MOORABOOL SHIRE COUNCIL

BRIDGE MAINTENANCE MANAGEMENT PLAN 2021-2025

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Document Control

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Executive Summary

Moorabool Shire is a large, fast growing semi-rural municipality that is responsible for the provision of maintenance services for a variety of Council assets. Council seeks to provide safe road and pedestrian bridges that are fit for purpose for residents and visitors to use. Council also provides a range of services in roads, open space, waste, and many other areas.

Council is responsible for the management and maintenance of 107 bridge and major culverts. The Bridge Maintenance Management Plan (BMMP) identifies responsibilities, maintenance standards and inspection regimes required to manage civil liability as well as demonstrate that Council is responsibly managing all bridge and major culvert assets under its control.

The plan is seen as a dynamic document and the plan and associated registers will be formally reviewed and refined on an ongoing basis to ensure that Moorabool Shire can continue to demonstrate that it is responsibly managing its bridge assets.

The BMMP and the Register of Bridges and Major Culverts will be reviewed and updated as required.

SECTION 1

Introduction

Purpose of the Bridge Maintenance Management Plan

This document provides users and the community an overview of the Bridge Maintenance Management Plan (BMMP) and the responsibilities of Council.

Specifically, the BMMP defines:

- bridge assets (including major culverts) which Council maintains on behalf of the community,
- responsibilities of Council in relation to management of bridge assets,
- standards of performance in relation to the condition of bridge assets which Council can afford,
- policies and procedures in relation to the ongoing inspection of bridge assets, and
- intervention levels and associated response times for Council to address bridge and major culvert asset defects identified in its inspections.

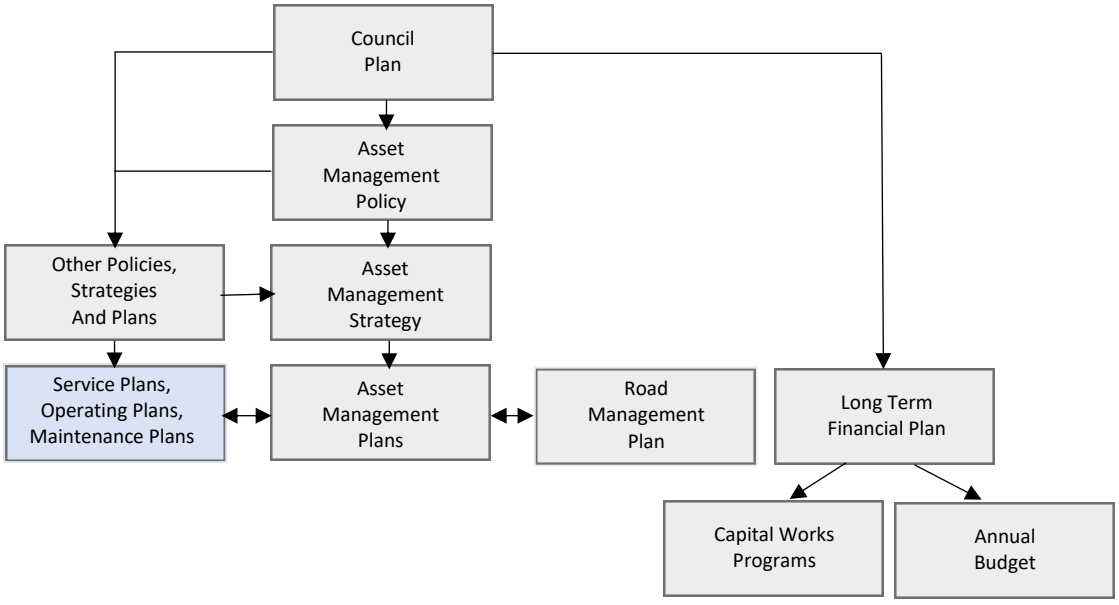
This maintenance plan also documents service frequencies with consideration of community expectation and provides Council with certainty and predictability in asset servicing. In addition, the plan seeks to provide a level of service that maintains the quality and condition of Council's assets within existing Councils budgets and resources.

Relationship with Other Strategic & Operational Documents

The BMMP is a key component of Council's planning and asset management process.

Figure 1 below illustrates the relationship between the BMMP and other strategic asset and operational documents of Council.

Figure 1.



Obligation of Road Users

Even though Council has a responsibility for maintenance of road assets (including bridges) within the Shire, road users also have a responsibility when driving on public roads. Section 17A of the Road Safety Act 1986 (as amended by the Road Management Act) sets out road users' obligations and these are summarised below.

- A person who drives a motor vehicle on a highway must drive in a safe manner having regard to all the relevant factors including (but not limited to) the:

  a) physical characteristics.
  b) prevailing weather conditions.
  c) level of visibility.
  d) condition of the motor vehicle.
  e) prevailing traffic conditions.
  f) relevant road laws and advisory signs; and
  g) physical and mental condition of the driver.

- A road user other than a person driving a motor vehicle must use a highway in a safe manner having regard to all the relevant factors. A road user must have regard to the rights of other road users and the community, taking reasonable care to avoid conduct that may:

  a) endanger the safety and welfare of another road users.
  b) damage the infrastructure on the road reserve; or
  c) harm the environment of the road reserve.

- For cyclists and pedestrians, the duty includes keeping a proper lookout and being responsible for their own safety.

Scope

The BMMP covers all bridge and major culvert related assets for which Council is responsible, as defined in Council's Bridge and Major Culvert Register. Assets covered include:

- Road surface material (spray seal, asphalt, or gravel) over road bridges.
- Traffic control devices on a bridge or approach (guard rails, line marking and signage).
- Footpaths, bicycle paths and shared pathways on a bridge or approach (Refer to Council's Road Management for path hierarchy and inspection frequencies specifically).
- Bridge drainage, including scuppers; and
- Vegetation around a bridge or approach.

The Plan excludes a number assets, and hence from the coverage of a BMMP:

- Minor road culverts.
- Culverts under driveways (including endwalls).
- Street trees, whether or not planted by Council.
- Culverts under driveways (including endwalls); and
- Any stormwater pits, pipes, or associated structures.

Availability of the Plan

The Bridge Maintenance Management Plan and the associated register is available on Council's website www.moorabool.vic.gov.au.

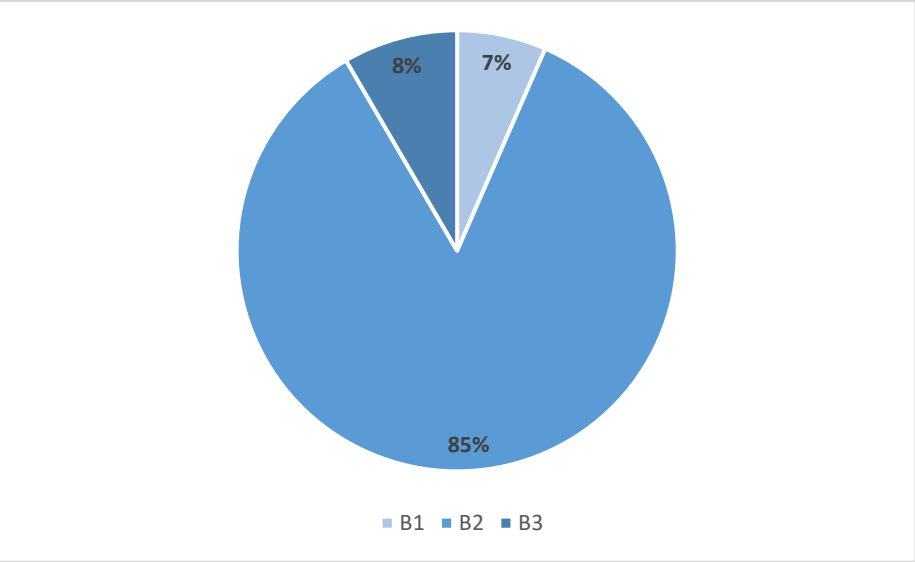
SECTION 2

Moorabool Shire's Bridges

Moorabool Shire's Bridge & Major Culverts

There are 107 bridge and major culverts across the shire which Council are responsible for. Assets that form part of a bridge includes surface type, structure, railing/fencing, culverts, footpaths, drainage, and traffic control (signage).

Figure 2. Bridge and Major Culvert Hierarchy
(See table B.1 for Definitions)



Register of Bridges and Major Culverts

Moorabool Shire Council keeps an asset register which identifies assets required for public use and what Council is the responsible authority for within the Shire.

The Bridge and Major Culvert register provides details about Council's bridge assets including:

- Asset ID.
- Location.
- Bridge Type; and
- Hierarchy.

The register is updated regularly and is available on Council's website.

Demarcation of Responsibility

Demarcation Agreements

Moorabool Shire is bounded by seven municipalities and has agreements for boundary bridges and major culverts regarding maintenance responsibility. The agreement also identifies capital works responsibilities.

There are several bridges and major culverts within the Shire that Council does not own nor maintain. The responsible authorities may include water, road, and rail authorities. Council does not maintain these assets.

Council has a Safety Interface Agreement (SIA) with VLine, Department of Transport and VicTrack as required under the Rail Safety Act 2009. The SIA specifies the respective maintenance responsibilities for roads, bridges, and pathways in the vicinity of any level crossing.

Maintenance of Vegetation around and under Bridge or Major Culvert

Council is responsible for maintenance of vegetation around and under the bridges and major culverts identified in its register to ensure:

- Trees or tree limbs that are in immediate likelihood of falling on bridge and/or roadway are either trimmed or removed.
- Vegetation that has grown on or around the bridge restricting the safe sight distance or viewing of signage is either trimmed or removed.
- Vegetation growth in structural joints, mortar joints, cracks, and other locations on and around structure is cleared; and
- The structures are kept clear and are not blocked from build-up of vegetation or debris.

For works that could disturb riverbanks and inlet/outlets, Council will seek permission prior to any works being carried out or where appropriate, refer the defect to the relevant Catchment Management Authority.

SECTION 3

Levels of Service

Asset Hierarchy

All bridge and major culvert assets are classified according to a hierarchy that considers the specific function, types of users and user numbers. Service levels (including inspection frequency, intervention levels and maintenance frequency) are largely based on the respective asset hierarchies. The hierarchy classification is used to assist in prioritising inspection, intervention responses and works. Appendices B and C show the Council's hierarchical classification of bridges, along with definitions.

Service Levels for Bridge and Major Culvert Assets

A level of service is the defined service quality for a particular activity or service area (eg. bridge, culverts etc) against which service performance can be measured. Levels of service typically relate to quality, reliability, responsiveness, accessibility, safety, and cost.

The community levels of service in this plan are outlined below and have been developed from:

- The Council's goals and strategies.
- Knowledge of key issues regarding road infrastructure.
- Standards and legislative requirements.
- Management of risk.
- Available resources (funding levels, staffing, asset capacity); and
- Customer expectations (based on customer requests, surveys, Councillor feedback etc.)

The technical levels of service are the operational or technical measures that are utilised in providing the service. These are detailed within the appendices of the BMMP.

Level of Service Review

The levels of service will be reviewed as required in conjunction with the review of the Road Management Plan.

SECTION 4

Management Tactics

Operations & Maintenance Tactics

Reactive and programmed inspections are carried out on Moorabool's bridges and major culverts to identify required remedial work. These inspections are carried out at frequencies outlined in Appendices B and C.

Reactive maintenance tasks are primarily identified through customer requests and are documented in Council's Customer Request Management System (CRMS). These tasks are assessed and responded to according to Council's service standards.

Council maintains a 24-hour callout service, and emergency issues can be actioned accordingly assuming there are not multiple emergencies. Programmed maintenance tasks are identified by a continuous inspection regime, documented, and then recorded in a data base. All recorded defects are prioritised, and work orders generated for action.

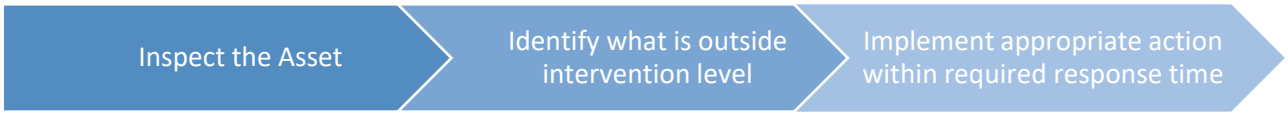
Separate to maintenance inspections, a bridge condition audit is carried out on all bridge and major culvert assets on cyclical basis in order to assist in prioritising capital works.

Managing Risk

Moorabool Shire Council has a risk policy and assessment framework based on AS/NZS ISO 31000:2009 to document known risks and develop management strategies to prioritise and mitigate risks for Council work activities and capital projects.

Council uses methodology that incorporates both reactive and programmed inspections and has documented inspection frequencies, intervention levels and response periods that are designed to minimise and manage the overall risk rating. Specific intervention levels and response periods determined by this process are shown in Appendices B and C.

To help mitigate risk to Council, there is generally a 3-step process in place as follows:



The overall Bridge Maintenance Management Process is listed in Appendix A.

Noting that there are 107 bridge and major culverts which Council is responsible to maintain within the Shire, the risk assessment and intervention responses have been developed on a broad scale.

Council investigates all reported bridge and major culvert incidents in which they are the responsible authority for. Specific sites identified with a recurring accident trend are assessed for suitability for remedial treatment under a range of Federal, State and Local Government funding programs.

Audit & Review Process

Regular reporting of performance against the standards set out in this BMMP is undertaken, identifying non-compliances and management actions determined in order to address non-conformances.

In addition, Council's insurers audit the process periodically to verify that Council has a system to inspect and maintain its assets, recording these activities, and retrieving these records.

The BMMP is subject to a full review every four years following the adoption of a new Road Management Plan.

Events Beyond the Control of Council

Council will make every endeavour to meet all aspects of this plan. However, in the event of a natural disaster or multiple emergency events, as well as human factors (such as, but not limited to, lack of Council staff or qualified contractors) Council reserves the right to suspend compliance with this plan entirely or in part.

Council's Chief Executive Officer (CEO) has delegated authority to suspend the plan and will consider such action following a request from the General Manager Community Assets & Infrastructure.

As soon as circumstances allow, the General Manager Community Assets & Infrastructure will recommend to the CEO when the plan should be reactivated, and the CEO will determine whether to do so.

Emergency Response & Temporary Repair

Emergency response are works that need to be undertaken outside the routine works programs to ensure the safety of the public as a result of an emergency incident. Emergency works include traffic incident management, response to fires, floods, storms and chemical spillages, and assistance under the Municipal Emergency Management Plan.

Temporary works are undertaken to reduce the risk of an incident until such time as routine maintenance can be completed. Response times and measures (warning signs, flashing lights, speed reduction, safety barriers) are typically as soon as practicable and is determined based on the risk to safety and the type, volume, and nature of usage.

SECTION 5

Reviewing the Plan

Plan Review

The Bridge Maintenance Management Plan is subject to be reviewed every four years following the adoption of a new Road Management Plan.

Delegation

The General Manager Community Assets & Infrastructure is delegated the authority to amend the Register of Bridges and Major Culverts associated with this plan.

SECTION 6

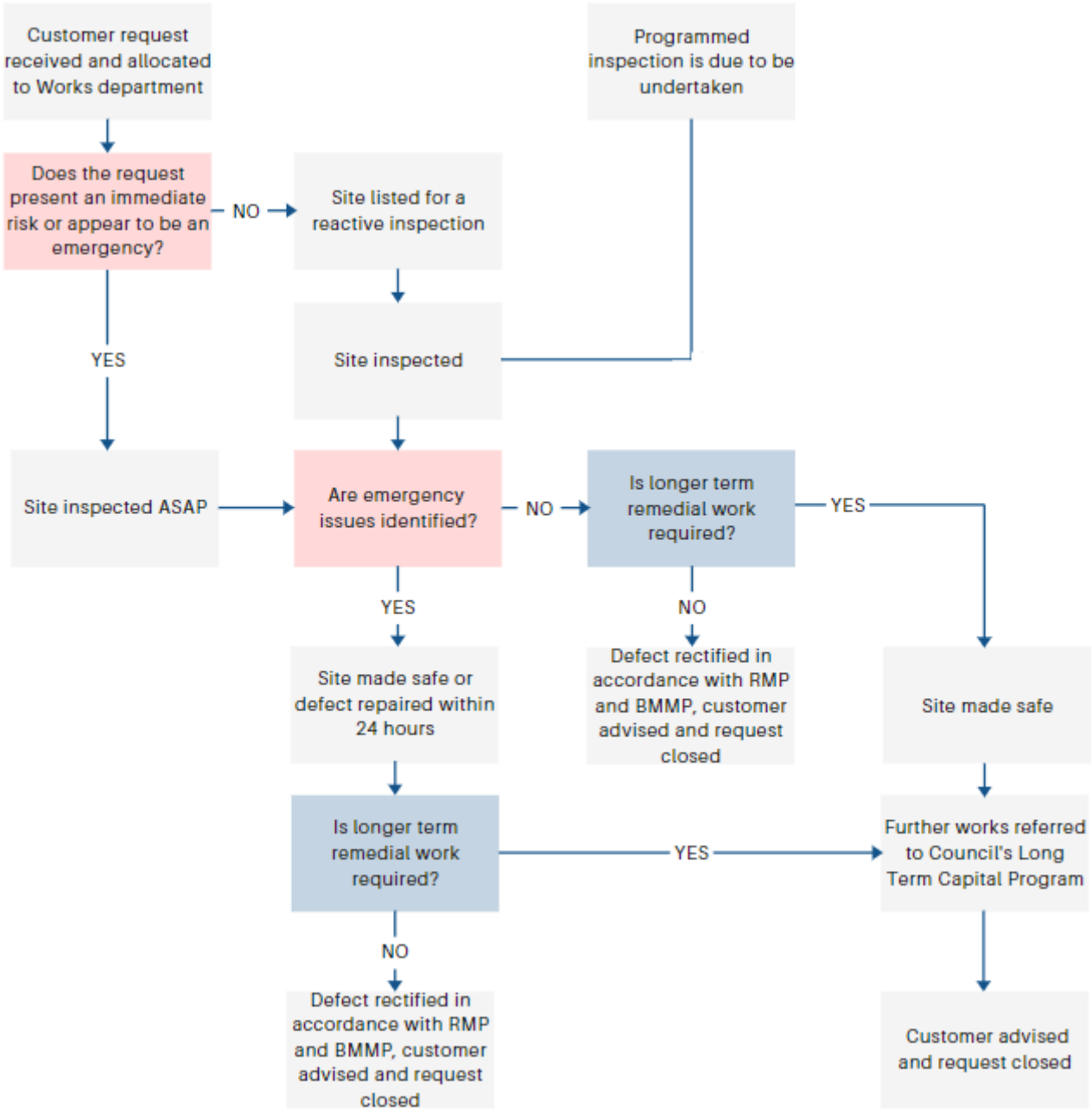
Appendices

List of Appendices

- Appendix A Bridge and Major Culvert Management System Process Map
- Appendix B Bridge and Major Culvert Hierarchy, Inspections & Intervention Levels
- Appendix C Register of Bridges and Major Culverts

Appendix A; Bridge and Major Culvert System Process Map

Bridge and Major Culvert Process Map



Appendix B; Hierarchy, Inspections & Intervention Levels

Table B.1 Bridge and Major Culvert Hierarchy Definitions

CODE	HIERARCHY	DESCRIPTION	
		Purpose & Use	Classification
B1	Bridge 1	Bridge or major culvert on a Trunk Collector or Collector road.	High use bridge or culvert
B2	Bridge 2	Bridge or major culvert on any other road.	Low use bridge or culvert
B3	Bridge 3	Bridge used exclusively for pedestrians or cycling.	Pedestrian bridges

Table B.2 Bridge & Major Culvert Inspection Types & Frequency

			INSPECTIONFREQUENCY (by hierarchy category)		
INSPECTION TYPE		DESCRIPTION	B1	B2	B3
PROACTIVE	Level 1 Inspections	Visual inspections that are completed by Council's Assets Inspections Officer. This level of inspection reviews the general fitness for purpose and serviceability of the structure and identifies any existing or emerging issues. All visible elements of the asset form part of the inspection (including roadway approaches, footpaths, signs, embankments and waterways in addition to the structural components).	At least every 6M	At least every 12M	At least every 12M
	Level 2 Inspections	Condition inspections that are conducted by an external and certified bridge contractor. This level of inspection focuses on rating the condition of all accessible structural components above ground and at water level, detecting defects in components and identifying maintenance issues or investigating issues or defects identified during a Level 1 inspection.	Every 3 years as per Councils Valuation and Revaluation Policy or if identified during a Level 1 inspection.		
REACTIVE	Level 1 Inspections	Inspection undertaken following notification to Council of a defect or safety issues. The inspection involves an assessment of whether the reported defect has reached the intervention level as defined in Table B.3 to determine whether a maintenance response is required. These inspections are undertaken by Councils Operation Department immediately following flooding, an accident, fire or other natural disaster for bridges and major culverts within the effected area.	Not exceeding 3 Days	Not exceeding 5 Days	Not exceeding 5 Days
	Level 3 Inspections	Detailed engineering inspections that are only conducted as required. Level 3 inspections are usually conducted to investigate critical issues or defects identified during a Level 2 inspection.	As required		

Proactive Inspection

These inspections assess the bridge or culvert for the presence of defects that have reached the intervention level as defined in Table B.3. or provide a condition rating for individual bridge components. Programmed inspections must be recorded for all bridge and culvert assets regardless of the identification of a defect or not.

Inspection Frequency

This is the frequency of inspections to identify defects. The nominated time is not precise, and a 10% margin is allowable. Where the required frequency would result in the inspection falling on a day other than a weekday (any day other than Saturday or Sunday, or a Public Holiday), the inspection may be undertaken on the first following weekday.

Table B.3 Intervention Levels & Response Time

	RESPONSE TIME D = weekday, M = month, Y = year		
LEVEL 1 INSPECTIONS	B1	B2	B3
BRIDGES AND MAJOR CULVERTS			
STRUCTURE OR SURFACE			
Damage to concrete surface or structure. (cracking, abrasion, dampness, deformation, delamination, desintegration, honeycombing, joint leakage, reinforcement corrosion, rust, scaling, spalling, water wash or erosion).	1M Refer to a Level 2 Inspection.		
Defective or damaged bearings and expansion joints (breakage, blockage, corrosion or misalignment).	1M Refer to a Level 2 Inspection.		
Defective or damaged steel caused by corrosion, cracking, loose connection or permanent deformation.	1M Refer to a Level 2 Inspection.		
Defective or damaged bridge members (deck surface, joints, abutments, wingwalls, piers, girders, bearings).	1M Refer to a Level 2 Inspection.		
Bridge deck, footway, expansion joints, scuppers, down-pipes or superstructure, substructure requires cleaning or clearing.	12M	18M	18M
Road surface defects on bridge or bridge approach that are in accordance with the Road Management Plan Intervention Levels.	Refer to RMP* for timeframes.		
Missing or damaged railing or posts (tightening or painting).	6M	6M	6M
Footpath defects on bridge or bridge approach that are in accordance with the Road Management Plan Intervention Levels.	Refer to RMP* for timeframes.		
DRAINAGE & STREAM			
Stream bank, embankments, drainage approaches are >50% defective.	5D to refer to relevant Water Authority.		
Drainage on bridge or major culvert are >50% defective.	3M	3M	3M
Minor scour repairs required.	5D to refer to relevant Water Authority.		
ROADSIDE FURNITURE			
Hazard, warning or regulatory bridge signage that is missing, illegible, damaged or misleading, making them substantially ineffective.	Refer to RMP* for timeframes.		
Guideposts including guard rail reflectors that are missing or damaged, making them substantially ineffective.	Refer to RMP* for timeframes.		
Safety barriers or fencing that is missing or damaged, making it substantially ineffective.	Refer to RMP* for timeframes.		
Linemarking and RRPMs that are missing, defective rail painting, illegible or misleading, making it substantially ineffective.	Refer to RMP* for timeframes.		
Damaged or missing Bridge ID Plate.	12M	12M	12M

VEGETATION			
Trees or tree limbs that are in immediate likelihood of falling on bridge and/or roadway.	Refer to RMP* for timeframes.		
Vegetation that has grown on or around bridge to restrict the safe sight distance or viewing of safety signage.	Refer to RMP* for timeframes.		
Vegetation growth in structural joints, mortar joints, cracksand other locations on and around structure.	12M	12M	12M
EMERGENCY			
Where probable hazard has been identified which constitutes a significant and proximate threat to life, health, property or the environment.	1D	1D	1D

**Road Management Plan*

Response Time

This is the time allowed to respond to a hazard, which is based on consideration of the hazard type and severity. Response time is measured from the time that the hazard is identified by, or notified to, Moorabool Shire Council. The nominated time is not precise, and a 10% margin is allowable.

Appropriate Warning

Where the level of resources or workload required, the nature of the work or where it is not feasible to rectify a hazard within the time shown within Table B.3, appropriate warning of the hazard will be provided until a suitable repair or treatment can be completed. Appropriate warning may include, but is not limited to the following:

- Provision of warning signage
- Traffic control action
- Diverting traffic around the site
- Installation of temporary speed limits
- Lane closures
- Closure of the road to use by certain vehicles (eg. a load limit) or
- Bridge or road closures.

Appendix C; Register of Bridge and Major Culverts

MOORABOOL SHIRE COUNCIL

REGISTER OF BRIDGE AND MAJOR CULVERTS

Asset ID	Asset Name	Locality	Classification	Bridge Type	Bridge Hierarchy	Joining Road Hierarchy	Location Description	Water Crossing
BRG_000075	Bacchus Marsh-Balliang Road	Rowsley	Vehicular Bridge	Major Culvert	B2	Access Level 1	1.2km north of Glenmore Road	Parwan Creek
BRG_000077	Bacchus Marsh-Balliang Road	Rowsley	Vehicular Bridge	Major Culvert	B2	Access Level 1	1km south of Glenmore Road	Unnamed watercourse
BRG_000078	Bacchus Marsh-Balliang Road	Rowsley	Vehicular Bridge	Major Culvert	B2	Access Level 1	120m north east of Paces Lane	Dogtrap Gully Creek
BRG_000099	Bacchus Marsh-Balliang Road	Balliang	Vehicular Bridge	Major Culvert	B2	Access Level 1	1.36km east of Reddens Road	Unnamed watercourse
BRG_000021	Ballan-Egerton Road	Mount Egerton	Vehicular Bridge	Bridge	B2	Access Level 1	1.4km west of Manleys Road	Moorabool River East Branch
BRG_000040	Ballan-Greendale Road	Greendale	Vehicular Bridge	Bridge	B2	Access Level 1	860m west of Greenhills Road	Korjamnunip Creek
BRG_000042	Ballan-Greendale Road	Greendale	Vehicular Bridge	Bridge	B2	Access Level 1	200m south west of Greendale-Myrnong Road	Dale Creek
BRG_000014	Ballan-Meredith Road	Morrisons	Vehicular Bridge	Bridge	B2	Access Level 2	10m north Elaine-Morrisons Road	Moorabool River
BRG_000020	Ballan-Meredith Road	Ballan	Vehicular Bridge	Bridge	B2	Access Level 2	1.2km north of Lennoxs Lane	Unnamed watercourse
BRG_000058	Ballan-Meredith Road	Morrisons	Vehicular Bridge	Bridge	B2	Access Level 2	10m south Elaine-Morrisons Road	Tea Tree Creek
BRG_042504	Beremboke Road	Beremboke	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	635m north of Leveretts Lane	Reilly Creek
BRG_000017	Blacks Road	Beremboke	Vehicular Bridge	Bridge	B2	Unsealed Level 2	950m west of Beremboke Road	Swallowtail Creek
BRG_000038	Blackwood Street	Ballan	Vehicular Bridge	Bridge	B1	Collector	25m north of Simpson Street	Werribee River
BRG_000072	Blackwood Street	Ballan	Pedestrian Bridge	Bridge	B3	Off Road Bridge	15m north of Simpson Street	Werribee River
BRG_000088	Blakeville Road	Blakeville	Vehicular Bridge	Major Culvert	B2	Access Level 2	115m north of Cam Lane	Unnamed watercourse
BRG_000052	Bourkes Road	Darley	Vehicular Bridge	Bridge	B2	Access Level 2	600m west of Condons Lane	Korkuperrimul Creek
BRG_000094	Boyes Close	Maddingley	Pedestrian Bridge	Bridge	B3	Off Road Bridge	North end of Boyes Close	Werribee River
BRG_000001	Bridge Road	Grenville	Vehicular Bridge	Bridge	B2	Unsealed Level 2	1.3km south east of Sand Road	Williamson Creek
BRG_000068	Brisbane Road	Balliang	Vehicular Bridge	Major Culvert	B2	Access Level 2	600m east of Reddens Road	Unnamed watercourse
BRG_006092	Butter Factory Road	Wallace	Vehicular Bridge	Major Culvert	B2	Access Level 1	1.35km east of Westcotts Road	Moorabool River West Branch
BRG_043206	Butter Factory Road	Wallace	Vehicular Bridge	Bridge	B2	Access Level 1	1.3km west of Chapmans Road	Moorabool River West Branch
BRG_000091	Caledonian Park	Ballan	Pedestrian Bridge	Bridge	B3	Off Road Bridge	In Caledonian Park, 100m south east of Blackwood Street	Unnamed watercourse
BRG_006149	Caledonian Park	Ballan	Pedestrian Bridge	Major Culvert	B3	Off Road Bridge	130m east of Jopling Street	Old Railway Alignment
BRG_000039	Cam Lane	Blakeville	Vehicular Bridge	Bridge	B2	Unsealed Level 2	11m west of Spratling Lane	Unnamed watercourse
BRG_000096	Camerons Road	Coimadai	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	510m north of White Lane	Unnamed watercourse
BRG_000025	Cartons Road	Gordon	Vehicular Bridge	Bridge	B2	Access Level 1	150m north of Main Street	Paddock Creek
BRG_000003	Clarendon-Blue Bridge Road	Clarendon	Vehicular Bridge	Bridge	B2	Access Level 2	2km east of Midland Highway	Williamson Creek
BRG_000004	Clarendon-Lal Lal Road	Clarendon	Vehicular Bridge	Bridge	B2	Access Level 1	400m north east of Midland Highway	Back Creek
BRG_000070	Clarendon-Lal Lal Road	Lal Lal	Pedestrian Bridge	Bridge	B3	Off Road Bridge	60m north Vaughan Street	Unnamed watercourse
BRG_043554	Clifton Drive	Bacchus Marsh	Vehicular Bridge	Major Culvert	B2	Access Level 1	25m east of Dowling Drive	Mason Lane drain
BRG_000041	Coles Lane	Greendale	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	1.13km west of Greenhills Road	Korjamnunip Creek
BRG_000035	Dehnerts Road	Bunding	Vehicular Bridge	Bridge	B2	Access Level 2	1km west of Racecourse Road	Moorabool River East Branch
BRG_000050	Dog Trap Gully Road	Rowsley	Vehicular Bridge	Bridge	B2	Unsealed Level 2	120m north of Glenmore Road	Parwan Creek
BRG_000011	Egerton-Ballark Road	Bungal	Vehicular Bridge	Bridge	B2	Access Level 2	55m north of Corries Lane	Unnamed watercourse
BRG_000012	Egerton-Ballark Road	Bungal	Vehicular Bridge	Bridge	B2	Access Level 2	2.8km west of Ballan-Meredith Road	Moorabool River East Branch
BRG_000057	Egerton-Ballark Road	Bungal	Vehicular Bridge	Bridge	B2	Access Level 2	300m south of McFarlanes Lane	Unnamed watercourse
BRG_000019	Egerton-Bungeeltap Road	Bungal	Vehicular Bridge	Bridge	B2	Unsealed Level 2	1.6km west of Ballan-Meredith Road	Moorabool River East Branch
BRG_000071	Elaine-Egerton Road	Bungal	Vehicular Bridge	Bridge	B2	Access Level 2	1.75km west of Egerton-Ballark Road	Moorabool River West Branch
BRG_040019	Elaine-Egerton Road	Elaine	Vehicular Bridge	Major Culvert	B2	Access Level 2	80m east of Mount Doran Road	Unnamed watercourse
BRG_000015	Elaine-Morrisons Road	Elaine	Vehicular Bridge	Bridge	B2	Access Level 2	2.3km east of Elaine-Egerton Road	Tea Tree Creek
BRG_000016	Elaine-Morrisons Road	Elaine	Vehicular Bridge	Bridge	B2	Access Level 2	2km east of Elaine-Egerton Road	Tea Tree Creek
BRG_000059	Elaine-Morrisons Road	Elaine	Vehicular Bridge	Bridge	B2	Access Level 2	390m north of Lal Lal Road	Tea Tree Creek
BRG_000002	Elaine-Mount Mercer Road	Cargerie	Vehicular Bridge	Bridge	B2	Access Level 2	115m west of Bamganie Road	Cargerie Creek
BRG_000053	Elaine-Mount Mercer Road	Cargerie	Vehicular Bridge	Bridge	B2	Access Level 2	2.9km west of Midland Highway	Unnamed watercourse

Asset ID	Asset Name	Locality	Classification	Bridge Type	Bridge Hierarchy	Joining Road Hierarchy	Location Description	Water Crossing
BRG_000054	Elaine-Mount Mercer Road	Cargerie	Vehicular Bridge	Bridge	B2	Access Level 2	1.3km east of Horsehill Road S	Unnamed watercourse
BRG_000047	Fisken Street	Bacchus Marsh	Vehicular Bridge	Bridge	B1	Trunk Collector	355m north Taverner Street	Werribee River
BRG_000013	Forest Road	Morrisons	Vehicular Bridge	Bridge	B2	Access Level 2	1.4km north of Sailors Gully Road	Dolly Creek
BRG_000101	Gargans Road	Meredith	Vehicular Bridge	Bridge	B2	Unsealed Level 2	180m north of Midland Highway	Coolebarghurk Creek
BRG_000105	Gascards Lane	Gordon	Pedestrian Bridge	Bridge	B3	Off Road Bridge	150m south of Old Melbourne Road	Unnamed watercourse
BRG_000018	Glenmore Road	Mount Wallace	Vehicular Bridge	Bridge	B2	Access Level 2	4.75km east of Geelong-Ballan Road	Unnamed watercourse
BRG_000061	Glenmore Road	Glenmore	Vehicular Bridge	Bridge	B2	Access Level 1	4.1km west of Dog Trap Gully Road	Spring Creek
BRG_000095	Greendale-Myrniong Road	Greendale	Pedestrian Bridge	Bridge	B3	Off Road Bridge	50m south east of Ballan-Greendale Road	Werribee River
BRG_041109	Halletts Way	Darley	Vehicular Bridge	Major Culvert	B1	Collector	226m north of Ramsay Crescent	Cairns Drive Drain
BRG_041244	Halletts Way	Bacchus Marsh	Vehicular Bridge	Bridge	B1	Trunk Collector	5m north of Werribee Vale Road	Werribee River
BRG_000060	Hamills Lane	Mount Wallace	Vehicular Bridge	Bridge	B2	Unsealed Level 2	1.4km west of Geelong-Ballan Road	Unnamed watercourse
BRG_000028	Hanrahans Road	Bungaree	Vehicular Bridge	Bridge	B2	Unsealed Level 2	890m east of Torpys Road	Two Mile Creek
BRG_000010	Harris Road	Lal Lal	Vehicular Bridge	Bridge	B2	Unsealed Level 2	1km east of Duggan Lane	Moorabool River West Branch
BRG_000055	Harris Road	Lal Lal	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	100m north Old Racecourse Road	Lal Lal Creek
BRG_000056	Harris Road	Lal Lal	Vehicular Bridge	Bridge	B2	Unsealed Level 2	60m north of Lal Lal Falls Road	Unnamed watercourse
BRG_000082	Hopgoods Road	Clarendon	Vehicular Bridge	Bridge	B2	Unsealed Level 2	400m south west of Midland Highway	Williamson Creek
BRG_000092	Kellys Road	Grenville	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	4.6km west of Bridge Road	Yarrowee River
BRG_000046	Lerderderg Gorge Road	Darley	Vehicular Bridge	Bridge	B2	Access Level 1	2km west of Gisborne Road	Goodmans Creek
BRG_006270	Lerderderg Park Trail	Merrimu	Pedestrian Bridge	Bridge	B3	Off Road Bridge	Alongside Lerderderg River approximately 740m south of Gisborne Road	Lerderderg River
BRG_000024	Llandeilo North Lane	Ballan	Vehicular Bridge	Bridge	B2	Unsealed Level 2	570m north of Old Melbourne Road	Paddock Creek
BRG_000098	Martin Street	Blackwood	Vehicular Bridge	Bridge	B2	Unsealed Level 2	430m north of Grace Road	Lerderderg River
BRG_041118	Monteville Lane Bridge	Ballan	Vehicular Bridge	Bridge	B2	Unsealed Level 2	750m from the start of gravel section	Water Stream
BRG_000034	Moorabool West Road	Bunding	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	380m east of Callaghans Lane	Moorabool River East Branch
BRG_006150	Moorabool West Road	Bunding	Vehicular Bridge	Major Culvert	B2	Access Level 2	290m north of Dehnerts Road	Unnamed watercourse
BRG_000081	Mount Doran Road	Elaine	Vehicular Bridge	Major Culvert	B2	Access Level 2	500m south of Mystery Lane	Unnamed watercourse
BRG_000080	Mount Doran-Egerton Road	Mount Doran	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	290m west McAllisters Lane	Unnamed watercourse
BRG_040020	Myers Road	Pentland Hills	Vehicular Bridge	Major Culvert	B2	Access Level 2	1.2km west of Pentland Hills Road	Unnamed watercourse
BRG_000043	Myrniong-Korobeit Road	Korobeit	Vehicular Bridge	Bridge	B2	Access Level 2	210m east of Lawson Lane	Stony Hut Creek
BRG_000097	North Blackwood Road	Blackwood	Vehicular Bridge	Bridge	B2	Unsealed Level 2	140m north of Golden Point Road	Lerderderg River
BRG_000026	Old Melbourne Road	Millbrook	Vehicular Bridge	Major Culvert	B2	Access Level 1	150m west of McGuigans Road	Moorabool River West Branch
BRG_000062	Old Melbourne Road	Bungaree	Vehicular Bridge	Major Culvert	B2	Access Level 1	125m east of Lesters Road	Lal Lal Creek
BRG_000074	Old Melbourne Road	Dunnstown	Vehicular Bridge	Major Culvert	B2	Access Level 1	975m south of Lesters Road	Two Mile Creek
BRG_000022	Old Melbourne Road	Ballan	Vehicular Bridge	Bridge	B2	Access Level 1	450m west of Racecourse Road	Unnamed watercourse
BRG_000023	Old Melbourne Road	Ballan	Vehicular Bridge	Bridge	B2	Access Level 1	1.8km west of Racecourse Road	Paddock Creek
BRG_000045	Old Western Highway	Myrniong	Vehicular Bridge	Bridge	B2	Access Level 1	750m east of Myrniong-Korobeit Road	Myrniong Creek
BRG_000103	Old Western Highway	Myrniong	Vehicular Bridge	Major Culvert	B2	Access Level 1	750m east of Myrniong-Korobeit Road	Myrniong Creek
BRG_038931	Palmers Lane	Pentland Hills	Vehicular Bridge	Major Culvert	B2	Access Level 2	290m north of Dunbar Road	Unnamed watercourse
BRG_000044	Pattinsons Lane	Korobeit	Vehicular Bridge	Bridge	B2	Access Level 2	950m east of Myrniong-Korobeit Road	Myrniong Creek
BRG_040559	Pinnacle Court Bridge	Bacchus Marsh	Vehicular Bridge	Major Culvert	B2	Access Level 2	170m west of Masons Lane	Masons Lane Drain
BRG_000065	Recreation Reserve Road	Blackwood	Vehicular Bridge	Bridge	B2	Access Level 2	300m north worth of Simmons Reef Road	Lerderderg River
BRG_000005	Ryans Road	Yendon	Vehicular Bridge	Bridge	B2	Unsealed Level 2	610m north of Yendon-Egerton Road	Unnamed watercourse
BRG_000033	S Conroy Road	Bunding	Vehicular Bridge	Bridge	B2	Unsealed Level 2	1.8km west of Ballan-Daylesford Road	Moorabool River East Branch
BRG_000100	Simmons Reef Road	Blackwood	Vehicular Bridge	Major Culvert	B2	Access Level 2	150m west of Skinners Road	Back Creek
BRG_000030	Spargo Creek Road	Bolwarrah	Vehicular Bridge	Bridge	B2	Access Level 2	530m east of Linehans Road	Moorabool River West Branch
BRG_000031	Spargo Creek Road	Bolwarrah	Vehicular Bridge	Major Culvert	B2	Access Level 2	1.9km west of Ballan-Daylesford Road	Moorabool River East Branch
BRG_000051	Spargo Creek Road	Wallace	Vehicular Bridge	Bridge	B2	Access Level 2	1km west of Conroys Lane	Moorabool River West Branch
BRG_000032	Spargo-Blakeville Road	Bolwarrah	Vehicular Bridge	Bridge	B2	Unsealed Level 2	360m east of Ballan-Daylesford Road	Spargo Creek

Asset ID	Asset Name	Locality	Classification	Bridge Type	Bridge Hierarchy	Joining Road Hierarchy	Location Description	Water Crossing
BRG_000037	Spencer Road	Ballan	Vehicular Bridge	Bridge	B2	Access Level 1	140m west of Cowie Street	Werribee River
BRG_000029	Springbank Road	Springbank	Vehicular Bridge	Bridge	B2	Access Level 1	480m west of Old Corbetts Road	Moorabool River West Branch
BRG_000036	Stone Hut Lane	Ballan	Vehicular Bridge	Bridge	B2	Access Level 2	750m west Aldreds Lane	Werribee River
BRG_000064	Stone Hut Lane	Ballan	Vehicular Bridge	Bridge	B2	Access Level 2	695m west of Aldreds Lane	Unnamed watercourse
BRG_000086	Stone Hut Lane	Ballan	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	250m south of Aldreds Lane	Unnamed watercourse
BRG_038755	Stonehill Drive	Maddingley	Vehicular Bridge	Major Culvert	B2	Access Level 2	18m west of Cassinia Boulevard	Unnamed watercourse
BRG_038754	Stonehill Pedestrian Bridge	Maddingley	Pedestrian Bridge	Bridge	B3	Off Road Bridge	In Melbourne Water reserve north west of Lomandra Avenue	Unnamed watercourse
BRG_000027	Triggs Road	Bungaree	Vehicular Bridge	Bridge	B2	Access Level 2	600m east of Lesters Road	Lal Lal Creek
BRG_000069	Vinecombes Lane	Gordon	Vehicular Bridge	Major Culvert	B2	Unsealed Level 2	1.1km south of Moorabool West Road	Unnamed watercourse
BRG_000048	Woolpack Road	Bacchus Marsh	Vehicular Bridge	Bridge	B1	Collector	610m south of Bacchus Marsh Road	Werribee River
BRG_000049	Woolpack Road	Maddingley	Vehicular Bridge	Bridge	B1	Collector	1.15km south of Bacchus Marsh Road	Parwan Creek
BRG_000006	Yendon-Egerton Road	Yendon	Vehicular Bridge	Bridge	B2	Access Level 1	360m east of Yendon-Lal Lal Road	Spring Creek
BRG_000007	Yendon-Egerton Road	Yendon	Vehicular Bridge	Bridge	B2	Access Level 1	1.9km east of Dunnstown-Yendon Road	Lal Lal Creek
BRG_000008	Yendon-Egerton Road	Millbrook	Vehicular Bridge	Bridge	B2	Access Level 1	1.15km west of McGuigans Road	Moorabool River West Branch
BRG_000009	Yendon-Egerton Road	Millbrook	Vehicular Bridge	Major Culvert	B2	Access Level 1	940m east of McGuigans Road	Black Creek
BRG_000066	Yendon-Egerton Road	Mount Egerton	Vehicular Bridge	Major Culvert	B2	Access Level 1	240m west of Sharrocks Road	Woollen Creek

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