

APPENDIX 1 - DEFECT RISK ASSESSMENT

AS/NZS 4360 – RISK MANAGEMENT STANDARD

DETERMINING DEFECT RISK LEVEL: Likelihood of Defect Causing Incident	Consequences of Incident Occurring				
	Insignificant <i>(No injuries or damage to property) I.e. Graffiti or Litter</i>	Minor <i>May cause slight damage to property or require first aid treatment</i>	Moderate <i>Significant damage or medical treatment required</i>	Major <i>Extensive injuries or damage to property</i>	Catastrophic <i>Potential death or permanent disability or Extensive damage to property</i>
Almost certain <i>(expected to occur in most circumstances)</i>	H	VH	E	E	E
Likely <i>(probably occur in most circumstances)</i>	M	H	VH	VH	E
Moderate <i>(could occur at some time)</i>	M	M	H	H	VH
Unlikely <i>(not likely to occur, but possible)</i>	L	L	M	H	H
Rare <i>(may occur only in exceptional circumstances)</i>	L	L	L	M	M

Risk Level Key:

- Extreme Risk (E)**
- Very High Risk (VH)**
- High Risk (H)**
- Moderate Risk (M)**
- Low Risk (L)**

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APPENDIX1 (Cont.)

1. RISK RANKING METHODOLOGY

The following is a brief description of the risk ranking system.

Consequences:

- Insignificant** – No injuries or property damage
- Minor** – First Aid Treatment required / Slight property damage < \$5,000
- Moderate** – Serious Injuries / Substantial Financial Loss - \$5,000 to \$50,000
- Major** – Extensive Injuries / Significant Financial loss - \$50,000 to \$250,000
- Catastrophic** – Potential Fatalities /Extensive Financial loss > \$250,000

Likelihood:

- Rare Event** – May only occur in exceptional circumstances
- Unlikely** – Not likely to occur, but is possible
- Moderate** – Could occur at some time
- Likely** – Probably occur in most circumstances
- Almost Certain** – Expected to occur in most circumstances

2. FOOTPATH DEFECTS

The following represents the intervention level categories for footpath defects:

a) Defect Types

- Cracks < 10mm
- Cracks > 10mm
- Displacements <30mm
- Displacements >30mm & <50mm
- Displacements >50mm

b) Rectification Response Times

(i) Determined via programmed inspections

Programmed footpath inspections will be undertaken in accordance with the inspection regime set out in Appendix 2. Defects discovered during programmed inspections will be rectified as per Attachment 1.

(ii) Determined via reactive inspections

Reactive inspection is a physical site inspection resulting from a reported incident or where the information provided for a footpath complaint does not accord with programmed inspection data and is not part of the programmed inspection regime.

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Risk Rating ¹	Response Time to <i>Make Safe</i>	RESPONSE TIME FOR REPLACEMENT					
		FOOTPATH HIERARCHY					
		HIGH	MEDIUM	LOW			
		>30mm	<30mm	>50mm	<50mm	>50mm	<50mm
Extreme	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Very High	N/A	N/A	N/A	N/A	N/A	N/A	N/A
High	Within 10 Days	24 mths	24 mths	N/A	N/A	N/A	N/A
Moderate	Within 20 Days	24 mths	24 mths	DCWF*	DCWF	DCWF	DCWF
Low	Within 20 Days	24 mths	24 mths	DCWF	DCWF	DCWF	DCWF

* DCWF means “Dependent on Annual Capital Works funding levels for footpath rehabilitation”.

“Make Safe” means –

- On a high classification pathway for a displacement defect >30mm paint with road marking paint to highlight the hazard and arrange asphalt repair to remove the displacement (i.e. ramp the trip hazard).
- On a high classification pathways, for a displacement defect <30mm or for cracks >10mm: paint with road marking paint to highlight the hazard.
- On a medium and low classification pathways, for a displacement defect >50mm: paint with road marking paint to highlight the hazard and arrange asphalt repair to remove the displacement (i.e. ramp the trip hazard).
- On a medium and low classification pathways, for a displacement <50mm or cracks >10mm: paint with road marking paint to highlight the hazard.
- Make safe may also include footpath closures, barricades; signage or removal.
- In all cases asset condition will continue to be monitored during the programmed condition rating inspections. Replacement work will be programmed and actioned as per the table above.

All footpath defects are recorded then prioritized in Councils Capital Works Program in accordance with the footpath classification and the available Capital Works funding levels for footpath rehabilitation.

¹ Note – The risk level can also be influenced by the footpath classification. A footpath with higher pedestrian generation than another may affect the risk rating and priority to action the defect.

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Footpath Hierarchy Definitions

- “High” - See Section 5.8 of the Road Management Plan (RMP)
- “Medium” - See Section 5.8 of the Road Management Plan (RMP)
- “Low” - See Section 5.8 of the Road Management Plan (RMP)

3. ROAD DEFECTS

(a) Road Delineation

- (i) Typical assets to be inspected on programmed inspections include but are not limited to:**
- Safety Signs - regulatory signs, warning signs, parking signs and guide signs
 - Guideposts - roadside guideposts, fireplug markers,
 - Safety Barriers - guardrails and pedestrian fencing
 - Line marking - centre road, intersection and parking bays
 - Pavement Markers - reflective raised pavement markers

(ii) Rectification Response Times:

Risk Rating	Response Time to Make Safe or Assessed	Response time to Rectify or Refer to Capital works Program
Extreme	Immediate / within 4 Hours	Within 24 Hours
Very High	Within 4 Hours	Within 2 Days
High	Within 8 Hours	Within 7 Days
Moderate	Within 2 Days	Within 8 Weeks
Low	Within 2 Days	Programmed Works

(b) Road Pavements

- (i) Typical defects to be identified through programmed inspections include but are not limited to:**
- Fallen or Hazardous Materials
 - Potholes
 - Oil Spills
 - Deformations or Blow-out
 - Edge Drops

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(ii) Rectification Response Times:

Risk Rating	Response Time to Make Safe or Assessed	Response time to Rectify or Refer to Capital works Program
Extreme	Immediate / within 2 Hours	Within 24 Hours
Very High	Within 4 Hours	Within 2 Days
High	Within 8 Hours	Within 7 Days
Moderate	Within 2 Days	Within 8 Weeks
Low	Within 2 Days	Programmed works

(iii) Definitions

“**Make Safe**” May include temporary repairs, barricades, signs or removal. Make safe may complete the request therefore no further action is required.

“**Rectification**” When beyond normal maintenance i.e. >\$5K the defect is recorded and prioritised in accordance with Councils adopted Capital Works Program. ¹ Please Note: - The risk level can also be influenced by the category of the road. A road category with more exposure than another may affect the risk rating and priority to action the defect.

“**Programmed Works**” When works are risk assessed as “Low” they are deemed to be (Programmed Works) the defect or works request will be monitored via the designated inspection program with any deterioration been risk assessed in accordance with Appendix A with a response time to “Make Safe” allocated accordingly.

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APPENDIX 2 – INSPECTION PROGRAM (RURAL)

ACTIVITY	INSPECTION FREQUENCY					
	SEALED				UNSEALED	
	COLLECTOR & MAJOR ROADS		LOCAL ACCESS ROAD		LOCAL ACCESS ROAD	
	CONDITION	DEFECT	CONDITION	DEFECT	CONDITION	DEFECT
Pavement	3 years	Monthly	3 years	Annually	3 years	Monthly
Shoulder	3 years	Monthly	3 years	Annually	3 years	Monthly
Drainage	5 years	Monthly	5 years	Annually	5 years	Monthly
Maintenance of Delineators		Monthly		Annually		Monthly
Guard fence Maintenance	5 years	Monthly	5 years	Annually	5 years	Annually
Guide Signs	5 years	Monthly	5 years	Annually	5 years	Monthly
Regulatory Warning and Instruction Signs	5 years	Monthly	5 years	Annually	5 years	Monthly

Road Hierarchy Definitions

- “Major Road” – See Section 5.4 of the Road Management Plan (RMP)
- “Collection Road” – See Section 5.5 of the Road Management Plan (RMP)
- “Local Access Road” – See Section 5.6 of the Road Management Plan (RMP)

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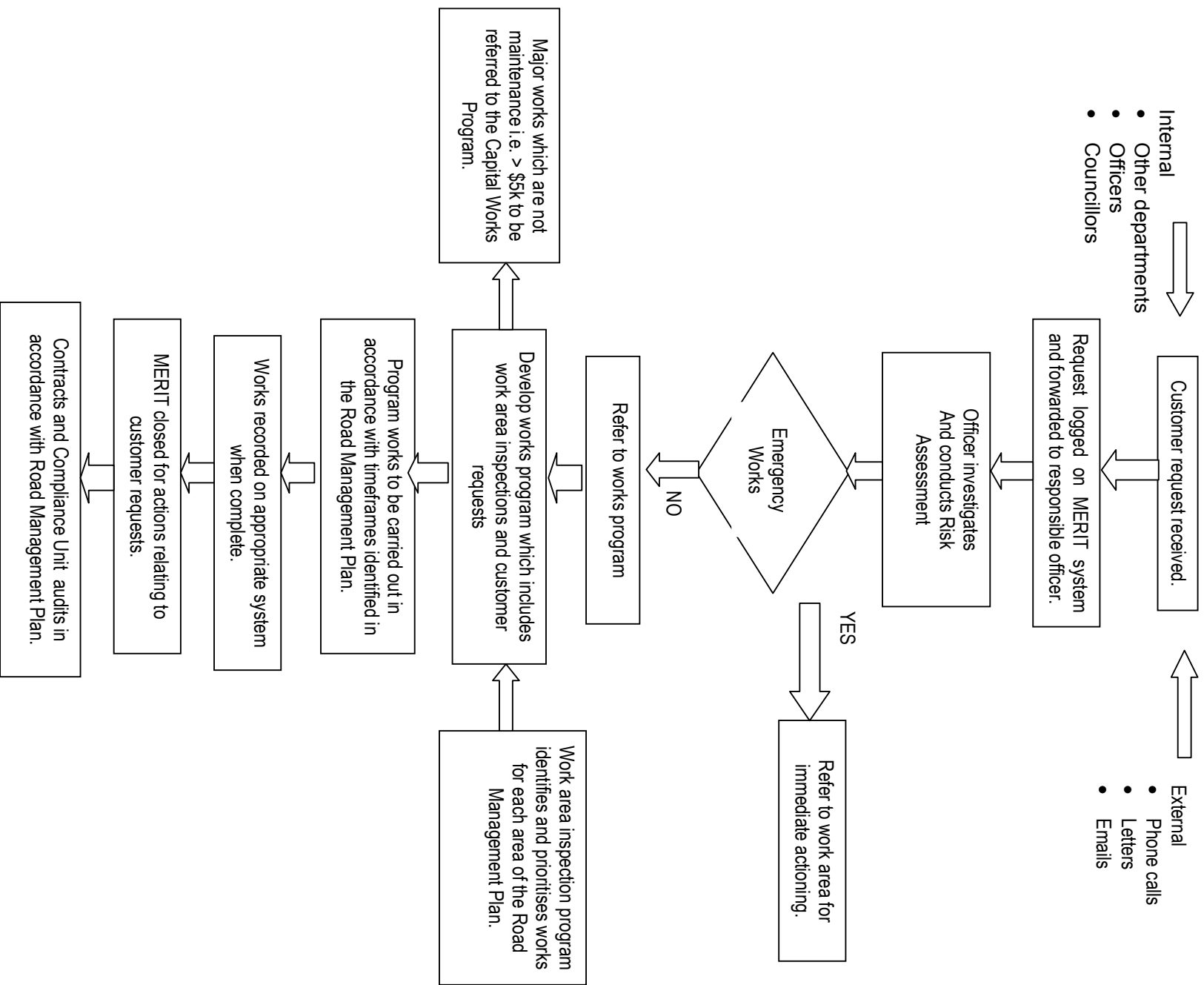
APPENDIX 2 – INSPECTION PROGRAM (URBAN)

ACTIVITY	INSPECTION FREQUENCY					
	SEALED				UNSEALED	
	MAJOR & COLLECTOR ROADS		LOCAL ACCESS ROAD		LOCAL ACCESS ROAD	
	CONDITION	DEFECT	CONDITION	DEFECT	CONDITION	DEFECT
Pavement	3 years	Monthly	3 years	Annually	3 years	Monthly
Surface Drainage	5 years	Monthly	5 years	Annually	5 years	Monthly
Underground Drainage Up to the Value of \$50k annually	5 years		5 years		5 years	
Footpaths	H – 12 months M – 12 months L – 3 years		H – 12 months M – 12 months L – 3 years		H – 12 months M – 12 months L – 3 years	
School Crossings (Supervised)		Each School Day		Each School Day		Each School Day
Guide Signs	5 years	Monthly	5 years	Annually	5 years	Monthly
Regulatory Warning and Instruction Signs	5 years	Monthly	5 years	Annually	5 years	Monthly
Line marking and Delineation		Monthly		Annually		
Night Inspections (Urban Roads only)		Annually				

Note: Night inspections are not undertaken on rural roads.

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APPENDIX 3 – MANAGEMENT SYSTEM TO INSPECT, REPAIR AND MAINTAIN ROAD AND PATH ASSETS



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ATTACHMENT 1

	High Classification Paths		Medium Classification Paths (Industrial Areas)		Low Classification Paths	
	“Make Safe”	Defect Rectification	“Make Safe”	Defect Rectification	“Make Safe”	Defect Rectification
Crack <10mm	N/A	Monitor	N/A	N/A	N/A	N/A
Crack >10mm to <30mm	Spray when inspected	Repair within 24 months	Spray when inspected	DCWF	N/A	DCWF
Cracks >50mm	Asphalt in-fill – 10 days	Repair within 24 months	Spray when inspected Asphalt in-fill – 20 days	DCWF	Asphalt in-fill – 30 days	DCWF
Displacements <10mm	N/A	Monitor	N/A	Monitor	N/A	N/A
Displacements 10mm – 30mm	Spray when inspected	Grind or replace within 24 months	Spray when inspected	DCWF	N/A	DCWF
Displacements >30mm <50mm	Spray when inspected. Temp asphalt ramp within 10 days	Replace within 24 months	Spray when inspected	DCWF	Monitor	DCWF
Displacements >50mm	Spray when inspected. Temp asphalt ramp within 10 days	Replace within 24 months	Spray when inspected Asphalt in-fill within 20 days	DCWF	Asphalt in-fill – 20 days	DCWF

Definitions

- “DCWF” – “Dependent on Annual Capital Works Funding” levels for footpath rehabilitation.

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