Group Discussion Paper #9 – Part 4: Packing and tank provisions

Questions for consultation

For all proposed new or amended packing instructions applicable to your organisation (please include the provision number(s) in your response):

Q13. If your operations are impacted by these changes, what industry does your business operate in?

Q14. What are the implications on your operations?

Q15. What is the volume of goods impacted by these changes?

Q16. Are there any additional or reduced costs associated with the proposed new or amended provisions?

5.7.2 Use of portable tanks and MEGCs

The current Code primarily focuses on tanks that are used as part of a tank vehicle, meaning that there are transport scenarios that are not adequately addressed or are completely omitted, e.g., multi-modal MEGCs and tube-vehicles (where an MEGC forms a permanent part of a vehicle). The draft Code will address these deficiencies by:

- Clarifying requirements for tanks where inadequate guidance is currently provided.
- Including specific requirements for tanks that are currently omitted from the Code, e.g., tube-vehicles.

5.7.2.1 Examples of key changes

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
4.3.	Contains requirements for the use of fixed tanks (tank- vehicles and tank-wagons), demountable tanks, tank-containers and tank swap bodies with shells made of metallic materials, tube-vehicles and tube-wagons, and MEGCs. These requirements include those pertaining to the degree of filling for tanks, filling conditions and test pressures, and special provisions applicable to the packing and filling of specific goods and classes.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Duty holders are provided with clarity on requirements regarding the use of tanks and MEGCs. This can be expected to increase compliance and safety outcomes.	• Transport industry
4.3.	Contains requirements for the use of MEGCs, whether multimodal or forming a permanent part of a vehicle.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	MEGCs that are not designed to be multimodal, or form part a permanent part of a vehicle is provided with adequate guidance in the Code. These are currently considered significant gaps in requirements.	• Transport industry

For further detail, see Working Group Discussion Paper #9 – Part 4: Packing and tank provisions and Working Group Discussion Paper #11 - Draft tank and vehicle provisions

Questions for consultation

If you transport dangerous in tube-vehicles:

Q17. Will the proposed new provisions for tube-vehicles have any impacts on your operations?

Q18. What is the volume of goods impacted by these changes?

Q19. Are there any additional or reduced costs associated with the proposed new or amended provisions?

5.7.3 Vacuum-operated waste trucks (vacuum tankers) and mobile explosives manufacturing units (MPUs)

Currently, existing requirements regarding the use of vacuum tankers and MPUs (also known as mobile explosive manufacturing units (MEMUs)) sit outside of the Code and are difficult for duty holders to locate.

- Requirements relating to vacuum tankers are currently applied by a 2014 CAP determination (CAP decision Competent Authority 2014/19), which is not publicly available.
- MPUs are currently self-regulated under an Industry Code of Practice (CoP). Some States and Territories have given legal effect to the CoP via their respective legislation, but this is not the case everywhere.

The draft Code will directly incorporate these requirements. New provisions will not create significant new obligations on transporters but clarify the application of the Code to these situations. For MPUs, for example, the Code will continue to refer to the MPU CoP. Including these requirements in the Code will:

- Increase transparency for users of these vehicles.

- Ensure the ongoing maintenance of these provisions.
- Make it easier for regulators to assess compliance and undertake enforcement.

Questions for consultation

Q20. Do you have any concerns with the inclusion of vacuum waste tankers directly in the ADG?

5.8 Part 5 – Consignment procedures

5.8.1 Overview

Part 5 of the Code contains the requirements for preparing a load of dangerous goods for transport. These provisions include the marking and labelling of packages and containers, placarding requirements, and the preparation and provision of transport documentation, including actions to take in the event of an emergency. This information is critical in communicating hazards to those further along the dangerous goods transport supply chain, such as those who load goods. It also provides vital information to first responders

The structure and general content of Part 5 have been revised to reduce repetition and complexity, making it easier for duty holders to navigate the Code and identify requirements relevant to them.

For example, consignment procedures that were previously located in other parts of the Code have been relocated to Part 5, e.g., marking and labelling requirements for segregation devices, and the preparation of transport documents. Likewise, some provisions included in Part 5 of the current Code have been relocated to more appropriate parts of the Code, e.g., exemptions relating to placarding of intermodal loads.

Requirements relating to placarding of tanks and vehicles has been rationalised to remove repetition and conflicting requirements. In doing this, the uniquely Australian concept of a ‘placardable unit’ has been removed, completing the transition to full alignment with the UN concept of packages and tanks, which commenced with introduction of ADG 7.

The requirement to display an EIP on an IBC has also been removed, reducing international and intermodal barriers, and reinforcing that IBCs are packages. The requirement to placard a vehicle transporting IBC has been retained, to address concerns from emergency services. The content and look of EIPs has also been retained.

5.8.1.1 Key changes in requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
5.2	The heading of this chapter has been amended to include ‘IBC’.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	This reiterates that IBCs are ‘packages’ under the UN system, which would be expected to reduce potential confusion and improve compliance.	• Transport Industry
5.1	The provisions in 5.1.2.1 for marking and labelling of overpacks has been extended to include segregation devices.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Provides transparency of the requirement, which can be expected to improve compliance and safety outcomes.	• Transport industry

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
5.2	The concept of a placardable unit has been omitted from the draft Code and all packagings (including IBCs) require standard marking and labelling only. This removes the requirements for IBCs to display EIPs.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	This would remove intermodal barriers, improve safety for workers and save industry in excess of $180m per annum.	• Suppliers and manufacturers • Transport industry • Consumers
5.3	EIPs have been retained for: (a) bulk container (excluding IBCs), MEGC, tank container, portable tank, tube vehicle, tube-wagon, MPU, tank vehicle, tank-wagon. (b) transport unit and wagon carrying bulk containers, tanks or IBCs. Note: The definition of a tank-container includes a container for gases, with a capacity greater than 450 L.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Retains the requirement for EIPs to be displayed on vehicles transporting IBCs which communicates the hazards of a consignment to other duty holders, the public, and emergency responders. This can be expected to improve safety outcomes.	• Emergency responders
5.3.1.1.2	A new requirement has been introduced that requires placards to be reflective, meeting the specifications of Class 100 reflectivity according to AS/NZS 1906.1:2017.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Provides greater visibility for emergency responders, which can be expected to improve safety outcomes.	• Transport industry • Emergency responders
5.4.3	Requirements for the preparation of transport documents, including emergency information have been relocated to Chapter 5.4. A new requirement to carry 'Instructions in Writing' has been introduced.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Provides drivers a quick response guide on actions to take in an emergency, which can be expected to improve safety outcomes.	• Transport industry

For further detail, see Working Group Discussion Paper #6 – Consignment procedures for dangerous goods transport

Questions for consultation

Q21. If the requirement for placards to be reflective is retained, what do you believe would be an appropriate transition time for compliance?

Q22. Are there any additional impacts/benefits from the removal of EIPs from IBCs that have not been considered?

Q23. What are the additional costs associated with the requirement to carry 'Instructions in Writing?

Q24. Do you have any comments or concerns with any of the changes to Part 5 of the Code?

5.9 Part 6 – Design and construction of containment systems

5.9.1 Overview

The Code currently does not address tanks that do not meet the definition of a tank vehicle or an UN-conforming portable tank. This includes tube-vehicles, which are increasingly important for a growing hydrogen transport industry. This leaves significant gaps in coverage.

In addition to tanks designed according to AS 2809, the draft Code would recognise tanks designed according to ADR, providing a wider range of standards for the design, construction, and use of these tanks. This will provide more flexibility for tank designers and users, especially for the transport of substances not properly addressed by AS 2809.

As part of this, provisions for pressure receptacles for the transport of gases and chemicals under pressure have undergone significant review. The draft Code provides greater detail on the provisions for pressure receptacles designed according to standards other than those specified in the UN MR. Coupled with the administrative controls in Chapter 1.8, these provisions provide a clear link between design and item registration requirements under Work Health Safety legislation and the approval requirements of the Code.

The design and construction requirements for containment systems that are derived from the UN MR remain unchanged. This includes packagings, IBCs, and UN-conforming portable tanks and MEGCs.

Finally, the draft Code separates out requirements that apply to the containment system/tank for the dangerous goods (addressed in Part 6), and the vehicle that transports the tank (addressed in Part 9). These perform different functions, and it is appropriate that they are treated separately. This will reduce potential confusion and support duty holders to more easily identify requirements relevant to them.

5.9.1.1 Key changes in requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
6.2	Greater detail has been included in the draft Code on pressure receptacles that don't conform to UN pressure receptacle requirements.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Additional flexibility in the use of tank vehicles, bulk containers, and pressure receptacles most appropriate for the task would be expected to support greater industry efficiency and productivity. The draft provisions would also support greater clarity in the design, construction, and use of different vehicles and containers, supporting greater consistency in practice and improved safety outcomes across Australia.	• Transport industry
6.8	Chapter 6.8 has been included and details the general requirements for tanks used for the transport of dangerous goods, now permitting the use of tanks designed according to ADR.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry
6.8	The draft Code will include provisions for the design, construction and use of	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change	As above.	• Hydrogen industry

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
	tube-vehicles, which are not properly recognised in the current Code.	☒ Guidance/clarification ☐ Unknown		
6.10	The design, construction and operation of vacuum operated waste tanks has been relocated from an ADR-based CAP determination into Chapter 6.10 of the Draft Code.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Waste industry
6.15	Design and construction requirements for segregation devices will be contained in Part 6 of the Draft Code.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Greater clarity is provided to duty holders on segregation device design and construction requirements. Clearer provisions are also provided on the appropriate selection of packagings that are used for segregation purposes. This would support more effective use of segregation devices, which can be expected to improve safety outcomes and reduce operational inefficiencies.	• Designers and manufacturers of segregation devices

For further details, see Working Group Discussion Paper #11 - Draft tank and vehicle provisions

Questions for consultation

Q25. If you design, manufacture or use tanks and tank vehicles, do you foresee using the ADR-style tank designs in your operations?

Q26. If you use segregation devices in your transport operations, do you consider that the updated requirements for segregation devices, or packagings used for segregation will affect your operations?

Q27. If yes, please provide information

Q28. Do you have any comments or concerns with any of the changes to Part 6 of the Code?

5.10 Part 7 - Provisions concerning the conditions of carriage, loading, unloading and handling

5.10.1 Provisions for carriage

Australian specific provisions concerning stowage, segregation and load restraints have not been comprehensively reviewed since 2007, resulting in many of these requirements now being out of date. By addressing gaps and improving alignment of these requirements with other modes, Part 7 of the draft Code supports objectives for the safe and smooth transport of dangerous goods by land. Specific changes relate to vehicles that can transport specific packages, as well as segregation and loading requirements.

5.10.1.1 General provisions

Chapter 7.1 of the draft Code contains the general provisions applicable to carriage, loading, unloading and handling. Many of these provisions are contained in the current Code but are sparse and difficult to locate for duty holders.

In the draft Code, existing provisions have been updated as relevant and grouped together. The following examples provide a brief overview and identifies any significant differences between the current provisions and those in the draft Code. Section 7.1.7 contains several new special provisions applicable to the carriage of self-reactive substances of Class 4.1, organic peroxides of Class 5.2 and substances stabilised by temperature control (other than self-reactive substances and organic peroxides). These are essentially equivalent to Section 7.1.5 of the current Code.

5.10.1.1.1 Examples of changes to general provisions

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
7.1.7.4.	The following new requirements have been introduced for carriage under temperature control: - The carrier of substances under temperature control is to be provided with a list of the suppliers of coolant available enroute. - An adequate quantity of non-flammable coolant (e.g. liquid nitrogen or solid carbon dioxide), allowing a reasonable margin for delay, is carrier or a means of replenishment is assured.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Provides clarity of requirements to duty holders, which can be expected to improve compliance and safety outcomes to duty holders and the community – a transporter should have addressed it in their TERP.	• Transport industry • Community
7.1.7.4.8	Introduces requirements for ventilation and permitted vehicles for carriage of self-reactive substances of Class 4.1, organic peroxides of Class 5.2. and substances stabilised by temperature control (other than self-reactive substances and organic peroxides) contained in protective packagings filled with a coolant.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Improves safety for loader, unloaders, and the community.	• Transport industry

For further details, see Working Group Discussion Paper 10 - Special provisions

5.10.1.2 Provisions concerning the carriage of packages

- The provisions for carriage in packages applicable to a given substance are identified in column 16 of the DGL. The draft Code restricts carriage to closed or sheeted vehicles (i.e. a curtain sided vehicle with a solid roof structure supported by a headboard and tailboard), where transport in an open vehicle is considered to present an unacceptable risk. The requirement for closed vehicles as opposed to closed or sheeted vehicles, ensures controls are proportionate to the risk and do not unnecessarily impede transport. While there may some exceptions, the requirement for closed vehicles (V12, V13 or V15) as opposed to closed or sheeted vehicles (V1, V10 or V11), has been generally applied on the following basis:
- Closed vehicles or sheeted vehicles, permitted for solids, and for liquids meeting the following:
  - Liquids not permitted in IBCs;

– Class 4.3 (where the risk is from exposure to water); and

– Organic peroxide Type F.

- Closed vehicles for IBCs containing liquids and IBCs containing UN 3555 Cobalt dihydroxide.

Existing provisions V8, V14 and V15 have been restructured in the draft Code to support user navigation, promote transparency of requirements and reduce inadvertent non-compliance. No additional costs to industry are anticipated with these provisions.

5.10.1.2.1 Examples of changes to provisions concerning the carriage of packages

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
V12	V12 has been introduced and requires that the carriage of PG III liquids (e.g. jet fuel, kerosene and resin solution) must be carried in closed vehicles or containers when these substances are transported in composite IBCs with flexible plastic inner receptacles.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	This provision can be expected to improve safety outcomes for duty holders and the community by providing controls that are proportionate to the risk and that do not unnecessarily impede transport.	• Transport industry • Community
V13	V13 has been introduced and requires that UN 1361 Carbon and UN 2213 Paraformaldehyde, be carried in closed vehicles, wagons or containers when packed in bags of 5H1, 5L1 or 5M1.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry • Community
V10	Replaces the use of IBC special packing Provision B1 of the current Code. In the current Code, B1 requires IBCs containing applicable substances to be transported in a closed vehicle. V10 extends the permitted vehicle type to include sheeted vehicles.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Provides flexibility to sheeted vehicles as an alternative to closed vehicles for the relevant substances. The provision would continue to safeguard the safety of the community, without unnecessarily impeding transport.	• Transport industry
V11	Replaces the use of IBC special packing Provision B2 of the current Code. In the current Code, B2 requires IBCs containing applicable substances to be transported in a closed vehicle. V11 extends the permitted vehicle type to include sheeted vehicles.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry

For further details, see Working Group Discussion Paper #9 - Part 4 Packing & Tank Provisions and Working Group Discussion Paper 10 - Special provisions

Questions for consultation

For all V codes proposed:

Q29. Are there any implications on your operations?

- If so, please indicate the applicable V code(s) and the associated impact(s).

Q30. Are there any additional or reduced costs associated with the proposed new or amended provisions?

- If so, please indicate the applicable V code(s) and the associated increase or reduction in costs.

5.10.1.3 Provisions concerning carriage in bulk

Provisions concerning carriage in bulk in the draft Code largely replicate the provisions in Chapter 4.3 of the current Code. There has been some minor restructuring of this content in the draft Code to improve the flow and readability.

5.10.1.3.1 Examples of changes to provisions concerning carriage in bulk

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
7.3.3	Provides additional provisions applicable to the carriage of certain substances. These provisions replace the requirement for Competent Authority approval with special provisions that explicitly authorise the carriage in bulk for specific substances. The authorisation for a specific substance is indicated by a 'VC' code in column 17 of the dangerous goods list. Where additional provisions apply, these are identified by the code 'AP' in column 17.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Removes the need for Competent Authority intervention. This would be expected to reduce unnecessary time delays and burden on all parties. It would also be expected to reduce the potential for inconsistencies in the conditions and restrictions being imposed across the jurisdictions.	• Transport industry • Competent Authorities

For further details, see Working Group Discussion Paper 10 - Special provisions

5.10.1.4. Provisions concerning carriage in tanks

Chapter 7.4 of the draft Code provides provisions for transport in tanks. This is a relatively brief chapter, which clarifies that only substances with a tank instruction may be transported in tanks. Unlike in the current Code, when a portable tank or a tank vehicle may be used are separate. This chapter also provides for when certain vehicle types (FL or AT) vehicles are required, which is a new requirement and provides more precision than the current Code. The current code requires a tank vehicle to comply with the AS 2809 but does not provide additional information. Including this information in the code will substantially improve transparency.

For further details, see Working Group Discussion Paper 7 - Vehicles for dangerous goods transport.

5.10.2 Provisions concerning loading, unloading and handling

Provisions concerning loading, unloading and handling of dangerous goods, including those related to mixed load prohibitions, stowage, segregation rules, load restraint and other precautions, are scattered throughout the current Code. Consequently, it is difficult for duty holders to locate the requirements that apply to their transport scenario. Chapter 7.5 of the draft Code collates many existing provisions to improve navigability for

duty holders. The examples in the tables below highlight the new provisions that are perceived to have the most significant impacts.

5.10.2.1 CV codes

Section 7.5.11 of the draft Code specifies additional provisions applicable to the loading, unloading, or handling of certain classes of specific goods. These provisions are in addition to the requirements in Sections 7.5.1 to 7.5.10 of the Code and are identified in column 18 of the DGL with a 'CV' code when assigned to a given substance.

5.10.2.1.1 Examples of CV codes

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
CV9	Specifies that packages of Class 2 other than UN Nos. 3537, 3538 and 3539 shall not be thrown or subjected to impact. These receptacles are required to be stowed in the vehicle, wagons or container that they cannot overturn or fall.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Designed to ensure these goods are transported safely.	• Transport industry • The community • First responders
CV12	Assigned to UN Nos. 1950, 2037, 3478, 3479, 3500, 3501, 3502, 3503, 3504 and 3505. Specifies that when pallets loaded with articles are stacked, each tier of pallets shall be evenly distributed over the lower tier, if necessary, by the interposition of a material of adequate strength.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Prevents collapsing of stacked goods, which can be expected to increase safety outcomes for duty holders, the community, and emergency responders.	• Transport industry • The community • First responders
CV13	Assigned to Class 6.2 (other than UN 3373), liquids with a primary or secondary hazard of 6.1 and UN Nos. 1811, 2212, 2315, 2590, 2923, 3077, 3082, 3151, 3152, 3245, 3432 and 3537 to 3548. Specifies actions to be taken after a spill or leak. Including examination for contamination, cleaning, disinfecting and decontamination. Replicates 7.1.7.2 of the current Code.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	The relocation of this requirement to Part 7 provides transparency of the requirement, reducing inadvertent non-compliance.	• Transport industry • The community • First responders
CV23	Requires substances of Class 4.3 to be protected from contact with water. Replicates 7.1.11 of the current Code.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	As above.	• Transport industry • The community • First responders
CV15	Imposes limits on the quantity of organic peroxides of Class 5.2 and self-reactive substances of Class 4.1 of Types B, C, D, E or F and of polymerizing substances of Class 4.1 in a load.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Reduces the severity of the consequences to people, property and environment in the event of a transport incident.	• Transport industry • The community • First responders

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
CV20	Assigned to specific organic peroxides of Class 5.2 and some self-reactive substances of Class 4.1. Provides some concessions for these substances, provided there is no more than 10kg in the load.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Reduces regulatory burden for loads containing a very small amount of these substances	• Transport industry
CV26	Assigned to UN 3245 and to all Class 6.2, other than UN numbers 3291 and 3373. Requires wooden parts of a vehicle, wagon or container which have come into contact with these substances to be removed and burnt.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Prevents cross contamination from infectious substances, which can be expected to improve safety outcomes.	• Transport industry • Workers
CV28	Assigned to substances with a primary or subsidiary hazard of 6.1 or 6.2 and to UN numbers 2212, 2315, 2590, 3151, 3152, 3245 and 3432. Requires segregation from foodstuffs and other articles of consumption, and animal feeds.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Removes the current blanket requirement for segregation from food with a risk-based approach, which can be expected to reduce operational inefficiencies.	• Transport industry
CV36	Assigned to most Class 2 substances. Specifies a preference for transport on open or ventilated vehicles. Specifies the precautions to be taken when transport on open or ventilated is not feasible and a closed vehicles is used. Replaces 7.1.4.5 of the current Code.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Duty holders would be provided with requirements that are clearer, achievable and measurable, which can be expected to improve compliance.	• Transport industry • Loaders • Unloaders

For further details, see Working Group Discussion Paper 10 - Special provisions

Questions for consultation

For all CV codes proposed:

Q31. Are there any implications on your operations?

– If so, please indicate the applicable CV code(s) and the associated impact(s).

Q32. Are there any additional or reduced costs associated with the proposed new or amended provisions?

– If so, please indicate the applicable CV code(s) and the associated increase or reduction in costs.

5.10.2.2 Segregation

Guidance provided in the current Code regarding the segregation of goods is inadequate and much of the information provided is outdated and incorrect, creating significant burden for duty holders. In the draft Code, information and guidance regarding the segregation of goods is provided in a simplified and flexible manner, allowing duty holders to easily find and apply requirements.

5.10.2.2.1 Examples of changes to segregation requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
7.5.2	The table of incompatible classes have been relocated from Part 9 of the Code to 7.5.2. The notes to the table have been simplified and rationalised.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Improves navigation and readability. Updates information originally sourced from the IMDG Code to the current IMDG Code, addressing intermodal inefficiencies. Table C will assist in the application of the segregation requirements.	• Transport industry
7.5.2	The incompatibilities in the table of examples of particular incompatible dangerous goods have been updated to align with the current IMDG Code. To assist in the application, a list of UN numbers for the relevant chemical groupings has been added to Chapter 3.2, as Table C.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry
7.5.4	Section 7.5.4 permits segregation to be achieved by the use of partitions, non-incompatible goods or distance.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Provides flexibility in the methods used to achieve segregation which can be expected to reduce the burden placed on the transport industry.	• Transport industry

For further details, see Working Group Discussion Paper 10 - Special provisions

Questions for consultation

Q33. Do you agree with the proposal to allow segregation to be achieved using partitions?

Q34. If the proposal for partitions is retained, should they be permitted only for non-liquid dangerous goods?

5.10.2.3 Stowage

Section 7.5.7 of the draft Code deals primarily with load restraint, aiming to ensure correct stowage and the protection of the dangerous goods. Section 7.5.7 replicates most of the requirements of Part 8 of the current Code, with the primary difference being that the draft Code does not specify the use of gates or other specific load restraint methods. These requirements currently create duplication and conflict with load restraint legislation and introduce significant safety risks associated with manual handling.

5.10.2.3.1 Examples of changes to stowage requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
7.5.7	The load restraint requirements concentrate on the correct stowage and protection of the dangerous goods, e.g. upright, restrained to prevent movement that could change the	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Removing specific load restraint methods removes current duplication and conflict in requirements with load restraint	• Transport industry • Workers

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
	orientation of the packages or cause them to be damaged. Requirements to protect the dangerous goods from other goods in the load are also specified.		legislation. Removing the mandatory requirement for gates can be expected to significantly reduce costs and injuries associated with their use. A set of gates for a vehicle can weigh more than 300kg.	
7.5.7	Requirements relating to specific methods for restraining the loads to prevent them being dislodged from the vehicle or shifting so as to cause the vehicle to become unstable, have been omitted. These have been replaced with a requirement to comply with the performance standards in the Heavy Vehicle (Mass, Dimension and Loading) National Regulation. This effectively means that gates are no longer a mandatory requirement.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry • Workers

For further details, see Working Group Discussion Paper 10 - Special provisions

Questions for consultation

Q35. Do you agree with separating stowage and restraint requirements for protecting dangerous goods from the load restraint performance standards that apply to all vehicles (vehicle stability and loss of load)?

Q36. If the load restraint performance standards are included in the Code, what measures should be in place to ensure they remain current with the relevant legislation)?

5.11 Part 8 – Requirements for vehicle crews, equipment, operation and documentation

5.11.1 Overview

Part 8 of the draft Code contains an extensive set of requirements for drivers and operators of dangerous goods vehicles. As the draft Code follows the structure of ADR, the existing structure of Parts 7 to 13 is no longer relevant. So, many requirements in these parts that need to be retained have been moved to Part 8 where they are not addressed in ADR.

This chapter is focused on provisions for vehicle crews and, to a lesser extent, transport companies. It details:

- Equipment for the vehicle, including safety equipment and equipment used for the transfer of dangerous goods.
- Information on the training of drivers, both generally and the mandated training for licensed drivers.
- Operational provisions for vehicle crews, including parking provisions and for certain types of dangerous goods. For example, S1 is targeted at transporters of lass 1 explosives.

- Information on route selection for dangerous goods vehicles.
- Provisions relating to the transfer of dangerous goods.

5.11.1.1 Key changes in requirements

Ref.	Draft Change	Regulatory burden	Benefits	Most impacted
8.1.4	Specifies fire-fighting equipment that must be carried. Requirements have been simplified, are based on the size of the transport unit, and include clearer provisions relating to equipment substitution.	☒ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☐ Guidance/clarification ☐ Unknown	Simplified requirements would aid understanding of requirements and reduce risk of inadvertent non-compliance. Providing clearer provisions relating to equipment substitution is also expected to reduce the number of wheel end fires that result in complete vehicle loss as more appropriate extinguishing agents would be carried.	• Transport industry
8.1.5	Specifies emergency equipment that must be carried onboard a vehicle. Requirements have been simplified. The provision includes replacement of the requirement for a self-contained breathing apparatus with a filtering escape mask for substances other than those that present a significant inhalation toxicity hazard when transported in large quantities, e.g., Division 2.3 toxic gases such as coal gas, chlorine, and carbon monoxide.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	Simplified list of requirements would reduce the potential for inadvertent non-compliance. By requiring that duty holders carry additional equipment, they would be equipped to handle a greater range of scenarios, improving safety outcomes. SCBAs are very expensive to purchase and maintain. Removing the requirement to carry this piece of equipment would substantially reduce costs for most transporters of corrosives, and many transporters of other toxic substances	• Transport industry
8.2.1	The training requirements for all dangerous goods vehicle crews has been expanded on with more detail about the expectations required.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Duty holders are provided with transparent requirements that are easily found in the Code. This can be expected to increase compliance and safety outcomes.	• Transport industry
8.2.2	The requirements for training for licensed drivers in Section 8.2.2 of the draft Code are taken from the dangerous goods driver mandatory assessment instrument to improve transparency.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry
8.6	Chapter 8.6 is based on the MSI and Chapter 13 of ADG 7, outlining the route restrictions to be considered when transporting dangerous goods.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Chapter 8.6 is informative, to ensure that drivers are familiar with transport restrictions. This information is currently challenging to find, as it is implemented individually by States and Territories.	• Transport industry

Ref.	Draft Change	Regulatory burden	Benefits	Most impacted
8.7.1	Details detailed transfer provisions to apply when the transfer of dangerous goods takes place in a public place, where it may have off-site impacts or in a location with a residential purpose.	☐ Increase in regulatory burden ☒ Decrease in regulatory burden ☐ Structural change ☐ Guidance/clarification ☐ Unknown	Transfer that takes place in omitted locations would be subject to controls under WHS legislation. This is a more appropriate regulatory regime for transfer in facilities.	• Transport industry • Recipients of dangerous goods
8.7.2	Transfer provisions require a transporter and site occupant to work together to ensure the dangerous goods transfer is undertaken safely.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☐ Structural change ☒ Guidance/clarification ☐ Unknown	The provisions clarify that safe transfer is a shared obligation. Ensuring that the carrier and site occupant have communicated, increasing safety outcomes. The changes are outcomes-focused, rather than prescriptive.	• Transport industry • Recipients of dangerous goods

For further details, see Working Group Discussion Paper #12 – Requirements for vehicle crews, equipment, operation and documentation

Questions for consultation

For all changes proposed in Part 8:

Q37. Do you have any concerns or comments regarding the proposed changes.

Q38. If so, please indicate the applicable change and the associated commentary.

5.12 Part 9 - Requirements concerning construction and approval of vehicles

5.12.1 Overview

The draft Code has moved requirements applying to vehicles into Part 9, providing much more information for users of vehicles. Part 9 draws on both the requirements in ADR and the requirements for vehicles set out in AS 2809.1. One major issue identified from the comprehensive review of the Code is that many key requirements for vehicle operators, in particular for tank vehicles, are left entirely to AS 2809.1. This includes inspection and maintenance provisions. The lack of transparency of these provisions makes them difficult to apply and enforce. The draft Code will continue to refer to AS 2809.1 for technical requirements for tank vehicles, while providing a suitable level of information for vehicle operators to follow in their operations.

Additionally, the current Code does not effectively manage vehicles transporting tanks other than those that strictly comply with AS 2809. This requires management through other processes such as competent authority approvals or exemptions. As with Part 6, the separation of tanks and vehicles enables Part 9 to focus on the requirements for vehicles. This applies regardless of the containment system used for dangerous goods. So, a vehicle that functions as a tank vehicle will be expected to conform to the key requirements of this part of the Code and AS 2809.1. This should provide flexibility to the transport industry, as smaller vehicles can be constructed using off-the-shelf containment such as steel IBCs.

Transitional periods will be considered and developed for vehicles that are in use at the commencement of the draft Code to mitigate the impact of new regulatory requirements.

Unresolved issues relating to explosives of Class 1 are discussed in Section 5.13.

5.12.1.1 Key changes in requirements

Ref.	Draft change	Regulatory burden	Benefits	Most impacted
9.0	Separation has been created between tanks and the vehicles that carry them.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	Greater clarity about the design, construction, use and maintenance of vehicles that transport dangerous goods. The provision also enables the incorporation of ADR-style tanks into the Code, providing duty holders with greater flexibility in the vehicles used in the dangerous goods transportation task. Together, these changes would be expected to increase compliance and improve safety outcomes.	• Transport industry • Vehicle manufacturers
9.4	Chapter 9.4 outlines the additional requirements concerning the construction of the bodies of complete or completed vehicles intended for the carriage of dangerous goods in packages. This chapter includes some additional provisions that apply when packages are used as tanks.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry
9.5	Chapter 9.5 outlines additional requirements concerning the construction of the bodies of complete or completed vehicles intended for the carriage of dangerous goods in bulk.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry
9.6	Chapter 9.6 includes requirements for vehicles transporting dangerous goods that require temperature control.	☐ Increase in regulatory burden ☐ Decrease in regulatory burden ☒ Structural change ☒ Guidance/clarification ☐ Unknown	As above.	• Transport industry

For further details, see Working Group Discussion Paper #11 - Draft tank and vehicle provisions

Questions for consultation

For all changes proposed:

Q39. Do you have any concerns regarding the proposed changes for vehicles?

Q40. If so, please indicate the applicable change and the associated commentary.

5.13 Issues requiring further detailed consultation

To date, stakeholder engagement on the draft Code has revealed several issues which will be addressed on a case-by-case basis during the Decision Regulatory Impact Statement (D-RIS) development phase. During the forthcoming C-RIS consultation phase, stakeholder feedback will be gathered on these issues to assist with their resolution.

5.13.1 Regulation of diesel as dangerous goods for transport

The potential change in the regulation of diesel is a complex matter and may not be able to be implemented when the draft Code is released. This section explores these issues and proposes an outcome that the NTC consider to be well-balanced. The NTC will use the information gathered in response to this in determining how best to proceed.

Any regulation proposed by the NTC would relate to transport only. The regulation of diesel in storage and handling situations is a matter for the relevant regulation. Generally, diesel is considered under the GHS to be a Category 4 flammable liquid.

5.13.1.1. Earlier consultation

In earlier consultation, the NTC undertook a survey regarding the potential regulation of diesel. The majority of respondents stated that they did not support diesel regulation, however the NTC has also reviewed the comments provided with the survey to identify where the concerns lie.

There was a common set of concerns that regulating diesel would risk overregulation, including:

- By requiring licensing for transporters of small quantities of diesel.
- Impacts on businesses undertaking supply of diesel for their own operations, such as on-site equipment and machinery.
- Impacts on farmers and the agricultural industry.

However, we also heard support for proceeding further on these changes, with respondents noting that diesel transport is not free from risk, and that it should be subjected to regulation. Any regulation of diesel that the NTC proposes must consider these competing priorities.

5.13.1.2. Overview of issue

Diesel is completely exempted from dangerous goods regulation under the current Code, despite being included in the dangerous goods list under UN 1202. Diesel is an environmentally hazardous substance meeting the classification criteria for UN 3082. Under the 7th edition of the Code, UN 3082 is fully regulated dangerous goods when transported in a tank. The draft Code will continue this, and additionally proposes to require marking and labelling, and approved packaging for UN 3082 in packages greater than 30 L capacity. This will not affect diesel transported in fuel tanks for a vehicle's engine, which will continue to be exempted as with other fuels in the fuel system.

The NTC considers that it is not feasible to continue this exemption in its current form, though this does not mean that diesel should be treated in the same manner as petrol. Diesel has a much higher flash point than petrol, and so the risk of ignition is far lower, but this risk is non-zero. Further, there are other risks that arise in diesel transport, such as static electricity hazards during transfer, and the risks to the environment from leaks and spills that the dangerous goods regulations are well-placed to address.

While diesel meets the classification criteria for Class 9, under both the UN MR and ADR it is treated as a Class 3 flammable liquid for marking and labelling purposes, as one of the primary hazards arising from diesel transport is the risk of fire. Additionally, under the GHS, diesel is classified as a Category 4 flammable liquid.

The NTC is considering two primary proposals for the regulation of diesel:

1. A low volume threshold, below which diesel would continue to be exempted. This would mean that anyone transporting diesel in a quantity below this threshold would not be subject to any significant change in dangerous goods transport regulation.
2. When transported above this threshold, a set of concessions would apply to support safe transport of diesel.
    a. Provisions for diesel when transported in packages such as drums or IBCs; and
    b. Provisions for diesel when transported in a tank, without any other dangerous goods.

When diesel is transported along with petrol (or other Class 3 liquids), it would be subject to full regulation. This is fundamentally the same situation as at present, though it would formally require diesel to be listed on transport documents under UN 1202.

One critical concern the NTC holds is the use of large tanks primarily designed for static storage on vehicles. A tank that is not designed for the dynamic loads encountered in transport is not suitable to be used in a transport scenario.

5.13.1.3. Low volume threshold

As noted, the low volume threshold would provide a comprehensive regulatory concession for diesel. This would mean that transporters of diesel for their own use, or for activities such as refuelling equipment on a worksite or farm would be largely exempted from the dangerous goods regulations. This would treat this type of diesel transport in a similar manner to the exemptions for personal use, or by businesses that are undertaking transport ancillary to their main activities.

The NTC proposes that this threshold should be set at 3,000 L, as this is the maximum permitted volume for an IBC. The NTC would consider two additional requirements to support this.

1. The tank or package is clearly marked as containing diesel; and
2. The tank or package is of robust construction to mitigate risks in transport.

5.13.1.4. Transport above the low volume threshold

We consider that when transporting diesel above this threshold, the risks grow to a level where transport must be subject to greater controls. As already noted, any quantity of environmentally hazardous substance that is transported in tanks (regardless of the capacity) is fully regulated as dangerous goods for transport, and require such controls as placarding, licensing and the use of approved tanks. This means that the regulation of diesel is already significantly out of step when compared to substances presenting a comparable hazard.

Where a vehicle is also used to transport flammable liquids (such as petrol), the application of these provisions would be relatively straightforward, and would likely only be a small increase in regulation. However, this change would represent a more significant increase in regulation for some transporters of diesel. This does not mean that diesel would be treated as if it were petrol, there is still scope for a more limited set of compliance provisions when only diesel is being transported. These might include:

- Placarding of vehicles to provide improved hazard communication;
- Requirements for emergency planning, including an emergency response plan;
- Vehicles required to carry emergency equipment and personal protective equipment (PPE) for the vehicle crew
- Inspection and maintenance of tank vehicles.

This would recognise that diesel does not present the same risk in transport as petrol, while also noting that the transport of diesel is not risk-free.

5.13.1.5. Implementation

Due to the scale of this change, we consider that these changes would need to be introduced with a long enough timeframe to allow transporters of diesel to adjust. As noted, the NTC does not have a firm timeline

for implementation of these requirements, though our preference would be for this to be included in the draft Code if possible.

Our preferred approach would be for the provisions to be introduced as a part of the draft Code, with suitable transition periods to enable transport to continue without interruption. We consider this the most transparent approach, as it allows a transporter to identify the changes and prepare for them, while not disrupting current transport processes.

Table 10 Options for consideration of regulation of diesel as a dangerous good

Option	Description
Option 1	Keep the current requirements as written.
Option 2 – Proposal 1	Introduce a low volume threshold to provide an exemption for lower volumes of diesel.
Option 2 – Proposal 2	Introduce a lower level of regulation (compared to petrol) for diesel transporters transporting more than the low volume threshold.

Questions for consultation

NOTE: As discussed above, this will be subjected to further investigation. Responses to these questions will be used to determine the appropriate course of action for this work.

For all changes proposed:

Q41. If you transport diesel for your own use or supply, what is the maximum quantity you transport at one time?

- If you typically transport more than 3,000 L of diesel at one time, please advise what volumes are typical, and what purpose you transport it for?

Q42. If you are a fuel transport company, do you transport loads of diesel only (without Class 3 flammable liquids) in tanks or tank vehicles that do not have a dangerous goods design approval issued by a Competent Authority?

- If you use tanks without an approval, please advise why, and the type of tanks you use?

Q43. Please advise if you support the following requirements for diesel transport for more than the low volume threshold (3,000 L in this proposal)?

- Placarding of vehicles to provide hazard communication
- Emergency preparation, including developing a plan for incidents
- Fire extinguishers and emergency response equipment
- Transport documents and carrying emergency information
- Are there any other controls in transport you consider would be necessary?

5.13.2. Mixed load EIPs for refined petroleum products

5.13.2.1. Overview of issue

WP 6 outlined the issues with Australia's continued use of UN 1270 for multi compartment tank-vehicles transporting mixed load of refined petroleum products. The use of UN 1270 was discontinued internationally some time before 2001 but has been retained in Australia 'specifically because of the continued use of tankers carrying mixed loads of petroleum fuels' (see 3.2.5.4.1 of ADG 7.8). The current provisions for the use of UN 1270 are inconsistent and provide conflicting information on when it can be used. The proper shipping name for UN1270 is PETROLEUM FUELS [AUST.]. The proper shipping name and the wording of

3.2.5.4.2 indicate that UN1270 is specifically intended for fuels. The list of products able to use UN 1270 is headed petroleum-based products, indicating that is can be used for petroleum products that are not fuels.

WP 6 was accompanied by a draft of Part 5 of the Code which contained new provisions for EIPs for mixed loads, aimed at replacing the use of UN1270 and removing the ambiguity. The draft requirements were specified in 5.3.2.1.3, as follows:

> *5.3.2.1.3 For tank-vehicles, tank-wagons, transport units or wagons having one or more tanks carrying substances with UN Nos. 1202, 1203 or 1223, or aviation fuel classified under UN Nos. 1268 or 1863, but no other dangerous substance, the emergency information panel prescribed in 5.3.2.1.1 and 5.3.2.1.2 shall bear the emergency action code and the UN number and proper shipping name prescribed for the substance with the lowest flashpoint.*

As part of the consultation on 5.3.2.1.3, stakeholders were asked which of the following three options they preferred.

- **Option 1** - Continue the use of UN 1270 as per the current Code. Potentially expanding the list in Table 3.1 to include other refined petroleum products classified as UN 3082 that are category 4 flammable liquids.
- **Option 2** - Follow the requirements of 5.3.2.1.3 as currently drafted but expand the list of UN numbers to include other refined petroleum products of Class 3.
- **Option 3** - Follow the requirements of 5.3.2.1.3 as currently drafted but expand the list of UN numbers to include other refined petroleum products of Class 3 and category 4 flammable liquids classified as UN 3082.

The responses received were mixed but most favoured Option 3.

Following further targeted consultation 5.3.2.1.3 has now been redrafted as follows:

> *5.3.2.1.3 For multi compartment tank-vehicles, multi compartment tank-wagons or transport units or wagons having more than one tank carrying Class 3 Flammable liquids, with or without one or more combustible liquids with a flashpoint >60° C but < 93° C and meeting the criteria for UN 3082, with no other dangerous substance, the emergency information panel prescribed in 5.3.2.1.1 and 5.3.2.1.2 shall bear the emergency action Code and the UN number, proper shipping name and placard(s) prescribed for the substance with the lowest flash-point. The Emergency Action Code for the load shall be the highest calculated for all substances in the load.*

The redrafted provision does not specify a list of UN numbers and removes the limitation to refined petroleum products. Its use is however limited to flammable substances of Class 3 or GHS Category 4. It's believed that the range of flammable substances coloaded on a multi compartment tank-vehicle is limited by industry needs. Removing the limitation to specified UN numbers and petroleum products, provides greater flexibility. It also ensures better communication of the hazards to emergency services. At present, where flammable substances are co-loaded, but the load includes a UN number that is not in the specified list or is not a refined petroleum product, the vehicle must be placarded using a MULTI LOAD EIP.

To help us achieve the outcome that works best for industry without introducing new risks we are seeking your feedback on the following options.

Table 11 Options for consideration for mixed load EIPs for refined petroleum product

Option	Description
Option 1	Retain the Provision 5.3.2.1.3 as redrafted above.
Option 2	Limit the use of 5.3.2.1.3 to refined petroleum products of Class 3 and GHS Category 4 flammable liquids.

Questions for consultation

Q44. Which of the above two options do you prefer?

Q45. Are you aware of any unintended consequences if Option 1 is adopted?

5.13.3. Incorporation of Class 1 explosives into the Code

5.13.3.1. Overview of issue

The inclusion of substances and articles of Class 1 into the Code is a complex task, and some issues relating to this remain outstanding. These include:

- How to appropriately reference duties that are only described within the AEC. It is essential that where explosives legislation refers to duties contained in the AEC that the draft Code properly includes this so that explosives legislation remains functional.
- Some updates are necessary to incorporate some provisions that are included in the AEC that are not addressed within ADR. This includes carry boxes for explosives, and requirements for vehicles transporting higher risk loads of explosives, such as fire screens.
- There are some provisions that have been adopted into the UN MR and ADR since the AEC was last updated, such as permitting limited quantities for a small number of Class 1 entries in the DGL.

The draft Code contains a number of provisions that relate to the transport of Class 1 explosives. In addition to seeking comment on these proposed changes, we will continue to work with the explosives industry and regulators to ensure that any additional provisions that need to be developed are properly consulted on.

5.13.3.2. Tanks and IBCs used for transport of Class 1 explosives

The NTC is proposing to remove the tank instructions for Class 1 explosives from the Code. There are only two DGL entries that carry a tank instruction, and we are not aware of these being transported in tanks. These are:

- UN 0331 – EXPLOSIVE, BLASTING, TYPE B; and
- UN 0332 – EXPLOSIVE, BLASTING, TYPE E.

Additionally, although we have not removed the IBC instructions from any Class 1 explosives, we note that only the following five dangerous goods list entries carry IBC instructions:

- UN 0082 – EXPLOSIVE, BLASTING, TYPE B;
- UN 0222 – AMMONIUM NITRATE;
- UN 0241 – EXPLOSIVE, BLASTING, TYPE E;
- UN 0331 – EXPLOSIVE, BLASTING, TYPE B; and
- UN 0332 – EXPLOSIVE, BLASTING, TYPE E.

The NTC is seeking industry and regulator input on the potential removal of these tank and IBC instructions from the DGL. The NTC notes that some jurisdictions regulate the transport of these under explosives regulations. We are not considering altering any instructions that apply to the transport of explosives precursors of Division 5.1, only Class 1.

5.13.3.3. Explosives transport categories

The AEC groups a load of Class 1 explosives into 3 distinct categories. Transporters must follow a process to determine the appropriate Class 1 division for the load overall, and then it is grouped into one of the three categories. To make sure that these categories are distinct in the draft Code, the name of these have been changed to *Explosives Category 1, Explosives Category 2,* or *Explosives Category 3*.

Additionally, the AEC includes the concept of a high security risk load. The explosives working group noted a significant overlap between a high security risk load and an Explosives Category 3 load. Based on this

suggestion, the NTC has applied the requirements for high security risk loads to Explosives Category 3 loads.

Finally, the definitions for combining together divisions, and how to determine the explosives category of a load have been placed into Chapter 1.1, as these concepts apply across the entire Code.

5.13.3.4. Non-transport requirements taken from the AEC

The Code has evolved over time to become a document that is primarily focused on transport matters. This aligns with the division at the UN level into model regulations for transport and the GHS for classification and labelling. Issues not relating to transport, such as labelling for users of chemicals on inner packagings have thus been taken out of the Code, as they are better dealt with under other regulatory frameworks.

However, due to the age of the AEC, it has not benefited from this process. To support the successful incorporation of the AEC into the Code, the NTC is proposing to include some issues that may not be addressed elsewhere. These include some markings on inner packagings and articles such as detonators.

The NTC hopes to transition these out of the Code over time, so that it retains its focus on transport matters. We will work with affected stakeholders in any plan to transition this into another document to ensure that regulatory gaps do not arise now, or during any transition.

Questions for consultation

The NTC is seeking information on the inclusion of Class 1 explosives into the ADG Code:

Q46. If you transport Class 1 explosives, are there any provisions for the transport of these substances or articles in the draft Code that will significantly impact your transport operations?

Q47. If you transport Class 1 explosives, are there any provisions for the transport of these substances or articles in the draft Code that you consider need to be included in the draft Code?

Q48. Do you consider applying the high security risk load requirements to all explosives Category 3 loads appropriate?

Additionally, the NTC is seeking data or information on the following:

Q49. Do you undertake any transport of Class 1 explosives in tanks?

- If yes, please provide information about types and quantities.

Q50. Do you undertake any transport of Class 1 explosives in IBCs?

- If yes, please provide information about types and quantities.

5.13.4. Transitional provisions for the draft Code

5.13.4.1. Overview of issue

The Code has undergone a number of revisions, both major and minor, since the first edition was published in 1980. Generally, when a revision occurs, equipment that is in use at the time of the revision is allowed to continue to be used, provided it is properly maintained. The draft Code will follow a very similar model. However, the Code will adopt a similar approach to ADR, which contains a comprehensive set of transitional provisions, which have been developed over time as ADR has been revised. These provisions are detailed and provide much more certainty for users of that equipment.

It is likely that most of the transitional provisions from ADR will not be relevant for the draft Code. However, where the Code's provisions were originally derived from ADR, they may be relevant. A comprehensive set of transitional provisions will be developed as the draft Code is compiled. This will ensure that existing equipment and practices are properly treated.

The process the NTC proposes to follow for this is:

1. Identify existing practices, or use of equipment that will not conform to the requirements of the draft Code.

2. Determine if a transitional Provision in ADR addresses this and amend or adjust it to reflect this, in line with the principles outlined below.
3. If no relevant transitional Provision exists, draft a new transitional provision.

Where a transitional Provision needs to be written or amended, the NTC proposes to follow these principles:

1. Where existing equipment or related practices will not comply with the new provisions, determine if it is safe to continue using that existing equipment.
2. If it is safe to do so, and the equipment is durable (for example, tanks or vehicles), permit its ongoing use until it is permanently removed from service, provided it is appropriately maintained and remains safe.
3. If the practice isn't safe to permit on an ongoing basis, or the equipment is relatively replaceable (for example placards, or emergency equipment), determine an appropriate transition period during which existing equipment may be used until it is transitioned out of use.

There will need to be some judgement in how these principles are applied. However, new equipment built or put into service after the draft Code comes into effect will need to comply with the new provisions of the Code. The Code will be clear about how this is to be assessed, for example by using build dates.

Questions for consultation

Q51. Do you support the NTC introducing more detailed transitional provisions into the Code?

Q52. Do you have any concerns with the proposed principles for transitional provisions?

5.13.5. Provisions for transport of small loads of dangerous goods

5.13.5.1. Overview of issue

The current ADG Code and model regulations provide a reduced set of compliance requirements for a load that is below a certain threshold, typically known as a placard load. The NTC has heard from stakeholders that the current provisions are often confusing and hard to interpret. Additionally, it is not always clear whether transporters of dangerous goods are permitted to, or prohibited from, placarding a vehicle when it is below this threshold. We also identified that there are some cases where the existing thresholds have not kept pace with changes to the code.

The ADR provides a similar set of concessions for transporters of small loads of dangerous goods. In ADR countries the term "small load" is used for these concessions, as they are more extensive than simply placarding (as is the case in Australia). ADR also clearly marks out these provisions as an optional concession which makes this clear. However, the NTC heard concerns that the method ADR uses for assessing the thresholds for a small load may be too confusing for users of the code. Nonetheless, we've adopted the small load terminology to make clear that these exemptions relate to the size of the load, rather than the placards on the vehicle.

We have therefore developed a restructured set of provisions for transporters of small loads. We've also made it clear that when a transporter has placarded their vehicle, they must comply with all the relevant provisions of the code.

These changes are all consolidated into a single place in the code. Rather than a user needing to figure out what applies to a small load, and what doesn't, it's all listed together in Chapter 1.1 of the new Code. This avoids needing to consult the various parts of the code and the regulations to identify what does and does not apply to the transport.

Transporters of explosives aren't eligible to use these provisions, except when only transporting explosives of division 1.4S. This is in line with current provisions.

5.13.5.2. The new provisions

The new provisions include a few changes from the current “less than placard load” thresholds. These better align with risks in transport, and address some identified issues with the current placarding thresholds.

- We’ve made it clear that when transporting dangerous goods in tanks, bulk containers, MEGCs or tube-vehicles that these provisions do not apply. These loads are always fully regulated loads. This change has enabled us to remove the 500 kg / 500 L category.
- We’ve simplified the way that aggregate quantity of the load is calculated. We’ve made it clearer how to add up the contents of the load to determine what the aggregate quantity is. We’ve also made it clearer that aggregate quantity does not have units. Instead, litres and kilograms are simply added together.
- We’ve updated the way the thresholds and how certain dangerous goods are referenced, to make applying these provisions clearer. For example, we refer to substances by UN number where possible.
- We’ve included an “unlimited” category. This enables us to more clearly communicate when a vehicle is transporting something that does not contribute towards the aggregate quantity for assessing against the small loads thresholds. If these are the only dangerous goods on the vehicle, then the vehicle will never require placarding.

5.13.5.3. Infectious substances

The current code assigns infectious substances to two separate thresholds. Category A infectious substances are assigned a “0” threshold, and therefore always requires placarding. Category B infectious substances have a threshold of “10”. We are seeking input on whether these should be combined into the “0” threshold.

We are aware there may be some situations where the “10” threshold is used. However, it may be more appropriate to provide a specific exemption for these cases, rather than retaining 2 separate thresholds for infectious substances.

5.13.5.4. Transport categories

ADR includes the transport category of each substance in the dangerous goods list. This enables rapid communication and calculation of whether the transport is eligible for the small load concessions. While we are not retaining the calculation method used by ADR, the NTC considers that including transport categories in the dangerous goods list will assist consignors, transporters and drivers to quickly determine whether a load can be transported without placarding and the other controls that go along with a fully regulated load.

Questions for consultation

Q53. After reviewing the draft provisions in 1.1.3.6, please advise:

Q54. Should all infectious substances be subjected to a “0” threshold?

Q55. Are there particular transport scenarios for Category B infectious substances that require a specific concession or exemption?

Q56. Should toxic or corrosive gases be subjected to a lower threshold than “250”?

- Note for comparison, ADR uses a threshold of “20” for these substances.

Q57. Should self-reactive substances and organic peroxides be further divided up?

- Note for comparison, ADR assigns a threshold of “20” for types B & C, and any of these substances that require temperature control to remain stable in transport.

Q58. Should aerosols be treated like other gases, and be subjected to a lower threshold for higher risk aerosols?

- Note for comparison, ADR assigns a threshold value of “20” for toxic and corrosive aerosols, and “333” for flammable aerosols.

Q59. Do you consider that including the transport categories in the dangerous goods list will assist you to determine if a load is a small load or not?

Q60. The specific concessions for transporters of small loads are included in 1.1.3.6.6. Are there any concessions that you think are, or are not, appropriate to include?

Q61. Do you consider there are other substances or articles that should be included in the “0” threshold category? Placarding is mandatory for anything included in this category.

Q62. Do you consider there are other substances or articles that should be included in the “unlimited” threshold category? Placarding is not required for anything included in this category.

For all questions, please provide any supporting information you have to assist us in finalising these provisions.

5.13.6. Licensing for dangerous goods drivers.

5.13.6.1. Overview of issue

Under the current Code, drivers and vehicles are required to be licensed in certain circumstances. As part of implementing the draft Code, the NTC will also be undertaking a review of the training requirements for participants in dangerous goods transport, including drivers. The NTC is seeking feedback to determine appropriate settings for licensing in the future. In the interim, the NTC proposes to keep the current settings largely unchanged.

At present, both a driver and a vehicle require a licence when:

- carrying any dangerous goods in a receptacle with a capacity of more than 500 litres; or
- carrying any receptacle containing more than 500 kilograms of dangerous goods.

These include whenever the vehicle is transporting dangerous goods in tanks or bulk containers with a capacity of greater than 500 L, or with more than 500 kg of dangerous goods in the receptacle. As the threshold is 500 L, it also applies to IBCs. However, a conditional exemption applies from this for up to 3,000 L in IBC capacity on a vehicle, provided no transfer takes place while on the vehicle. These same thresholds apply to both the vehicle and the driver of the vehicle.

An issue that has arisen recently is large power storage systems containing more than 500 kg of lithium batteries. Such systems did not exist when the current provisions were drafted, and there is ambiguity as to whether a cargo transport unit with batteries installed meets the definition of a receptacle. The NTC is aware that there are differences of opinion in whether these require licensing. We will ensure that the future licensing requirements properly address this issue in the future.

5.13.6.2. Driver licensing

In order to obtain a licence, a driver needs to:

- Undertake the 2-day TLILIC0001 training course, and pass the associated mandatory assessment instrument
- Meet the Competent Authority's requirements for a suitable driving history
- Meet the requirements of a commercial driver under the Austroads Assessing Fitness to Drive medical standards.

The NTC is considering options for driver licensing, and the associated training requirements. We expect that drivers of vehicles transporting tanks and bulk containers will continue to require a dangerous goods driver licence. However, additional options include:

1. Licensing required for:
    a. Drivers of vehicles transporting tanks and bulk containers and any packages where transfer occurs while on the vehicle.
    b. Drivers of all vehicles that are required to display placards.
2. Mandatory training, but no licence, required for:
    a. Drivers of vehicles transporting tanks and bulk containers and any packages where transfer occurs while on the vehicle.
    b. Drivers of all vehicles that are required to display placards.

5.13.6.3. Vehicle licensing

As noted, the vehicle licensing requirements are the same as for a driver. While this is simple to explain, it raises questions of appropriateness. While many vehicles that are licensed are tank vehicles, and therefore are subject to design approval, many are not. These vehicles have no special features that mark them out from other vehicles. It is unclear what benefit is derived from requiring these vehicles to be licensed.

The NTC is aware that one jurisdiction (Western Australia) that determined some time ago that it was not appropriate to licence such vehicles. Western Australia (WA) only offers a licence for these vehicles to support transport interstate under the mutual recognition of licences.

The NTC does not consider that licensing all placarded dangerous goods vehicles is a viable option. But one advantage that does arise from the licensing of vehicles other than tank vehicles is the information gained. It provides a Competent Authority with contact information for a significant portion of dangerous goods transporters. Nonetheless, it may be possible to obtain a similar benefit through a notification scheme, without formally making this a licence.

As with driver licensing, it is expected that vehicle licenses will continue to be required for tank vehicles, which also require a design approval under the Code.

However, the NTC is considering the following options for licensing dangerous goods vehicles:

1. Licensing required for:
    a. any vehicle transporting dangerous goods in tanks or bulk containers.
    b. any vehicle where transfer can take place while the containment system (including packages) is mounted on the vehicle.
2. A notification scheme for operators of vehicles that are transporting placard loads of dangerous goods that do not require a licence.

5.13.6.4. Licensing of MPUs and MPU drivers

A quirk of the current regulatory regime is that the driver of an MPU, and the MPU itself, do not require licensing under the dangerous goods regulations. This is due to the exemption from the dangerous goods

regulations provided for MPUs. The driver and MPU may still require licensing under jurisdictional explosives legislation.

However, if the MPU is towing a trailer that contains dangerous goods, but the trailer is not also an MPU, the driver and trailer require licenses under the DG regulations. One potential challenge is that a trailer towed by an MPU may also be towed by another (non-MPU) vehicle. In some states and territories, licenses for explosives (including for MPUs) and for other dangerous goods may be issued by different authorities. The incorporation of AEC into the draft Code, and addressing MPUs, provides an opportunity to address this. The NTC will explore how to manage this issue and ensure that the legislative settings are appropriate and clearly specified.

Questions for consultation

NOTE: As discussed above, this will be subjected to further investigation. Responses to these questions will be used to determine the appropriate course of action for this work.

Q63. Do you support different requirements for driver and vehicle licensing?

Q64. Do you consider that formal training for drivers would be useful in cases where a driver does not need a licence?

Q65. Do you support the introduction of a notification scheme for vehicles that don't require a licence?

5.13.7. Additional matters the NTC is considering

5.13.7.1. Overview of issue

Delivery of the draft Code provides an opportunity to address some further known issues with the transport of dangerous goods. While these do not require fundamental changes like the Code is undergoing, improvements to these systems can deliver significant value to the transport industry.

These include:

- Improved provisions for training in dangerous goods transport.
- Administrative arrangements for packaging, tank, bulk container and vehicle approvals.
- Mutual recognition arrangements within the dangerous goods framework.
- Harmonised, unified guidance and sources of information.

The NTC will be working with regulators and the transport industry to ensure that these are properly scoped out to deliver benefits to the industry undertaking transport, the regulators performing regulatory tasks and the community.

6 What is the likely net benefit of each option?

Key messages:

The draft Code supports the safe transportation of dangerous goods:

- By addressing gaps and updating safety concepts, the draft Code mitigates emerging risks, supporting the continued safety of dangerous goods land transport in Australia.
- More coherent and easier to navigate requirements, will further support duty holders and regulators alike to comply and administer compliance with the Code.

Safety is balanced with the efficient and smooth transportation of dangerous goods:

- Improved alignment of the Code with international standards will minimise the cost burden of dangerous goods importers and exporters alike, facilitating trade and economic growth.
- By improving alignment with other transport modes, the draft Code will also reduce intermodal frictions and costs in the transportation of dangerous goods across Australia.

Additional industry compliance costs associated with the draft Code are expected to be partially if not fully offset by proposed changes that reduce the regulatory burden on industry:

- A significant number of new concessions for low-risk goods will either remove these goods from the requirements of the Code or provide more options for complying with them.
- The inclusion of a wider range of harmonised standards from the ADR, will provide greater choice and flexibility, supporting the productivity of the dangerous goods transport industry.

Similarly, government implementation costs are also expected to be partially if not fully offset by efficiencies supported through the draft Code:

- Leveraging the ADR framework and process for maintaining land provisions, will support simplification of the maintenance task and a contemporary Code going forward.
- The draft Code shifts reactive provisions reliant on Competent Authority intervention to being proactive, reducing unnecessary burden and time delays for all parties.

Overall, the hypothesis to be tested through consultation is that the safety benefits supported by the draft Code would outweigh the additional costs to industry and government to implement and demonstrate compliance with proposed changes to requirements.

6.1 Introduction

This chapter presents an analysis of the costs and benefits (CBA) associated with the proposed draft Code discussed in Chapter 5, relative to the Base Case.

An Impact Analysis Framework (see Section 6.1.3) has guided the assessment of costs and benefits, direct and indirect, both qualitative and quantitative, to key impacted groups including suppliers and manufacturers of dangerous goods, the dangerous goods land transport industry, government, and the broader community.

Due to data limitations, it has not been possible to quantify the size of impacts for the C-RIS. Our proposed approach for undertaking the Impact Analysis (see Section 6.1.2) addresses these data limitations front-on to iteratively develop the CBA over the C-RIS and the D-RIS.

For each impacted group, the chapter follows a consistent structure: defining the size and composition of the group impacted and undertaking a qualitative CBA for that group. Feedback from the consultation process will enable the NTC to validate and update the impact analysis with the D-RIS post consultation.

6.1.1 Data limitations

In evaluating the impacts of changes to the Code, the C-RIS has encountered several significant data limitations including:

- Lack of data on the effectiveness and compliance with the current Code.
- Lack of comprehensive national data on the number of incidents and the costs of those incidents. The cost of dangerous goods incidents is also difficult to estimate due to the variability in incidents.
- Limited 'before and after' data to draw from to estimate the level of reduction in risk of dangerous goods incidents resulting from changes to the Code.
- Incomplete data on the size of the dangerous goods industry and their employees, including upstream and downstream participants.
- Lack of information on business compliance costs borne by industry under the current Code.
- Lack of information on the costs borne by local, State and Territory governments and Competent Authorities in administering the Code.

6.1.2 Overview of approach

Our proposed approach for undertaking the Impact Analysis addresses these data limitations front-on to iteratively develop the CBA over the C-RIS and D-RIS, as summarised by Table 12.

Due to data limitations, a CBA for the C-RIS has been undertaken at a qualitative level. The C-RIS will be used to inform the public consultation and seeks feedback on the proposed approach, preliminary analysis as well as data to quantify and evidence the impacts.

Post consultation, the Impact Analysis will be updated for the D-RIS with a focus on updating the qualitative CBA for stakeholder feedback and quantifying costs and benefits, to the extent that the required data and information has been obtained through consultation. Remaining areas of risk and uncertainty will be subjected to sensitivity analysis, to test the robustness of the analysis.

Table 12: Impact analysis approach for the C-RIS and the D-RIS

#	Step	C-RIS	D-RIS
1	Identify and specify the **preferred option** and identify **key changes** in regulatory requirements, relative to a Base Case option.	✓	
2	Identify full range of **direct and indirect impacts** associated with the selected option and specify impact measures.	✓	
3	Undertake a **qualitative CBA** of the selected option relative to the Base Case, highlighting the distribution of impacts across businesses, government, and the community.	✓	✓
4	Test approach & preliminary impact assessment through consultation focusing on data gaps.	✓	
5	Undertake a **cost analysis** of the selected option including changes in regulatory costs to businesses as well as change in government costs.		✓
6	Undertake a **breakeven analysis** of the numbers of deaths/injuries that would need to be prevented to offset the costs of the selected option.		✓
7	Develop a series of **sensitivity analyses** for key areas of risk and uncertainty (e.g., number of impacted businesses in the transport industry).		✓

6.1.3 Impact Analysis Framework

Guiding the Impact Analysis, the framework in Table 13, summarises the impact of potential changes to the land-mode requirements of the Code across all sectors of the economy including manufacturers and suppliers of dangerous goods, the dangerous goods land transport industry, government, and the community. For each group, the framework shows direct and indirect benefits and costs, and measures of those impacts, including whether those impacts are qualitative (highlighted yellow), potentially quantifiable (highlighted purple) or potentially monetisable (highlighted teal).

As discussed in the preceding section, data limitations may ultimately prevent the quantification of many of the impacts associated with the proposed regulatory changes.

Table 13: Impact Analysis Framework Table

Group	Impact	Impact Measure	Impact type
Suppliers and manufacturers	Improved trade competitiveness and economic growth due to greater alignment with international standards.	• Increased domestic output. • Increased employment.	Indirect benefit
Suppliers and manufacturers	A reduction in intermodal difficulties and inefficiencies due to improved alignment with other transport modes.	• Reduced costs of transitioning between land transport and sea & air transport.	Direct benefit
Suppliers and manufacturers	Reduced complexity and difficulty in understanding and complying with the Code, as the content and navigability of the Code is improved.	• Reduced time and costs spent by industry in understanding and interpreting the land mode requirements of the Code.	Direct benefit
Suppliers and manufacturers	Net incremental change in one-off set up costs required to comply with changes in regulation.	• Training and education. • Updating databases for DGL (e.g., additional columns). • Updating products database to ensure they have the right information for the purposes of calculating placarding thresholds.	Direct cost
Suppliers and manufacturers	Net incremental change in ongoing costs associated with demonstrating compliance with new regulation. Overall, this change may be positive (with a reduction in burden) or negative (with an increase in burden).	• Change in costs associated with changes to provisions relating to preparing documentation, labelling, marking and preparing a consignment for shipment.	Direct cost
Transport industry	Reduced risks to the transport industry associated with dangerous goods transport.	• Reduced risk of fatality or injury to workers (e.g. drivers, loaders,) and associated costs to businesses (e.g. worker compensation).	Direct benefit
Transport industry	Reduced complexity and difficulty in understanding and complying with the Code, as the content and navigability of the Code is improved.	• Reduced time and costs spent by industry in understanding and interpreting the land mode requirements of the Code (potentially monetisable). • Reduction in non-compliance and associated penalties.	Direct benefit
Transport industry	Net incremental change in one-off set up costs required to comply with changes in regulation.	• Training and education • Integrate new information into systems/processes/guidelines.	Direct cost

Group	Impact	Impact Measure	Impact type
Transport industry	Net incremental change in ongoing costs associated with demonstrating compliance with new regulation.	• Change in costs associated with changes to provisions relating but not exclusive to loading, unloading, and transporting dangerous goods.	Direct cost
NTC, Regulators & Competent Authorities	Less resource intensive and more timely maintenance of the land mode requirements of the Code, by leveraging the ADR/RID process.	• Net reduction in costs to government associated with maintaining the Code (e.g., less drafting and legal costs).	Direct Benefit
NTC, Regulators & Competent Authorities	Less resource intensive and more timely maintenance of the land mode requirements of the Code, by leveraging the ADR/RID process.	• Reduced gaps in the Code/ongoing alignment with the international standards.	Direct Benefit
NTC, Regulators & Competent Authorities	Reduced complexity and difficulty in administering compliance with the Code, as the content and/or structure of the Code are improved.	• Reduced costs to Competent Authorities associated with ad-hoc decisions/approvals (short term) as well as submissions from industry (long-term).	Direct Benefit
NTC, Regulators & Competent Authorities	Government costs associated with implementing the draft Code.	• Implementation costs of changes to legislation. • Additional costs associated with register of regulatory changes. • Costs associated with training and education/guidance materials.	Direct Cost
Community & Government	Avoided dangerous goods transport incidents due to improved compliance with the draft Code (Avoided costs to the community).	• Avoided deaths and injuries to community. • Avoided environmental and property costs.	Direct Benefit
Community & Government	Avoided dangerous goods transport incidents due to improved compliance with the draft Code (Avoided costs to government).	• Avoided first responder costs. • Avoided health care costs.	Indirect Benefit

Key: Quantitative | Qualitative | Potentially Quantitative

6.2 Suppliers and Manufacturers

6.2.1 Defining the Market

Changes to the Code will impact on manufacturers and other suppliers (importers) of dangerous goods, who are responsible for the initial stages of the dangerous goods transport supply chain – including marking and labelling dangerous goods for transport as well as preparing instructions for transport, loading, and unloading. Notably, manufacturers may also be exporters, who must also comply with the requirements of the IMDG Code (sea transport) and/or IATA Regulations (air transport).

The dangerous goods industry contributes to almost 100% of the economy. Of Australia's 114 industries, for example, 108 rely on the chemistry sector as intermediate inputs into essential goods and services.[36] Major industries that depend on the production of chemicals include manufacturing, construction, services (e.g. healthcare), agriculture and mining.[37] For example, flammable liquids (petrol) are used for manufacturing and delivering of goods, while pesticides and fertilizers are used in agriculture.

Manufacturers

In the absence of data on the size and composition of manufacturers of dangerous goods in Australia, we have leveraged 2019 census data for the number of businesses across industries that produce dangerous goods, informed by the percentage of dangerous tonnes of commodities transported. Following this approach, Table 14 shows that approximately 6% of all tonnes of goods transported in Australia are dangerous goods, mainly composed of gases, petroleum products, chemicals, and fertilisers.

Table 14: Share of dangerous goods transported, by commodity[38]

Commodities with dangerous goods			
Commodity	**Dangerous Tonnes-Kilometres**	**Total Tonne-Kilometres**	**% Share Dangerous Goods**
Gases	1,442,973	1,499,757	96.21%
Petroleum and petroleum products	6,442,138	9,134,612	70.52%
Chemicals	1,551,625	2,429,776	63.86%
Fertilisers	804,479	3,515,706	22.88%
Beverages and tobacco	130,181	5,602,318	2.32%
Other commodity	176,103	10,523,774	1.67%
General freight	493,021	43,758,707	1.13%
Other manufactured articles	17,253	8,850,175	0.19%
Miscellaneous manufactured articles	570	3,234,063	0.02%
Other*	-	107,069,800	-
Total	**11,058,342**	**195,618,687**	**5.65%**

* Includes food and live animals, Crude materials, inedible (excluding fuels), Animal and vegetable oils, fats and waxes, Cement and concrete, Iron and steel, Machinery and transport equipment, Tools of trade, Coal.

Based on dangerous goods transport shares, Table 15 identifies approximately 8,000 businesses that manufacture dangerous goods in Australia. This estimate is likely to be conservative, as it excludes businesses that fill pressurized gases and petroleum products in portable containers. However, some of these businesses may be captured in the analysis of the transport industry. Further, businesses that produce beverages and tobacco, as well as manufactured articles and commodities that are classified as dangerous goods are also excluded from the table, due to lack of delineated data.

Table 15: Estimated number of businesses manufacturing dangerous goods in Australia[39]

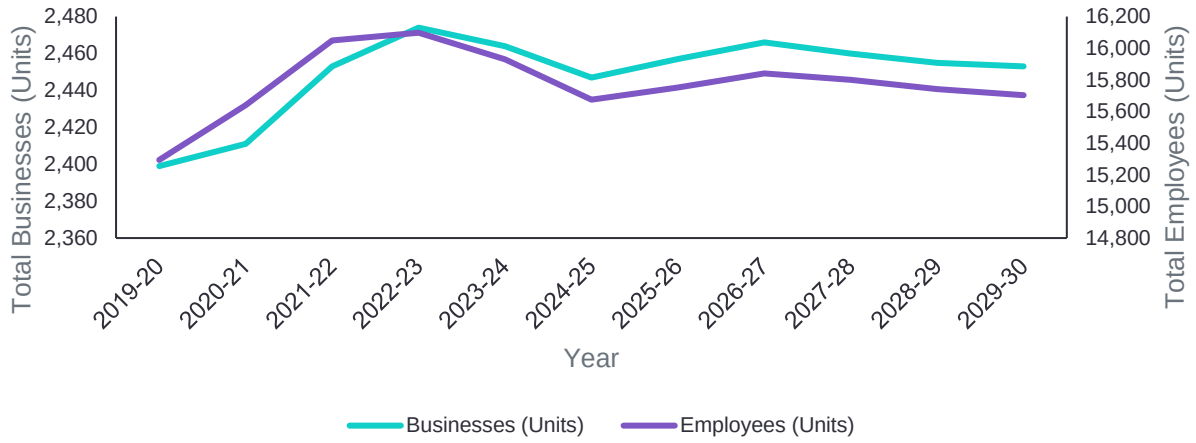
Industry	Commodity Type	Total number of businesses (FY19)	Total number of employees (FY19)	Approx no. manufacturers of dangerous goods
Basic Chemical Manufacturing	Gases and Chemicals	278	6,300	184
Basic Polymer Manufacturing	Chemicals	304	1,700	194
Cleaning Compound and Toiletry Preparation Manufacturing	Chemicals	1,429	4,500	913
Fertiliser and Pesticide Manufacturing	Fertilisers	422	3,000	183
Mineral, Metal and Chemical Wholesaling	Petroleum and Petroleum Products and Chemicals	5,055	25,600	3,396
Other Basic Chemical Product Manufacturing	Chemicals	194	2,600	147

Industry	Commodity Type	Total number of businesses (FY19)	Total number of employees (FY19)	Approx no. manufacturers of dangerous goods
Petroleum and Coal Product Manufacturing	Petroleum and Petroleum Products	313	6,100	221
Polymer Product Manufacturing	Petroleum and Petroleum Products	3,210	32,600	2,264
Waste Treatment, Disposal and Remediation Services	N/A	2,717	14,400	1,440[40]
Total		**13,922**	**96,800**	**8,045**

Suppliers

In the absence of complete data on the size and composition of suppliers of dangerous goods in Australia, Figure 16 leverages 2024 data from IBISWorld showing the number of actual and projected wholesalers and their employees involved in the supply of industrial and agricultural chemical products in Australia. This is not a full snapshot of the number of businesses supplying dangerous goods in Australia.

Figure 16 Industrial and Agricultural Chemical Product Suppliers



On average over the period 2019-20 to 2029-30, IBISWorld estimates there will be 2,449 businesses and 15,775 employees involved in the supply of specialty industrial and agricultural chemicals.[41] This industry is anticipated to slowly shrink over the coming five years due to a marked contraction in the mining sector, as one of the largest consumers of industrial chemicals.[41] The industry is not involved in manufacturing relevant chemical products, or wholesaling pharmaceuticals or personal-care products. This is expected to significantly underestimate the number of businesses supplying dangerous goods in Australia.

6.2.2 Impact Analysis

6.2.2.1 Improved competitiveness and economic growth

The ADR currently has 54 signatory countries including the UK, France, Italy, and Germany, the population of which totals in excess of 1.2 billion. There are several other countries who are not contracting parties to the agreement but use the ADR as a basis for their local regulations. This includes some of Australia's key trading partners.

Greater alignment with the ADR/RID will minimise the costs and burden of industries who produce and use dangerous goods of complying with multiple or inconsistent requirements and facilitate seamless compliance for importers and exporters alike. By doing so, greater harmonisation with international standards in Australia would be expected to support a more level playing field, facilitate trade and promote economic growth – as the chemical industry is highly globalised and operates across domestic as well as international markets.

Moreover, the inclusion of a wider range of harmonised standards from the ADR/RID, will support the use of a wider range of containment systems (e.g., non-multimodal MEGCs and ADR style tanks) and vehicles (e.g., tube vehicles, vacuum operated waste tanks, and MPUs), not addressed in the current Code. This will provide greater flexibility across the dangerous good transport industry, allowing transporters to use tanks and vehicles most appropriate to their transport needs. In this way, a wider range of standards would be expected to drive efficiency improvements across Australia's dangerous goods transport industry, reducing transport costs, and ultimately supporting the competitiveness and growth of industries that manufacture and use dangerous goods.

With 108 out of 114 industries in Australia relying on dangerous goods as inputs into the production of goods and services, reducing the cost to transport dangerous goods would be expected to have a multiplier effect in stimulating Australia's employment and gross domestic output. Consumers would also be expected to benefit, to the extent that cost savings are passed down to them.

6.2.2.2 Reduction in intermodal difficulties and inefficiencies

The ADR/RID is harmonised with dangerous goods regulations for air transport (ICAO TIs) as well as maritime transport (IMDG Code of the International Maritime Organisation). By using the ADR/RID as its starting point, the draft Code balances the need to address the risks unique to Australia's land transport environment, with the smooth transportation of dangerous goods across borders and transport modes.

The draft Code proposes a number of changes geared towards improving alignment with other transport modes, thereby reducing intermodal difficulties and inefficiencies in the transportation of dangerous goods across Australia. Most prominent amongst these changes, is the proposed removal of EIPs on IBCs, whilst retaining the requirement for EIPs on vehicles transporting IBCs. This change would align the Code with international practices and with the requirements for transport by sea and by air. By doing so, the change would be expected to remove unnecessary red tape, reduce intermodal barriers, and provide significant cost reductions to industry, whilst still providing the information necessary in the event of an incident. These benefits are discussed further in Chemistry Australia's case study below.

Case Study: Savings associated with EIP requirements for IBCs

IBC under standard marking and labelling requirements[42]

In 2018, Chemistry Australia undertook an Impact Analysis on EIPs in relation to IBCs. Chemistry Australia consulted with industry to analyse the impact of EIP requirements on the Australian chemistry industry. According to the analysis, the uniquely Australian requirement to label IBCs with EIPs costs the Australian chemistry industry alone $95.8 million per year.

Chemistry Australia called for the removal of this requirement from IBCs, on the basis that it reduces productivity and competitiveness, is misaligned with international practice, and provides no benefit to safety outcomes.[43]

Updated for inflation and for growth of the chemistry industry (8,125 estimated businesses in 2023 versus 5,056 business in 2018), the removal of EIP requirements for IBCs could save the chemistry industry alone approximately $180 million per annum.

Other proposed changes to bring the Code in closer alignment with other transport modes include:

- Updating Table 9.1 (i.e., table of incompatible goods based on classification) and Table 9.2. (i.e., examples of incompatible dangerous) for alignment with the IMDG Code to enable the smooth multimodal transportation of dangerous goods across borders.
- Removal of special provision AU07 which provides an exemption from the requirement to segregate chlorine based on its inherent hazards. This change would bring the Code in alignment with the current provisions of the IMDG Code, further reducing intermodal barriers to trade.

6.2.2.3 Reduced complexity and difficulty in understanding & complying with the Code

Global structural changes and clarifications are proposed by the draft Code to improve the ease with which duty holders navigate, understand and interpret their requirements. This includes changes in the sequencing of land mode provisions to follow the transport process, restructuring to address current contradictions in land mode provisions and consolidating requirements that apply to different duty holders. By supporting a more coherent, consistent and easy to navigate Code, the proposed changes would be expected to increase compliance with requirements, avoiding penalties for non-compliance by duty holders, and improving the safety outcomes of the dangerous goods transport industry overall.

The draft Code proposes several structural and clarification changes to the initial stages of the dangerous goods transport supply chain that would be expected to make it easier for all duty holders to locate and understand their responsibilities especially suppliers, manufacturers and consignors.

Example 1 – Restructuring classification provisions for easier navigation and clarity

Part 2 of the Code includes classification criteria for goods that cannot be found by name in the dangerous goods list (DGL, and includes criteria for determining how to classify and handle dangerous goods, or if they are too dangerous to transport. Correct classification forms the starting point for all requirements relating to the labelling, preparing and transport of dangerous goods. Whilst not changing the procedures or criteria for classification, the structure of Part 2 has been improved in the draft Code to provide clearer information including a consistent format and numbering style. This is expected to make identifying, understanding and applying classification easier, minimising the risk of incorrect classification, and driving improved compliance. The inclusion of additional classification codes is also expected to assist duty holders in understanding the hazardous properties of specific dangerous goods, making it easier to identify incompatible substances, particularly with the same Class, thereby reducing the risks of transport.

Example 2 – Supporting identification and application of the correct DGL entry

Part 3 of the Code contains a list of known dangerous goods, listed in numerical order of the UN number. Once the UN number of a specific substance or article is known, the table provides cross-references to the correct transportation requirements to be applied including, packing, marking and labelling. Proposed changes to Part 3 will make it easier for suppliers, manufacturers and consignors to identify entries in the DGL that are either prohibited for transport or are unregulated. This is expected to reduce the likelihood of prohibited substances being inadvertently consigned and transported. The change would also be expected to save consignors time and costs in accidently treating unregulated items as regulated.

In closer alignment with the ADR/RID, the DGL in Part 3 of the draft Code also includes additional columns for classification codes and information on conditions for loading, unloading and handling related to risks associated with road and rail transport, not included in the current Code (see case study below). The additional columns will increase the ease with which duty holders can locate and understand requirements relevant to their transport scenarios, supporting an uplift in compliance and safety outcomes across the dangerous goods transport industry.

Case Study: DGL in ADG 7.9 vs. the draft Code

Picture below: DGL in the Code (7.9 Edition)[44]

UN No.	Name and Description	Class or Division	Subsidiary Hazard	UN Packing Group	Special Provisions	Limited and excepted Quantities		Packaging Packing Instruction	Packaging Special Packing Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)
Ref	*3.1.2*	*2*	*2*	*2.0.1.3*	*3.3*	*3.4*	*3.5*	*4.1.4*	*4.1.4*

Large Packaging		IBCs		Portable Tanks &		Bulk Containers	Name and Description	UN No.
Packing Instruction	Special Packing Provisions	Packing Instruction	Special Packing Provisions	Instructions	Special Provisions	Instructions		
(8a)	(9a)	(8b)	(9b)	(10)	(11)	(10a)	2	1
4.1.4	*4.1.4*	*4.1.4*	*4.1.4*	*4.2.5*	*4.2.5*	*4.3.2*	*3.1.2*	*Ref*

Picture below: DGL in the draft Code, based on ADR (2023 Edition)[45]

UN No.	Name and description	Class	Classification code	Packing group	Labels (Primary and subsidiary hazards)	Special provisions	Limited and excepted quantities		Packaging	
									Packing instructions	Special packing provisions
	3.1.2	2.2	2.2	2.1.1.3	5.2.2	3.3	3.4	3.5.1.2	4.1.4	4.1.4
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)

Portable tanks and bulk containers		Non-UN tank		Vehicle for tank carriage	Transport category	Special provisions for carriage				UN No.	Name and description
Instructions	Special provisions	Tank code	Special provisions			Packages	Bulk	Loading, unloading and handling	Operation		
4.2.5.2 7.3.2	4.2.5.3	4.3	4.3.5, 6.8.4	9.1.1.2	1.1.3.6 (8.6)	7.2.4	7.3.3	7.5.11	8.5		3.1.2
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(1)	(2)

6.2.2.4 Change in one-off costs required to comply with the draft Code

Implementation of the draft Code would be expected to lead to several one-off costs for suppliers, manufacturers and consignors including:

- Retraining costs for key staff involved in the marking, labelling and preparation of dangerous goods consignment for transport.
- Updating processes and accompanying documentation to reflect changes in requirements.
- Updating product databases to ensure consignors have the right information for the purposes of calculating placarding thresholds.
- Updating systems for changes to the DGL including for the additional columns for classification codes and additional information on conditions for loading, unloading, and handling.

Questions for consultation

Q66. How many people within your business will need to be retrained to support compliance with the draft Code? What is the expected training cost per person?

Q67. How much will it cost to update your systems to incorporate the proposed changes to the DGL and placarding thresholds?

Q68. How much will it cost to update processes and documentation?

Q69. Are there any one-off costs anticipated for your business?

6.2.2.5 Change in ongoing costs required to comply with the draft Code

Drawing on Chapter 5, Table 16 summarises the expected benefits, expected costs and net expected impact of key changes proposed by the draft Code to the requirements of suppliers, manufacturers, and consignors.

The draft Code introduces a significant number of new concessions for low-risk goods (e.g., small gas cylinders, paint waste, and ready to use pharmaceutical products) that would either remove these goods from the requirements of the Code or provide more options for complying with them. In either case, this would be expected to lead to a reduction in burden and associated costs for suppliers, manufacturers and users of low-risk goods (e.g. retailers, waste services, and home delivery services), without compromising safety outcomes. Responding to repeated calls from industry, the draft Code also removes the unique Australian requirement for EIPs on IBCs, aligning with international standards and other transport codes, and delivering estimated savings to the chemistry industry alone of approximately $180 million per year.

The avoided costs associated with these changes would be partially offset by new special packing instructions and provisions for specific high-risk substances. In line with community expectations, this

includes new packaging, labelling and marking requirements for packages carrying environmentally hazardous substances with a capacity exceeding 30kg/L. Our hypothesis to be tested through consultation is that the safety benefits associated with preventing loss of containment and communication of hazards related to these specific substances, would outweigh costs to industry associated with these new provisions.

Questions for consultation

Q70. We are keen to understand the expected benefits and costs of key changes presented in Table 16, and particularly welcome any data or case studies to evidence these impacts.

Table 16 Net expected impact of key changes to requirements for suppliers and manufacturers

Refs.	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
Chapter 3.3	**Provides conditional exemptions for low-risk substances or articles provided minimum safety requirements in the special provision are met.**				
SP 584	Provides a conditional exemption for very small gas cylinders containing carbon dioxide or nitrous oxide.	• None.	• Carriers of goods subject to the proposed special provisions would be exempt from all other requirements of the Code. The proposed risk-based approach to regulation reduces unnecessary burden for low-risk transport scenarios and supports the efficiency and productivity of industry. This approach also negates the justification for the dangerous goods surcharges imposed by transport providers.	**Net positive impact.**	• Retail industry/ home delivery services
SP 653	Provides a conditional exemption for the transport of argon, carbon dioxide, helium and nitrogen in small cylinders that have a maximum test pressure capacity product of 15.2 MPa/litre.	• None.	• As above.	**Net positive impact.**	• Retail industry • Medical industry • Fertiliser industry
SP 592	Exempts empty packagings (including empty IBCs and large packagings), tank-vehicles, tank wagons, demountable tanks, portable tanks, tank-containers and small containers which have contained UN 1376, 1932, 2002, 2009, and 2793 (e.g. iron oxide, scrap cinematography film, zirconium sheets and scrap, and ferrous metal borings, shavings, turnings or cuttings).	• None.	• As above.	**Net positive impact.**	• Waste disposal industry
SP 601	Exempts ready for use pharmaceutical products (medicines), which are substances manufactured and packaged for retail sale or distribution for personal or household consumption.	• None.	• As above.	**Net positive impact.**	• Retail industry/ home delivery services • Pharmaceutical manufacturers and suppliers

Refs.	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
SP 598	Provides conditional exemptions for new or end of life batteries of UN 2794, 2795, 2800, and 3028.	• None.	• As above.	**Net positive impact.**	• Retail industry • Waste disposal industry
SP 648	Exempts certain articles impregnated with pesticide (e.g., fibreboard, paper strips and cotton-wool balls).	• None.	• As above.	**Net positive impact.**	• Retail industry/ home delivery services • Waste disposal industry
SP 668	Provides concessions for elevated temperature substances for the purpose of applying road markings.	• None.	• As above.	**Net positive impact.**	• Councils
SP 654	Provides concessions and clear instructions for the transport of waste lighters of UN1057 collected separately and carried for transport	• None.	• As above.	**Net positive impact.**	• Waste collection services
SP 636	Provides conditional concessions for lithium cells and batteries being transported to an intermediate processing facility for sorting, disposal or recycling.	• None.	• As above.	**Net positive impact.**	• Waste collection services
SP 650	Provides alternative packing methods for the safe transport of wastes of paint and paint related materials of UN1263.	• None.	• Carriers of impacted goods would be provided with risk appropriate and achievable alternative requirements.	**Net positive impact.**	• Paint industry • Waste collection services
Environmentally hazardous substances (Part 3.3)	AU01 has been removed and replaced with SP 601 which provides a total exemption for ready to use pharmaceutical products, and SP 375A, which provides two levels of exemptions for applicable substances including: • Packages not exceeding 30 kg/L remain fully exempt, provided minimum packaging requirements are met. • Packages with a capacity greater than 30kg/L are exempt from all requirements other than minimum packaging requirements and marking and labelling.	• It is understood that the majority of suppliers and manufacturers are already using compliant packaging including appropriate marking and labelling. Where suppliers and manufacturers are not including this information due to the AU01 exemption, the additional costs would not be expected to be significant. However, this needs to be further tested through consultation.	• The intent of this provision is to prevent loss of containment and improve communication of hazards, increasing safety outcomes and reducing the potential for damage to the environment.	**Net positive impact.** The reduction in risks to people, property and the environment from the transport of environmentally hazardous substances would be expected to outweigh additional costs associated with packaging, marking and labelling.	• Paint industry • Chemical industry • Agricultural industry • Veterinary industry • Waste disposal industry

Refs.	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
Packing instructions (P001)	P001 has been amended to include a requirement for venting for substances of Class 3, Packing Group III, which give of small quantities of carbon dioxide or nitrogen.	• May lead to a requirement for modified packaging approvals to provide for venting, e.g. vented closures.	• The intent of this provision is to prevent build-up of pressure that could result in the packaging failing. This would be expected to improve safety outcomes for loaders and unloaders.	**Ambiguous impact.** It is unclear to what extent this would lead to a net positive impact, as not much is known about current practices across Australia.	• Consignors • Transport industry
Packing instructions (P410)	Special packing provision PP40 prohibits the use of bags for PG II goods and has been extended to apply to aluminium ferrosilicon powder (UN 1395), aluminium powder, uncoated (UN 1396), zinc powder or dust (UN 1436), and fused lithium hydride (UN 2805).	• May lead to a requirement for alternate packagings to be used, with corresponding increase in costs for industry. It is unclear to what extent this already reflects current practice in Australia.	• Bags do not provide sufficient containment for these dusts. Prohibiting the use of bags would be expected to prevent the escape of fine dusts into the atmosphere, improving safety outcomes and limiting environmental impacts.	**Ambiguous impact.** It is unclear to what extent this would lead to a net positive impact, as not much is known about current practices across Australia.	• Suppliers • Manufacturers • Consignors • Transport workforce • Community
New special packing provisions for land transport (Part 4)	Special packing instructions have been introduced for land transport. These include: • 10 new RR special packing provisions have been included for P packing instructions • 4 new BB special packing provisions have been included for IBC packaging instructions • 1 new LL special packing provision has been included for LP packing instructions	• May lead to requirements for different types of packaging as well as revising and updating current packing instructions. The magnitude of this impact is unknown and requires feedback.	• Provides flexibility for duty holders without compromising safety, which can be expected to improve compliance.	**Ambiguous impact.** It is unclear to what extent this would lead to a net positive impact, as not much is known about current practices across Australia.	• Suppliers • Manufacturers • Consignors • Transport workforce
EIPs for IBCs (Part 5.2)	The concept of a placardable unit has been omitted from the draft Code and all packaging (including IBCs) require standard marking and labelling only. This removes the requirements for IBCs to display EIPs.	• None.	• WorkSafe Victoria's RIS for dangerous goods (transport by road or rail) regulations 2018, estimated that the requirement for EIPs on IBCs costs the chemical industry roughly $101 million per year in 2018 ($190 million in $2024).[46] This aligns with a cost analysis conducted by Chemistry Australia in 2018, which estimated the cost burden to industry at $95.8 million ($180 million in $2024 due to growth of the chemical industry and inflation).	**Net positive impact.**	• Supplier & Manufacturers • Consignors • Chemical industry • Transport industry

6.3 Transport Industry

6.3.1 Defining the Market

While duty holders may hold different roles, dangerous goods transport operators – comprising loaders, unloaders, carriers and drivers – would be principally responsible for requirements under Parts 5, 7, 8 and 9 of the draft Code. Whilst consignment procedures are not traditionally the responsibility of transport operators, the prevalence of consolidated loads in Australia often requires transport operators to undertake activities in compliance with Part 5 of the Code.

As shown by Table 17, the dangerous goods transport industry is made up of approximately 159,451 businesses and 441,500 employees. In addition, there are a significant number of private transport operators including agriculture workers. Road freight is dominated by small business, with 89.5% of businesses having less than 20 employees. Constrained by high capital costs, this does not hold true for rail freight, which tends to comprise larger sized companies with more than 200 employees.

'Other transport services' make up the majority of transport businesses and include:

- **Customs Agency Services**: Businesses engaged in providing advice on import and export procedures and documentation, and other related services.
- **Freight Forwarding Service**: Businesses engaged in contracting the transportation of goods for other enterprises, taking prime responsibility for the entire transport operation. This includes transport across road, rail, air, sea, or any other combination of modes of transport.
- **Other Transport Services not elsewhere classified**: Businesses engaged in providing transport support through container, road freight, or rail terminal operation, toll bridge and road operation, road vehicle driving service, and taxi radio base operation.

Other core market segments include:

- **Road freight transport:** A broad class including furniture removal, truck and taxi hire (with driver), road vehicle towing and road freight transport service.
- **Postal services**: Businesses engaged in the pick-up and delivery of letters, documents and parcels from a predetermined collection point.
- **Courier pick-up and delivery services**: Businesses engaged in the door-to-door pick-up, transport and delivery of documents, parcels and other small items. This includes grocery and home delivery service, messenger services.
- **Waste Collection Services:** Businesses engaged in the collection and haulage of domestic, commercial or industrial waste.

Table 17: Other market segments involved in the transport of dangerous goods, by business size[47]

Industry type	Number of businesses	<20 employees	20 to 99 employees	100 to 199 employees	200+ employees	Employee Count
Other Transport Support Services	62,640	75.1%	20.6%	1.9%	2.4%	57,200
Road Freight Transport	60,563	89.5%	9.1%	0.8%	0.6%	190,800
Postal and Courier Pick-up and Delivery Services*	31,399	63.9%	23.8%	6.8%	5.6%	101,800
Warehousing and Storage Services*	2,076	88.6%	9.5%	1.0%	1.0%	70,300
Waste Collection Services	2,717	81.9%	15.4%	0.7%	2.0%	14,400

Industry type	Number of businesses	<20 employees	20 to 99 employees	100 to 199 employees	200+ employees	Employee Count
Rail Freight Transport	56	22.2%	50.0%	0.0%	27.8%	7,000
Total	**159,451**	**88.3%**	**9.8%**	**1.0%**	**0.9%**	**441,500**

* These rows do not add to exactly 100.0% due to rounding.

Impact Analysis

6.3.2.1 Reduced risks associated with dangerous goods transport

The primary objective of the draft Code is to address gaps in the current Code and mitigate the risks to people, property and the environment associated with the transport of dangerous goods by land. By using the ADR/RID as its starting document, the draft Code absorbs over 60 years of global best practice including routine amendments to address emerging risks and incorporate technological advancements. Proposed amendments deliver on the safety objectives of the Code in several ways:

- Starting with ensuring a coherent and consistent document, the draft Code makes global structural improvements aimed at improving the ease with the which duty holders navigate the Code, identify, and comply with their requirements. This is discussed in greater detail below for transport operators and in the previous Section 6.2 for suppliers and manufacturers.
- Clarifications of existing requirements to support more consistent compliance with the Code. These clarifications aim to address land transport specific gaps in the Code, created by relying on mode agnostic provisions from the UNMR, and include additional information on hazards as well as mode-specific guidance. This also includes improving transparency of existing requirements currently located outside of the Code including Competent Authority determinations, the MSI and AS2809.
- Blanket requirements based on the UNMR are replaced by a risk-based approach appropriate to land transport. This includes specific requirements for specific substances, more options appropriate to a wider range of transport scenarios, and the introduction of a minimum level of safety to qualify for exemptions. The risk basis for controls is now more transparent and appropriate to the level of risk.
- Outdated safety concepts have been removed including the mandatory requirement to use truck gates for load restraint (Part 7.5.7), which lead to manual handling injuries. Other existing requirements which may have unintentional impacts for drivers include the requirement for a self-contained breathing apparatus as well as chemically resistant suit or coveralls. Both provisions are discussed in Working Paper 4.
- Additional provisions to mitigate the risks specific to road or rail transport including special provisions for the carriage, loading and unloading of certain substances or specific goods. This also includes greater clarity around driver expectations, more transparent and clearer training requirements, as well as simplified safety and firefighting equipment requirements that address land transport specific risks and reduce the impact and costs of land transport incidents to industry and the community. The case study below outlined the impact of firefighting equipment requirements on wheel end fires in Australia.

Case Study: Changes to firefighting equipment requirements

The current Code requires all vehicles transporting a placard load of dangerous goods to carry fire extinguishers as specified in Table 12.1 of the Code. All extinguishers in Table 12.1 are dry chemical powder (DCP), with notes regarding substitution conflicting with one another. The blanket requirement for DCP extinguishers does not consider land transport risks such as wheel end fires, which account for almost 35% of truck fires and are more effectively extinguished by foam or water extinguishers.[48,49] Further, the number of fire extinguishers required to be carried in the current Code is based on the type and quantity of dangerous goods in the load. If the purpose of the equipment is to extinguish the fire before it can reach the load, this is not the most appropriate basis.

For the Code to protect participants in the dangerous goods supply chain in Australia, the required safety equipment must manage the risks of land transport. In the draft Code, the requirements for firefighting equipment have been based off the approach taken in ADR and have been modified to reflect Australian practice. The proposed requirements require that all transport units carry fire extinguishers and base the minimum number of fire extinguishers to be carried off the maximum permissible mass of the transport unit. This better reflects the size of any wheel end fires that may occur and ensures all drivers, regardless of transport unit mass, are equipped for the types of fires that they are most likely to encounter. The requirements also specify that the capacities outlined in the draft requirements are for DCP devices or an equivalent capacity for any other suitable extinguishing agent. This allows duty holders to substitute DCP extinguishers for foam and water extinguishers, which extinguish wheel end fires more effectively.[49]

Picture above: Explosion following wheel end fire in the Western Australian Goldfields in 2022[50]

The ability to contain and extinguish a fire before it reaches the load can be the difference between a damage bill of around $4,000 for a fire contained at the wheel end, compared to over $500,000 plus freight, recovery and clean-up costs for a fire that engulfs the transport unit and load.

With 60 wheel end fires in Australia recorded in 2022 (latest data found), the proposed requirements would have prevented roughly $30 million in damages, assuming all wheel end fires led to the engulfment of the transport unit and load.[51]

6.3.2.2 Reduced complexity and difficulty in understanding & complying with the Code

The draft Code proposes a number of structural and clarification changes to the latter parts of the transport supply chain that would be expected to make it easier for all duty holders to locate and understand their requirements, especially carriers, loaders, unloaders and drivers. As the following examples show, this includes consolidating and restructuring provisions to follow the supply chain, separating out requirements for the containment system and the vehicle transporting it, and providing clearer guidance for drivers.

Example 1 – Consolidating provisions concerning carriage, loading, unloading and handling

Provisions concerning carriage, loading, unloading, and handling of dangerous goods – including those related to vehicles suitable for the carriage, mixed load prohibitions, stowage, segregation rules, load restraint and other precautions – are scattered throughout the current Code. Consequently, it is difficult for duty holders to locate the requirements that apply to their transport scenario. Part 7 of the draft Code collates many existing provisions to improve the ease with which transporters navigate, identify, and comply with their requirements.

Example 2 – Distinguishing between the tank and the vehicle

Selecting the correct containment system and vehicle for the type and volume of dangerous goods being transported is essential to the efficient and safe transportation of dangerous goods. In the current Code, tanks and vehicles and the resulting tank vehicle are largely treated as a single unit. The provisions for these are intermingled and confuse the different roles that each perform. In many common situations addressed by the Code this ‘unified’ approach does not cause major problems. However, in less common situations, these conflicts can make deciding how to proceed difficult for both industry and regulators. The added complexity can also prevent the use of high-productivity transport options.

The draft Code separates out the requirements that apply to containment systems (such as tanks) into Part 6 and the vehicles that transport the tank into Part 9. In doing this, the Draft Code brings across the requirements for tank vehicle design and maintenance into the Code that are currently set out in Australian Standards AS 2809.1, and which are inaccessible without paying. This would be expected to improve the accessibility and transparency of these standards to vehicle designers and operators. The separation of

tanks and vehicles also enables the incorporation of ADR-style tanks and containment systems into the Code, providing greater flexibility for transporters, especially in the transport of substances that are not comprehensively addressed by AS 2809.

Example 3 – Supporting more consistent compliance by drivers

The draft Code includes additional information to support compliance by drivers of dangerous goods vehicles and minimise risks to the community. Examples of these changes include:

- Clearer and more detailed transfer provisions to help reduce risks to the community associated with the transfer of goods undertaken in publicly accessible places.
- Adding a new series of 'S' provisions to the Code for drivers, referred to in column 19 of the updated DGL. This will enable drivers to easily identify the good they are transporting, and any necessary requirements they may need to be mindful of when doing so.
- Inclusion of general information on route restriction in Chapter 8.6. This aims to support compliance with the requirements implemented by states and territories.

6.3.2.3 Change in one-off costs required to comply with the draft Code

Implementation of the draft Code would be expected to lead to a change in a number of one-off costs for the transport industry, including:

- Retraining costs for key staff involved in the carriage of goods in packages and in bulk; unloading, loading and handling of goods; and the segregation and stowage of goods.
- Updating processes and accompanying documentation to reflect changes in requirements, including the development of a 'Security Plan' (Section 1.10.3) and the requirement to carry 'Instructions in Writing' (Section 5.4.3).
- Costs in purchasing safety and firefighting equipment that comply with new provisions of the draft Code, including additional fire extinguishers, portable warning triangles, foot protection.
- Costs in purchasing placards that meet the proposed reflectivity requirements (provision 5.3.1.1.2).

Questions for consultation

Q71. How many people within your business will need to be retrained to support compliance with the draft Code? What is the expected training cost per person?

Q72. How much will it cost to update processes and documentation?

Q73. How much will it cost your business to update firefighting and emergency equipment to comply with the draft Code?

Q74. What are the cost savings associated with the changes to the requirement for emergency escape masks?

Q75. Are there any one-off costs anticipated for your business?

6.3.2.4 Change in ongoing costs required to comply with the draft Code

Drawing on Chapter 5, Table 18 summarises the expected benefits, expected costs and net expected impact of key changes proposed by the draft Code to the requirements of the transport industry.

The draft Code introduces a number of new provisions relating to the segregation, carriage, loading, unloading and unloading of specific high-risk substances and articles, which would be expected to increase ongoing compliance costs. These impacts are partially offset by the inclusion of more options supporting transporters with greater choice in how they comply with the requirements of the draft Code. It is unclear to what extent the new provisions reflect current practices in Australia and we would welcome any feedback on the operational impacts and additional costs associated with the new provisions listed in Table 18.

Our hypothesis to be tested through consultation, is that safety benefits to people, property and the environment of mitigating risks associated with high-risk dangerous substances and articles, would outweigh

any costs to industry. As discussed in Section 6.5, whilst the number of dangerous goods transport incidents are low, each incident has major and sometimes catastrophic consequences and corresponding costs.

Questions for consultation

Q76. We are keen to understand the expected benefits and costs of key changes presented in Table 18, and particularly welcome any data or case studies to evidence these impacts.

Table 18 Net expected impact of key changes to requirements for the transport industry

#	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
Provision 1.1.3.11	Exempts certain dangerous goods being transported from a retail sale location from the regulations, in some cases.	• None.	• This would provide equivalent treatment of home delivery services as private transport for low-risk domestic dangerous goods.	**Net positive impact**.	• Retailers/home delivery services
Provision 1.1.3.13	Short journeys that cross a road, such as to load a vehicle or to move goods between two premises owned by one owner are exempted.	• None.	• This would remove dangerous goods requirements for private transporters undertaking very short journeys such as a farmer crossing paddocks or a forklift driver crossing the road.	**Net positive impact**.	• Private transporters
Chapter 3.3	AU03 has been omitted from the Code and the requirement to provide a copy of the TERP to the relevant hazmat incident combat agency has not been carried forward. All other requirements of AU03 are now addressed in other areas of the Code.	• None.	• The regulatory burden incurred by duty holders in providing the TERP to the relevant hazmat incident combat agency prior to carriage would be removed. This is expected to simplify the transport of Unodourised Liquified Petroleum Gas, Propane and Butane.	**Net positive impact**	• Gas industry
Chapter 3.3	AU07 has been removed and the segregation of chlorine has changed to be based on its inherent hazards (in line with the IMDG Code).	• This would increase the number goods incompatible with chlorine and would be expected to have an impact on transport operations with potential additional cost, e.g., a requirement for more vehicles to carry the same number of goods.	• Basing the segregation of chlorine on its inherent hazards would be expected to reduce intermodal barriers by realigning with international practice, as well as reduce safety risks associated with the transportation of chlorine.	**Net positive impact**. Over time, it would be expected that any additional costs from the new segregation provisions would be offset by the removal of intermodal frictions and reduction in dangerous goods transport incidents.	• Transport industry • Community
Chapter 6	The draft Code will include provisions for the design, construction and use of containment systems not recognised by the current Code. This includes updated requirements for segregation devices which is proposed to be contained in Part 6.	• For owners and personnel of existing tank vehicles, bulk containers and pressure receptacles, limited changes in their operations are expected. Most provisions have been rewritten to reflect existing practices. • The design and construction requirements for containment systems that are derived from the UN MR would remain the same. Where provisions change, transitional measures will apply to limit the impact on	• Additional flexibility in the use of tank vehicles, bulk containers, and pressure receptacles most appropriate for the task would be expected to improve the efficiency and productivity of the dangerous goods transport industry. • The draft provisions would also support greater clarity in the design, construction, and use of different vehicles and containers, supporting greater consistency in practice and improved safety outcomes.	**Net positive impact**. Over time, a positive net impact would be expected as additional flexibility supports the efficiency of the transport industry and competitiveness of industries that produce and use dangerous goods, with downstream benefits for Australian consumers. Disruption to designers, manufacturers and owners of existing containment systems would be minimised by appropriate transition periods.	• Manufacturers/ designers of containment systems • Transport operators • Supplier and manufacturers • Customers and Consumers

#	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
		designers, manufacturers, and owners.			
Chapter 7.1	The draft Code introduces detailed provisions for carriage for substances that require temperature control including clarifying requirements for ventilation, permitted vehicles and methods for maintaining the controlled temperature.	• The extent of operational impacts and associated costs associated with new Part 7.1 provisions are not known and need to be tested with industry as part of this C-RIS.	• Would be expected to improve safety of loaders, unloaders and the community from risks associated with the transport of self-reactive substances.	**Ambiguous impact.**	• Transport industry • Community
Provision 7.1.7.4	The following new requirements have been introduced for carriage under temperature control: • The carrier of substances under temperature control is to be provided with a list of the suppliers of coolant available enroute (7.1.7.4.1). • An adequate quantity of non-flammable coolant (e.g. liquid nitrogen or solid carbon dioxide), allowing a reasonable margin for delay, is carried or a means of replenishment is assured (7.1.7.4.5).	• Consignors of dangerous goods will be required to provide carriers with a list of the suppliers of coolant available enroute, which can be expected to a small increase in regulatory burden.	• Provides clarity of requirements to duty holders, which can be expected to improve compliance and safety outcomes to duty holders and the community – a transporter should have addressed this in their TERP.	**Net positive impact.**	• Transport industry • Community
Provision 7.1.7.4.8	Introduces requirements for ventilation and permitted vehicles for carriage of self-reactive substances of Class 4.1, organic peroxides of Class 5.2. and substances stabilised by temperature control (other than self-reactive substances and organic peroxides) contained in protective packagings filled with a coolant.	• The extent of operational impacts and associated costs associated with 7.1.7.4.8 provisions are not known and need to be tested with industry as part of this C-RIS.	• Improves safety outcomes for loaders, unloaders, and the community.	**Ambiguous impact**	• Transport industry
Chapter 7.2 (V-codes)	The draft Code introduces new provisions for the carriage of specific substances in closed or sheeted vehicles when transport in an open vehicle is considered an unacceptable risk. Examples of specific V-codes that may lead to a change in regulatory burden are provided below.				
V12	Requires PG III liquids (e.g. jet fuel and kerosene) to be carried in closed vehicles or containers when these substances are transported in	• The extent of operational impacts and associated costs associated with new V12 provisions are not known and	• This provision would be expected to improve safety outcomes for duty holders and the community by providing	**Ambiguous impact.** It is unclear to what extent this would lead to a net positive impact, as not much is	• Transport industry • Community

#	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
	composite IBCs with flexible plastic inner receptacles.	needs to be tested with industry as part of this C-RIS.	controls that are proportionate to the risk and that do not unnecessarily impede transport.	known about current practices across Australia.	
V13	Requires that Carbon and Paraformaldehyde be carried in closed vehicles, wagons or containers when packed in bags of 5H1, 5L1 or 5M1.	• As above.	• As above.	**Ambiguous impact.**	• As above.
V10 and V11	Provides the option for IBCs containing applicable substances to be transport in closed or sheeted vehicles. Currently, special packing provisions B1 and B2 prescribe the need for closed vehicles.	• None.	Would provide flexibility to use sheeted vehicles as an alternative to closed vehicles for the relevant substances. This provision can be expected to improve safety outcomes for duty holders and the community by providing controls that are proportionate to the risk and that do not unnecessarily impede transport.	**Net positive impact.**	• Transport industry
Section 8.7.1	Details transfer provisions that apply when the transfer of dangerous goods takes place in public, where it may have off-site impacts or in a location with a residential purpose.	• None.	Transfer that takes place in locations other than those specified would be subject to controls under WHS legislation. This is a more appropriate regulatory regime for transfer in facilities and can be expected to increase compliance and safety outcomes of duty holders and the public.	**Net positive impact.**	• Transport industry • The community
Part 9	The draft Code will include provisions for the design, construction and use of vehicles not recognised by the current Code. This includes additional requirements concerning the construction of the bodies of complete or completed vehicles intended for the carriage of dangerous good including: specific provisions for goods in packages (9.4), bulk goods (9.5), or goods that require temperature control (9.6).	For owners and personnel of existing vehicles, limited changes in their operations is expected. Most provisions have been rewritten to reflect existing practices. The design and construction requirements for containment systems that are derived from the AS2809.1 would remain the same. Where provisions change, transitional measures will apply to limit the impact of designers, manufacturers, and owners.	Additional flexibility in the use of vehicles most appropriate for the task would be expected to improve the efficiency and productivity of the dangerous goods transport industry. The draft provisions would also support greater clarity in the design, construction, and use of different vehicles, supporting greater consistency in practice and improved safety outcomes across Australia.	**Net positive impact**. Over time, a positive net impact would be expected as additional flexibility supports the efficiency of the transport industry and competitiveness of industries that produce and use dangerous goods, with downstream benefits for Australian consumers. Disruption to designers, manufacturers and owners of existing vehicles would be minimised by appropriate transition periods.	• Designers and manufacturers of vehicles • Transport operators • Supplier and manufacturers • Customers and Consumers
Section 7.5.11 (CV codes)	The draft Code introduces new provisions applicable to the loading, unloading, or handling of certain classes of specific substances and articles. Examples of specific CV-codes that may lead to a change in				

#	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
	regulatory burden are provided below.				
CV12	For identified UN numbers (see section 5.10), specifies that when pallets loaded with articles are stacked, each tier of pallets shall be evenly distributed over the lower tier, if necessary, by the interposition of a material of adequate strength.	Minimal expected costs.	The intent of this provision is to prevent collapsing of stacks. Would be expected to improve safety of the community and emergency responders.	**Net positive impact.**	• Transport industry • First responders • Community
CV15	Imposes limits on the quantity of organic peroxides (Class 5.2), self-reactive substances and polymerizing substances (Class 4.1) in a load.	In theory, the introduction of a load limit could mean the need for more vehicles to carry the same amount. However, not enough is known around current practices.	The intent of this provision is to reduce the severity of the consequences in the event of an incident. This would be expected to improve safety outcomes for duty holders, the community as well as first responders to an incident.	**Ambiguous impact.** It is unclear to what extent this would lead to a net positive impact, as not much is known about current practices across Australia.	• Transport industry • First responders • Community
CV20	Assigned to specific organic peroxides (Class 5.2) and some self-reactive substances (Class 4.1). Provides some concessions for these substances, provided the load contains no more than 10kg of these substances.	None.	Would be expected to reduce regulatory burden for loads containing a very small amount of these substances	**Net positive impact.**	• Transport industry
CV26	Assigned to UN3245 and to all Class 6.2, other than UN3291 and UN3373. Requires wooden parts of a vehicle, wagon or container which have come into contact with these substances to be removed and burnt.	It is unclear to what extent this reflects current practice in Australia.	The intent of this provision is to prevent cross contamination from infectious substances, which can be expected to improve safety outcomes.	**Ambiguous impact.** It is unclear to what extent this would lead to a net positive impact, as not much is known about current practices across Australia.	• Transport industry • First responders • Community
CV28	Assigned to substances with a primary or subsidiary hazard of 6.1 or 6.2 and to UN Nos. 2212, 2315, 2590, 3151, 3152, 3245 and 3432. Requires segregation from foodstuffs and other articles of consumption, and animal feeds.	None	Removes the current blanket requirement for segregation from food with a risk-based approach, which would be expected to reduce operational inefficiencies.	**Net positive impact.**	• Transport industry
Section 7.5.4	Permits segregation to be achieved by the use of partitions, non-incompatible goods or distance and removes the blanket requirement for segregation on Class 8.	None	The intent is to provide flexibility in the methods used to achieve segregation which can be expected to reduce the burden placed on the transport industry.	**Net positive impact.**	• Transport industry
Part 8	The draft Code introduces new requirements that drivers and operations of dangerous goods vehicles must comply with. Examples				

#	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
	of specific provisions that may lead to a change in regulatory burden are provided below.				
Section 8.1.4 & 8.1.5	Specifies emergency firefighting (Section 8.1.4) and safety (Section 8.1.5) equipment that must be carried on a vehicle. The requirements have been simplified and include clearer provisions relating to equipment substitution. Firefighting equipment requirements are now based on the size of the transport unit, whereas safety equipment requirements are more uniform across load types.	This change would alter the current lists of firefighting and safety equipment that are to be carried and modify equipment requirements. This would be expected to result in replacement of some existing equipment, at an additional cost to transport operators. Firefighting and safety equipment that is to be replaced could be repurposed or recycled, where appropriate.	It is expected that simplified requirements would make it easier for duty holders to understand requirements and, in doing so, reduce the risk of inadvertent non-compliance. Providing clearer provisions relating to fire extinguisher substitution is expected to reduce the number of wheel end fires that result in complete vehicle loss as more appropriate extinguishing agents would be carried. See the case study above on wheel fires and implications for fire-fighting equipment.	**Net positive impact**. The savings in costs to people, property and the environment from reducing the impact of incidents would be expected to outweigh any short-term additional equipment costs. Being able to contain and extinguish a fire before it reaches the load can be the difference between a damage bill of around $4,000 compared to in excess of $500,000 plus freight, recovery and clean-up costs.	• Transport industry • Community
Section 8.1.5	The requirement for self-contained breathing apparatus (SCBA) has been replaced with a filtering escape mask for substances other than those that present a significant inhalation toxicity hazard when transported in large quantities.	The cost of a filtering escape mask is much cheaper (approx. $150 per unit) compared to an SCBA (approx. $5,000 per unit).[52]	SBCAs are expensive to purchase and maintain. Removing the requirement to carry this piece of equipment would substantially reduce costs for most transporters of corrosives, and many transporters of other toxic substances. Removing the requirement may also reduce risks to the safety of drivers and vehicle crew. To use a SCBA successfully, a person must be sufficiently trained and confident in its use to deploy it in an emergency. SCBAs fitted with cylinders also pose a significant risk to the vehicle crew in an event of a crash.	**Net positive impact.**	• Drivers and vehicle crew
One-off changes	The draft Code is expected to lead to a number of one-off costs for the transport industry, which are detailed below.				
Section 1.10.3	The draft Code introduces provisions for high consequence dangerous goods, which have the potential for misuse in a terrorist event e.g. toxic gases, flammable liquids, and ammonium nitrate.	Operators transporting high consequence goods would be required to develop a security plan that addresses the security requirements for the loads being transported.	Greater clarity on expectations would be expected to support a reduction of risk to transport operators, their employees and the community associated with the theft and/or tampering of dangerous	**Net positive impact**. The benefits to the community would be expected to outweigh relatively minor costs to develop a security plan and associated activities. Given the nature of these goods, it is like that	• Transport industry • Community

#	Draft change	Expected cost	Expected benefit	Net expected impact	Most impacted
			during the transport and logistics process.	many operators already have such plans in place. However, this needs to be tested.	
Provision 5.3.1.1.2	A new requirement has been introduced that requires placards to be reflective.	To the extent that transporters are using matte or glossy placards now, an additional cost burden would be borne by these operators to replace them with reflective placards. Existing placards would be expected to end up as landfill, presenting potential environmental costs also.	Introduction of reflective placards would improve the visibility of placards to first responders and community members, to make them more aware of the potential hazards in the case of an emergency. This will contribute to improved safety outcomes for the broader community.	**Net positive impact**. An appropriate transition period will be given to transporters to allow existing placards to be used until their end-of-life. This will mitigate additional costs identified.	• Trasport Industry • First responders • Community
Section 5.4.3	A new requirement to carry 'Instructions in Writing' has been introduced.	Minimal if any costs.	Provides drivers a quick response guide on actions to take in an emergency, which would be expected to improve safety outcomes for vehicle crew and the community.	**Net positive impact**. Reduces risks to people, property, and environment associated with the transportation of dangerous goods.	• Drivers and vehicle crew • Community

6.4 NTC, Regulators and Competent Authorities

The Code is managed, updated and enforced by the NTC, regulators, and Competent Authorities. Their roles and responsibilities are defined as:

- The **NTC** leads national transport reform to support government to improve safety, productivity, environmental outcomes and regulatory efficiency. The NTC develops nationally consistent land transport reforms, and reviews and maintains national laws, codes, and guidelines. The NTC establish the CAP rules that govern how it operates.
- **State and Territory Regulators** enforce the system for the safe transport of dangerous goods in accordance with the Code, as defined by legislation in each jurisdiction. Regulation and enforcement of the transport of dangerous goods is often done by workplace safety authorities and not by agencies sitting within the transport portfolio.[53]In most cases, the primary regulator is also the Competent Authority, however other bodies may also be assigned a regulatory role.
- **Competent Authorities** are bodies assigned by legislation (the MSI) as having appropriate knowledge and expertise to make decisions regarding the transport of dangerous goods. Some states may have more than one Competent Authority.
- The **Competent Authorities Panel (CAP)** is composed of representatives from Competent Authorities from each State and Territory and operates independently to the NTC. The role of the CAP is to aim for national consistency in the interpretation and application of dangerous goods transport legislation by deciding on national application of exemptions, determinations and approvals under the relevant regulations. The CAP also facilitates the establishment of common training and licensing requirements across jurisdictions.

There is limited data on the number of staff that support administration and enforcement of the Code, including the number of inspectors appointed under the relevant legislation.

Questions for consultation

Q77. We seek data from each State & Territory on the number of dangerous goods inspectors and other staff that are actively involved in the administration and enforcement of the Code.

6.4.1 Impact Analysis

6.4.1.1 Less resource intensive and more timely maintenance of the Code

A full review of the land mode provisions of the Code has not been undertaken since 2007. The lack of a systematic approach for developing and maintaining the road and rail specific requirements of the Code has led to a continuous cycle of ad-hoc and random amendments. With each amendment, substantial government and industry costs are involved to implement the changes.

The ADR/RID is updated biennially to keep pace with technical advancements, the emergence of new substances and materials, and the demands of contemporary transport systems. The UNECE's Working Party 15 is responsible for ensuring the harmonisation of the ADR/RID with other relevant legal instruments on the transport of dangerous goods. Aligning the draft Code more closely to the ADR/RID would mean Australia benefits from world leading expertise and is able to seamlessly maintain alignment between its dangerous goods transport codes. This would be expected to future proof the Code, supporting the ongoing safe and efficient transport of dangerous goods in Australia

Leveraging the ADR/RID framework and process for maintaining land requirements of the Code, would support simplification of the maintenance task as well as a contemporary Code going forward. Land mode

provisions of the Code would be seamlessly updated in line with changes to the ADR/RID, following the biennial maintenance cycle currently in place. There would need to be an ongoing maintenance program to ensure Australian-specific provisions, not modified from the ADR/RID, are regularly reviewed and kept up to date. However, this should be a more manageable process compared to the 'status quo' review system and would be further aided by the move to a more coherent and consistent document overall.

6.4.1.2 Reduced complexity and difficulty in administering compliance with the Code

By addressing gaps, contradictions and inconsistencies in the current code, the draft Code would be expected to reduce the complexity and difficulty regulators currently face in assessing compliance and enforcing the Code. Clear, coherent and consistent land transport requirements would also be expected to reduce the need for duty holders to turn to Competent Authorities to resolve areas of confusion.

The current Code includes several special provisions that necessitate case-by-case intervention by a Competent Authority, e.g., SP 301, SP 363, and SP 388. Due to the discretionary nature of Competent Authority decision making, this process creates variation in the practice and conditions imposed across jurisdictions. In the draft Code, many of these provisions and requirements within these provisions have been omitted and replaced with special provisions that do not necessitate Competent Authority intervention, e.g., SP 672, SP 663 and SP 667. This approach shifts requirements from being reactive to being proactive, reducing unnecessary time delays and burden for all parties, and supporting consistency in industry practice.

Questions for consultation

Q78. Referring to Section 3.3 Special Provisions, which remove the need for Competent Authority intervention (see Section 5.6.2.4), we'd like to understand from Competent Authorities:

- Approximately how many interventions of this type are currently made per year, on average.
- Approximately how much time is associated with each intervention, on average (i.e. the time it takes for a Competent Authority to reach an outcome/decision from when first approached).
- Approximate effort associated with each intervention, on average (i.e., number of hours by staff level and wage per hour).

Q79. By comprehensively addressing gaps and errors in the current Code, the NTC is expecting that this will reduce the number of industry submissions to Competent Authorities, in particular the number determinations. We seek data from Competent Authorities on the effort expended on each determination, on average (i.e., number of hours by staff level)?

6.4.1.3 Government costs associated with implementing the draft Code

The main costs for Government of implementing the draft Code would be expected to include:

- The adoption of the draft Code into State and Territory legislation. This includes costs associated with the preparation of drafting instructions for Parliamentary Counsel, drafting and printing costs.
- Industry communication and education including the development of guidance material.
- System costs associated with updating electronic information for changes to requirements for the transport of dangerous goods.
- Retraining of dangerous goods inspectors, Competent Authorities and Occupational Health and Safety Personnel.
- Updating databases and revising training manuals and documentation for changes to requirements for the transport of dangerous goods.

- System and staff costs associated the introduction of a register of regulatory changes

Questions for consultation

Q80. We seek estimated costs from each State & Territory to implement the draft Code, as per the breakdowns provided in the list above.

Q81. Are there any State or Territory specific impacts that need to be considered? Please provide details.

6.5 Community and Government

6.5.1 Impact Analysis

6.5.1.1 Avoided dangerous goods transport incidents due to improved compliance with the draft Code (avoided costs to the community and government)

A major benefit of the draft Code to the community is expected to be the maintenance of existing safety levels or a downward trend in incidents associated the transport of dangerous goods by road and rail.

The following section attempts to estimate the current costs to the community associated with dangerous goods transport incidents, as the basis of a breakeven analysis for the D-RIS. It should be mentioned from the outset that there is limited data on road freight incidents and even less on rail freight incidents. As such, the analysis has been undertaken on road freight exclusively. Given data limitations, there is a high level of uncertainty with this analysis, which will be addressed through sensitivity tests in the D-RIS.

Estimated number of dangerous goods accidents and incidents

There are varying estimates of the size of the dangerous goods road freight task in Australia. Responses to the 2006 RIS for the update to ADG 7 (2006 NTC RIS) were varied, with NSW estimating between 10% and 15% of NSW road freight transport vehicles carrying dangerous goods.[54] In 2014, a formal nation-wide survey conducted by the ABS found the road freight share of dangerous goods to be lower between 4.3% and 5.7%, depending on whether comparing tonnes, kilometres, or tonne kilometres.

For the purposes of the Impact Analysis, we propose to use a conservative 5.0% assumption as a proxy for the size of the dangerous goods freight task in Australia.

Table 19 Percentage of all goods transported by road freight classified as dangerous[55]

Dangerous percentage of all goods transported	2013-2014
Percentage of dangerous goods of all kilometres travelled	2.6%
Percentage of dangerous goods of all tonnes transported	4.3%
Percentage of dangerous goods of all tonne kilometres transported	5.7%

Estimated number of dangerous goods road transport fatalities

Data on the number of dangerous goods fatal accidents is not available. Whilst patchy, data from the National Freight Data Hub shows that there were approximately 190 road freight fatalities per year, on average, between 2014 and 2018.[56] Based on the size of the dangerous goods transport task relative to the total freight task, fatalities resulting from the road transport of dangerous goods are estimated to be in the region of 10 fatalities per annum. However, this may be on the high side, as anecdotal evidence suggests

that regulations around dangerous goods may lead to fewer fatalities per dangerous goods transport incident, compared to general freight.

Estimated number of dangerous good road transport serious injuries

Between 2011 and 2021 there were an estimated 782 serious injuries involving road freight accidents, on average, per annum (refer to Table 20). Data on the number of annual hospitalisation of drivers and their passengers from injuries related to road vehicle crashes informs these estimates.[57] For the purposes of the analysis, it is assumed that all heavy transport vehicles, pick-up truck and vans were involved in road freight. The data provides no breakdown of serious injuries attributed to the transport of dangerous goods.

Based on the size of the dangerous goods transport task relative to the total freight task, serious injuries resulting from the transport of dangerous goods are estimated to be in the region of 40 serious injuries, on average, per annum. This estimate is likely to be conservative, as the data set used does not capture pedestrians, cyclists and other road users that may have been impacted by dangerous goods transport incidents.

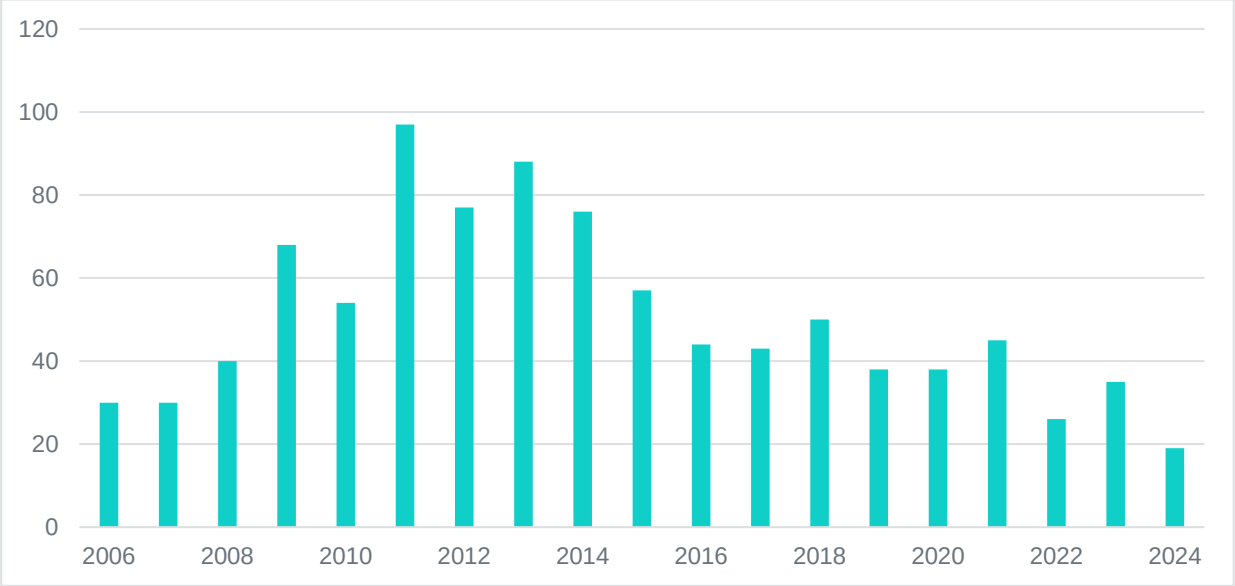
Table 20: Estimated serious injuries involving road freight

Year	Total no. of hospitalised injuries from road crashes	Estimated no. of hospitalisations involving road freight	Estimated no. of hospitalisations involving dangerous goods
2011	34,033	809	40
2012	34,024	784	39
2013	35,001	714	36
2014	35,515	719	36
2015	37,082	759	38
2016	38,963	782	39
2017	39,339	799	40
2018	39,590	832	42
2019	39,866	784	39
2020	37,966	800	40
2021	39,505	816	41
AVERAGE	**37,353**	**782**	**39**

Estimated number of dangerous good road transport incidents

Data on incidents involving dangerous goods is limited, with no formal reporting available. Data provided by ISS First Response, the lead provider of clean-up and emergency response services in the event of a dangerous goods transport accident or incident, is presented in Figure 17. Between 2006 and 2023, ISS First Response responded to 52 incidents per annum, on average. No breakdown of incident by severity (injury, fatality) or cause is available. While this data provides an insight into the number of dangerous goods incidents per year, it is important to note that ISS are only one provider within the emergency response industry and may not be representative of the industry.

Figure 17: Count of road-freight dangerous goods incidents per year[58]



Estimated costs to the community of dangerous goods road transport incidents

Due to the more hazardous nature of dangerous goods, transport incidents involving dangerous goods are more costly to the community compared to general road and rail transport incidents. Incidents involving the transport of dangerous goods have additional cleanup and disposal costs for dangerous substances, as well as environmental impacts and traffic delays during cleanup. A rare but significant additional risk associated with dangerous goods transport incidents is a major fire or explosion involving the dangerous good being transported, with catastrophic impacts to people, property and the environment.

Table 21 Costs per incident, dangerous good road transport ($2024) outlines the estimated costs per dangerous good transport incident, sourced from the 2006 NTC RIS, which were informed by consultations with 50+ stakeholders and a 2003 research study conducted by the Bureau of Infrastructure and Transport and Research Economics. These costs are inclusive of the broader costs to community and government, such as emergency services. For comparison purposes, the table also provides cost rates per incident based on Transport for New South Wales (TfNSW) 2024 Economic Parameter Values.[59] Both parameters are presented in 2024 terms.

Table 21 Costs per incident, dangerous good road transport ($2024)

Accident type (inclusive WTP cost)	2006 NTC RIS ($2024)	TfNSW Guidelines (2024)
Cost per fatal crash (at least one person killed)	$3,430,440	$10,295,799
Cost per serious injury (at least one person hospitalised, but no fatalities)	$933,877	$690,137
Cost per minor injury or spill[60]	$48,250	$112,138

Using the estimated incident rates and the estimated cost per incident, the total cost for all dangerous goods road transport incidents is estimated in the order of $74 million per annum, as set out by the table below.

Table 22 Costs per incident, dangerous good road transport ($2024)

Incident severity	Estimated number of incidents per annum	Cost per incident	Total cost per annum
Fatal incidents	10	$3,430,440	$34,304,400
Incident involving serious injury	40	$933,877	$37,355,064
Incident involving minor injury or spill	52	$48,250	$2,509,015
Total Cost			**$74,168,479**

Additional costs to both industry and government associated with the draft Code are expected to be offset by the anticipated benefits from an improvement in safety levels for the transport of dangerous goods and a subsequent drop in the incident rate. However, other factors may influence the outcome for example, the length of time taken to implement the new legislative package, how the package is adopted by individual States & Territories, take up rate by industry and enforcement activity. Moreover, many dangerous goods transport incidents are essentially road traffic crashes, and no level of change in dangerous goods regulation can completely eliminate the risk of road traffic crashes.

Questions for consultation

Q82. We seek any updates on the data set out in this section including data on the:

- The number of dangerous goods road and rail incidents.
- The proportion of incidents involving a fatality, serious injury, minor injury or spill.
- The costs associated with each type of incident above.

Attachment A – Key differences between the Code and ADR

Attachment A can be accessed via the following link:

https://www.ntc.gov.au/sites/default/files/assets/files/Draft%20Code%20for%20the%20land%20transport%20of%20dangerous%20goods%20-%20Attachment%20A%20-%20Key%20differences%20between%20the%20Code%20and%20ADR.pdf

Attachment B – Survey questions used in consultation on review principles

Attachment B can be accessed via the following link:

https://www.ntc.gov.au/sites/default/files/assets/files/Draft%20Code%20for%20the%20land%20transport%20of%20dangerous%20goods%20-%20Attachment%20B%20-%20Survey%20questions%20for%20review%20principles.pdf

Attachment C – Review principles consultation summary

Attachment C can be accessed via the following link:

https://www.ntc.gov.au/sites/default/files/assets/files/Draft%20Code%20for%20the%20land%20transport%20of%20dangerous%20goods%20-%20Attachment%20C%20-%20Review%20principles%20consultation%20summary.pdf

Attachment D – Draft Code under Option 4

Attachment D can be accessed via the following link:

https://www.ntc.gov.au/sites/default/files/assets/files/Draft%20Code%20for%20the%20land%20transport%20of%20dangerous%20goods%20-%20Attachment%20D%20-%20Draft%20Code%20under%20Option%204_0.pdf

While we have worked to provide a draft of the Code for consultation that is near complete, there are some provisions where we require additional input from stakeholders. These are discussed in section 5.13 of this consultation regulatory impact statement (C-RIS).

Consultation on draft provisions relating to Class 1 – Explosives will also be subject to a separate discussion paper. This paper is expected to be published on NTC's website in early October.

There are still a number of formatting, typographical and cross-referencing issues that will be addressed as we prepare the final draft Code for Ministers. As you can appreciate, the Code is a very large and compact document. We would love your help in identifying any material or drafting issues. You can provide your comments by completing the below downloadable form and including it with your submission on this C-RIS.

Download the comments form here.

Attachment E – Working paper consultation summary

Attachment E can be accessed via the following link:

https://www.ntc.gov.au/sites/default/files/assets/files/Draft%20Code%20for%20the%20land%20transport%20of%20dangerous%20goods%20-%20Attachment%20E%20-%20Working%20paper%20consultation%20summary.pdf

Attachment F – Changes to the Code under Option 4

Attachment F can be accessed via the following link:

https://www.ntc.gov.au/sites/default/files/assets/files/Draft%20Code%20for%20the%20land%20transport%20of%20dangerous%20goods%20-%20Attachment%20F%20-%20Changes%20to%20the%20Code%20under%20Option%204.pdf

Attachment G – Draft Code Dangerous Goods List

Attachment G can be accessed via the following link:

https://www.ntc.gov.au/sites/default/files/assets/files/Draft%20Code%20for%20the%20land%20transport%20of%20dangerous%20goods%20-%20Attachment%20G%20-%20Draft%20Code%20Dangerous%20Goods%20List.xlsx

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