UGL REGIONAL LINX

ENGINEERING WAIVERS

CRN-MAN-CVL-713026361-2250

CRN CM 002

LINKING COMMUNITIES. CONNECTING CUSTOMERS.

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Document Control

Function	Position	Name	Date
Approver	A&E Manager	Lucio Favotto	31/01/2022

Revision	Issue Date	Revision Description
1.4	31/01/2022	UGLRL Operational Standards Template applied
2.0	31/01/2022	First approved and issued UGLRL version

Summary of changes made from previous version

Section	Summary of change
All	This document is based on the previous rail infrastructure maintainer (RIM). Full revision history is available on request from UGLRL.

Chapter 1 Introduction

C1-1 Purpose

This manual provides requirements and guidelines for the development, approval and management of engineering waivers and transit space waivers on the Country Regional Network (CRN) civil infrastructure.

It specifies:

- when waiver requests are required to be submitted;
- the process for evaluating waivers; and
- the process for approving and authorising waivers;

to ensure that the safety risk, technical risk and all other relevant factors are fully assessed and resolved before approval is given to waive engineering standards and standard designs.

This document applies to all designers, constructors and maintainers of CRN civil infrastructure.

C1-2 Context

The manual is part of CRN's engineering standards and procedures publications. More specifically, it is part of the Civil Engineering suite that comprises standards, installation and maintenance manuals and specifications.

Manuals contain requirements, process and guidelines for the management of civil assets and for carrying out examination, construction, installation and maintenance activities.

C1-3 How to read the Manual

The best way to find information in the manual is to look at the Table of Contents starting on page 3. Ask yourself what job you are doing? The Table of Contents is written to reflect the requirements being discussed.

Throughout this manual reference is made to the following levels of Engineering Authority:

- Principal Track and Civil Engineer
- Principal Surveyor
- Area Manager
- Civil Maintenance Engineer
- Superintendent
- Supervisor

C1-4 References

C1-4.1 Australian and International Standards

Nil

C1-4.2 CRN Documents

CRN CS 215	Transit Space
CRN-FRA-RLS-459032646-317	Risk Management Framework
TERM	Transport Enterprise Risk Matrix

C1-5 Definitions

The following defined terms are used throughout this policy:

Engineering Waiver: A document which authorises variations from CRN Engineering Standards and Standard Designs. The variations may be permanent or temporary, and approved only by the Principal Track and Civil Engineer.

District Waiver: A document which authorises variations in line with those allowed within CRN Engineering standards. The variations may be permanent or temporary, and approved by the Civil Maintenance Engineer.

Engineering Authority: Authority to make and approve engineering decisions. The scope of engineering authority may extend to the preparation and approval of specifications, detail design proposals, construction and maintenance processes and standards, as well as products and systems used within the engineering support task

Requesting Officer: The Requesting Officer may be a designer, constructor or maintainer who identifies that an existing or proposed item of infrastructure does/will not comply with UGLRL CRN Engineering Standards and/or Standard Designs.

Chapter 2 Policy

It is UGLRL CRN policy that:

- An engineering waiver must be authorised and registered for infrastructure not complying with the mandatory requirements of CRN Engineering Standards or Standard Designs.
- Engineering waivers will only be approved for circumstances where it can be demonstrated that the risk of allowing the waiver is within acceptable limits.
- The technical content of engineering waivers shall be approved and authorised by persons with engineering authority.
- All engineering waivers shall detail the change in risks and the controls that shall be implemented to manage the identified risks.
- All engineering waivers shall have the conditions of the waiver documented and registered.
- Engineering waivers that apply universally and not just to local circumstances shall, where possible, be adopted within the standard at the time of its next review or update. The waiver shall then be cancelled.

Chapter 3 Introduction to Waivers

C3-1 When is an engineering waiver required?

An Engineering Waiver is required in circumstances where there is an identified variation from standards or standard designs, either existing or proposed.

Some examples of the need for a waiver include

- rate of change of super deficiency greater than standard for existing trackwork
- proposed trial installation of composite sleepers
- proposal to exempt low usage lines from Welded Track Stability Analysis
- infringements of transit space
- short notice, temporary variations to structure examination frequency to cover unforeseen personnel or equipment failures
- reduced available catchpoint landing area

- available slope for surface and subsurface drainage less than required
- transom thickness less than standard.

Non-compliance with a standard may be identified during maintenance or construction activities, or in the design process.

C3-2 When is a transit space waiver required?

A Transit Space Waiver (formerly called a Structure Gauge Infringement) is a special form of Engineering Waiver.

A Transit Space Waiver is required for any location or track section failing to comply with the General Kinematic Structure Gauge as detailed in CRN Engineering Standard CRN CS 215.

The kinematic structure gauge requirements of the waiver shall be developed from the actual rolling stock operating on a line and incorporates site specific track and rolling stock tolerances and a reduced safety clearance margin. It does not include infrastructure service requirements.

It incorporates site specific track tolerances and rolling stock displacements and may require conditions to be placed on the location or rolling stock such as a reduction in train speeds or an increase in inspection or maintenance.

Not all infringements of transit space require approval from the Area Manager. Table 1 summarises the various categories of infringement and lists the approval requirements.

Duration	Inside of	Outside of	Infringement Type	Approving Authority
Permanent	Structure Gauge	200mm from Kinematic	Service Corridor Infringement	Area Manager
	200mm from Kinematic	100mm from Kinematic	Operational Infringement	Area Manager
	100mm from Kinematic	Kinematic	Base Operating Infringement	Area Manager
Temporary	Structure Gauge	200mm from Kinematic	Service Corridor Infringement	Not Required
	200mm from Kinematic	100mm from Kinematic	Operational Infringement	Civil Maintenance Engineer
	100mm from Kinematic	Kinematic	Base Operating Infringement	Civil Maintenance Engineer

Table 1 - Transit space infringement categories

C3-3 When is a district waiver required?

A District Waiver is similar to an Engineering Waiver, with the exception that a district waiver may be issued by the Civil Maintenance Engineer and only within the delegation allowed for through the standards.

Some examples of when a District waiver may be required include

- Adjustment of track off design alignment
- Inability to complete an inspection within the specified timeframe specified in the Technical Maintenance Plan

C3-4 In-principle waivers

In the early design stages of design, a designer may seek advice on the need for a waiver. To assist in the design process, an indication may be given that a particular request would normally be approved. If advice is provided, document the advice. The advice should include information of any likely limits and controls so that designers may assess options.

Similarly, due to the nature of construction and maintenance activities, the maintainer or constructor may seek advice as to whether there is approval in principle with a variation from the standard. To assist in streamlining, an indication may be given by the Area Manager to allow progress of maintenance or construction activities. This advice must be documented and filed until such time that a formal waiver may be approved.

Chapter 4 Waiver process

C4-1 Request

Requests for waivers may come from a designer, maintainer or constructor in response to any identified variation from standards or standard designs, either existing or proposed.

A designer, maintainer or constructor will have undertaken an assessment of the nature and criticality of any actual or planned variation from the CRN Engineering Standard before submission to the Area Manager or the Civil Maintenance Engineer.

The requestor as a minimum is to provide sufficient detail to enable the reviewer to understand the circumstances of the request and the implications of the non-conformance. Waivers which do not provide sufficient information may be rejected. Minimum required information includes;

- Location – Area, line, track kilometrage
- Relevant standard clause or section

- Variation detail
- Identified risks
- Proposed controls
- Proposed duration of waiver
- Justification for waiver
- Supporting documentation
- In case of a Transit Space Waiver the information as identified in CRN CS 215

The forms (Form EW1 and Form TS1) should be utilised to provide the above information as they have been developed to assist with ensuring all relevant information is gathered.

Any technical aspects of the waiver submission shall be developed by a person with the relevant technical competence or engineering authority in the case of an engineering design.

C4-2 Risk Assessment

A risk assessment is required to be undertaken as part of any waiver application and is contained within the Waiver forms (Form EW1 and Form TS1).

The risk assessment is undertaken to identify where practical the change in risk and the associated identified controls necessary to manage those risks.

1. Determine the hazards associated with the change. When reviewing potential hazards consider:
   - Interfaces with other infrastructure eg signalling equipment, bridges, structures, platforms
   - Interfaces with rollingstock
   - Access issues, maintenance and emergencies
   - Any changes to track possession arrangements
   - Fasteners
   - Transit space clearances
   - Potential for rapid deterioration of track geometry or components
   - Potential for a broken rail, misalignment, curve pull-in
   - Risk to staff, rollingstock operators and the public
   - Potential to miss a critical defect during inspection activities
2. Determine the risk of each identified hazard using CRN-FRA-RLS-459032646-317 Risk Management Framework and Transport Enterprise Risk Matrix:
   - Determine the Type of Consequence associated with the hazard (e.g. Service disruption)
   - Establish the Consequence score by assessing its extent
   - Determine the Likelihood of the hazard event by assessing how frequently it could occur, and assign a score.
   - Determine the Risk level from the likelihood and consequence in the matrix
3. Determine appropriate action to manage the risk.

   The risks associated with any variation to a standard or standard design may be judged to be acceptable either by implementing suitable controls to manage the risk or by assessing local operating conditions of that infrastructure to be less rigorous than those assumed by the standard or standard designs.

4. Determine appropriate controls and their control owner and assess the residual risk after the controls are in place
5. Attach all relevant supporting material, including where necessary, photos, calculations, drawings and any other correspondence to demonstrate adequate management of all identified risks to the design record.

If the proposed controls require an increase in the inspection and maintenance requirements, the Superintendent MUST be consulted to establish the availability of on-going funding for implementation of proposed changes.

When a waiver is requested from a technical requirement of the standard, such as Kinematic Infringements and line loadings, the Principal Track and Civil Engineer (or delegate) may request that a more detailed investigation be undertaken to justify the variation from the standard.

C4-3 Verification (Reviewer)

The reviewer is to make a judgement that the proposed risk mitigation controls adequately manage the identified risks and shall be undertaken by a person with appropriate Engineering Authority (or competency as applicable) for the associated task.

In the case of design activities, the Reviewer shall:

- Validate that the correct design process has been followed;
- Check that the design has been undertaken by those with engineering authority;
- Examine the presented evidence to judge that all significant risks have been identified during the waiver assessment and approval process

C4-4 Endorsement

Prior to Authorisation of Engineering Waivers by the Area Manager, the Senior Management Team (SMT) member from the requesting division is required to endorse any Engineering Waivers.

C4-5 Authorisation

The Area Manager will authorise all Engineering Waivers.

The Civil Maintenance Engineer will authorise District Waivers, the Principal Track and Civil Engineer may authorise District Waivers.

The authoriser must not sign until satisfied that the paperwork is complete, or a note is made as to the status if interim authorisation is required.

Management approval is required where the residual risk is undesirable as per Table 2

Management Action				
Residual Risk Ranking		Residual Risk Score	Management or Corrective Action Required	
			Engineering Waivers	District Waiver
L	Broadly acceptable	D	Monitor, manage and carry out activity in accordance with identified controls	
			Principal Track and Civil Engineer to determine the effectiveness of nominated controls	Civil Maintenance Engineer to determine the effectiveness of nominated controls
M	Tolerable	C	Identify and implement appropriate additional control measures so far as is reasonably practicable.	
			Principal Track and Civil Engineer to determine the effectiveness of nominated controls	Civil Maintenance Engineer to determine the effectiveness of nominated controls
H	Undesirable	B	Identify and implement appropriate additional control measures to reduce risk to ~~ALARP.~~ So far as reasonably practical	
			Principal Track and Civil Engineer to determine the effectiveness of nominated controls Asset & Engineering Manager to review and approve Waiver	Civil Maintenance Engineer to determine the effectiveness of nominated controls Maintenance Deliver Manager to review and approve Waiver
E	Unacceptable	A	Waiver is not to be progressed	

Table 2 - Management Action Requirements

C4-6 Notify and update records

When a waiver is authorised:

- register the approved waiver in the waiver register
- forward the pdf version of the authorised waiver (Form EW1 or Form TS1) to relevant parties
- where applicable, register the approved infringement in the transit space waiver register
- update other relevant records

C4-7 Confirmation of waiver controls

Upon implementation of a waiver, the responsible person shall confirm that the controls are in place, and return the wavier with any comments, lessons learnt or recommendations to the relevant authoriser.

The responsible person by default shall be the requestor, unless nominated otherwise (ie site supervisor).

C4-8 Revision of waivers

On occasion a waiver may require amendment. In this case all hazard and controls will need to be reviewed prior to authorisation.

Appendix 1 Engineering / District Waiver Form EW1

Engineering / District* Waiver Approval *(*delete if not applicable)*	Form EW1

Approval number:				Page 1	
Variation:					
Relevant standard and Section:					
Use approved for:					
Area:					
Track:					
	from:		to:		
Start date:		Expiry date:		Permanent	

Variation Details:

Background details (include options considered)

Justification (include cost implications)

	Engineering / District* Waiver Approval *(*delete if not applicable)*	Form EW1
Approval number:		Page 2

Risk Assessment

Consequence Category (CC)	**A** Service Disruption	**B** Reputation	**C** Environment	**D** People (staff/general public)	**E** Stakeholder/ Regulatory reaction	**F** Financial Loss	**G** Property / Rail Assets

Risk	CC	Existing risk			Additional Risk controls	Control Owner	Residual risk			Comments
		L	C	R			L	C	R	

Exclusions/Limitations of Waiver:

Attachments:

Approval

	Requested / Initiated:	Reviewed by:	Endorsed:	Authorised:
Signature				
Name				
Title				
Date				

Engineering / District* Waiver Approval *(*delete if not applicable)*	Form EW1

Approval number:		Page 3

Waiver Implementation (the responsible person to complete and return to Authoriser)					
Risk controls implemented	Yes☐ No☐				
Comments on implementation of waiver / lessons learnt / recommendations for future					
Name		Signature		Date	

Appendix 2 Transit Space Waiver Form TS1

Transit Space Waiver Approval		Form TS1
Approval number:		Page 1

Location Details			
Infringement Structure:			
Structure Gauge Reference:		Structure Gauge Drawing:	
Area:	Line:	Track/s:	
Section from:	Section to:	KM from:	KM to:
Start date:	Expiry date:	Permanent:	

Infringement Details		
Lateral	**Up Side**	
Height From		-
Height To		-
Max Infringement to Structure Gauge		-
Min Clearance to Kinematic Envelope		
Lateral	**Down Side**	
Height From		-
Height To		-
Max Infringement to Structure Gauge		-
Min Clearance to Kinematic Envelope		-
Track Centres		
Max Infringement to Structure Gauge		-
Min Clearance to Kinematic Envelope		-

Conditions of Approval:

Attachments:

Background details (include options considered)

Justification (include cost implications)

Transit Space Waiver Approval	Form TS1

Approval number:		Page 2

Risk Assessment

Consequence Category (CC)	**A** Service Disruption	**B** Reputation	**C** Environment	**D** People (staff/general public)	**E** Stakeholder/ Regulatory reaction	**F** Financial Loss	**G** Property / Rail Assets

Risk	CC	Existing risk			Additional Risk controls	Control Owner	Residual risk			Comments
		L	C	R			L	C	R	

Exclusions/Limitations of Waiver:

Attachments:

Approval

	Requested / Initiated:	Reviewed by:	Endorsed:	Authorised:
Signature				
Name				
Title				
Date				

Transit Space Waiver Approval					Form TS1
Approval number:					Page 3
Waiver Implementation (the responsible person to complete and return to Authoriser)					
Risk controls implemented	Yes☐ No☐				
Comments on implementation of waiver / lessons learnt / recommendations for future					
Name		Signature		Date	