

NETWORK OUTCOMES CONTRACT

Visual Audit Guidelines

1 MAY 2020 VERSION 1.1



New Zealand Government

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Record of Amendments

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INTRODUCTION

This guideline has been developed to support the NZ Transport Agency's (NZTA) Network Outcome Contract.

The guideline provides guidance on interpretation of the Operational Performance Measures (OPM) within the Network Outcome Contract and describes how these should be audited in the field.

The purpose of this guideline is to:

- 1. Assist with consistent OPM auditing in the field,
- 2. Assist with achieving a consistent level of service across the NZTA's individual state highway classifications, and
- 3. Avoid unnecessary tension over performance with respect to misinterpretation of operations and maintenance defects.

This guideline is intended to provide guidance and direction to:

- a) Anyone involved in undertaking audits measuring the performance of suppliers against specific OPMs included in the NOC contracts, and
- b) Suppliers programming and prioritising maintenance needs on the state highway.

This document is intended as a guide to ensure a consistent minimum standard of OPM auditing. It is not intended to cover every condition situation that may arise on the network.

This guide does not:

- Cover and contract specific variances,
- · Override the maintenance contract specification performance measures for the contract,
- Cover all performance measures for the contract, and
- Detail how the audit results are to be calculated.





GUIDELINE INSTRUCTIONS

This guideline must be used in conjunction with the OPMs outlined in the Network Outcomes Contract Maintenance Specification and information within the contract appendices. This guideline supports the Network Outcomes Contract document, and therefore if there is any ambiguity between the contract document and this guideline, the contract document takes precedence.

An example OPM table from the Network Outcomes Contract is shown in Figure 1 below.



Figure 1: Example OPM Table extracted from the NOC Document

The OPM table defines the defect and the contract standard (or performance measure) for each of the road classifications. The contract standard varies by road class for some of the OPMs.

It is important to note that this guideline focuses on auditing of the performance measures and assisting with definition of the defect. Figure 2 shows an extract from the Audit Guideline and highlights the key attributes of the document.

Each OPM is typically represented by two pages. The first page defines the defect in words and how to audit/assess it. Where applicable, it also includes either a simple sketch or photograph (or both) to show how the defect is to be assessed. The second page includes a series of photos illustrating typical defects.

In some cases the guideline includes photographs of defects that are acceptable. These defects are highlighted green.

The OPMs contained in the Audit Guideline are ordered based on audit frequency, from 10% Monthly to 100% Annually.



	Γ	OPM	information from th ork Outcomes Con	ne itract		Examples of asset faults, with OPM defects identified
	Network Outcomes Contract	r	NZ Transport Agency Visual Audi	t Guidelines	Network Outcomes Contract	NZ Transport Agency Visual Audit Guidelin
SECT	ION 6.1 - ROUTINE S	EALED PAV	EMENT MAINTENANCE		Marginal	
OPM gro	up 6.1.1	Sample size	Audit frequency		Example: Pavement shove resulting in a def	ormation
Surface i	bumps	100%	Monthly		(peak to trough) of greater than 50mm	and the second second
OPM	Road Class	Contract Standard	Defect	CIP		State of the second second second
8	NatHV(M&E)	No defects	A customer complaint about a noise, vibration or ride nuisance arising from any of:	2 days		
	All Roads (except <u>NatHV</u> (M&E) or ACCLV)	≤ 3 defects.	Contractor's completed work, surface bump or	1 week		And the second
	AccLX	≤ 5 defects.	 service cover in carriageway ± 20mm lip 	1 week		
Example	Defects				Defect	
Settleme	nt of pavement repair, trench or brid	lge abutment which	the contractor has completed or is mo	enitoring.		A LOUGH AND AND A LOUGH AND A LOUGH AND AND A LOUGH AND A LOUGH AND AND A LOUGH AND AND A LOUGH AND AND A LOUGH AND AND AND A LOUGH AND
Assessm	ent Guideline				operator (i.e. monitored work) causing a nois	ie, vibrations
Initial and	accoment by unbials observer				and ride nuisance	1
(i	The - any defects resulting in the Contractor's completed work (Network Outcomes Contract and Strength of the Contractor's Completed work (Network Outcomes Contract and Strength of the Contract and Strength of the Contract	Pro-compliances will re-rompliances will to be dismissed y	The second secon	Autside the	Defect Example: Settlement of recently completed t abutment resulting in a surface bump causin nuisance	ridge g ride
Vi: me	sual guidance of c easurements	defect				
Gu sta	uidance on minim	um g				
Ex	amples of possib	le defects	;			

Figure 2 - Key Attributes of the Audit Guideline

It is important to note that not all OPMs included in the Network Outcomes Contract document are covered in this Audit Guideline. Guidance is only included where this adds value to ensuring consistency of auditing and interpretation of defects. Where an OPM is a reporting measure and no asset inspection/assessment is required, guidance is not provided.



EQUIPMENT CHECKLIST

The following checklist indicates the equipment required for field auditing:

- Approved traffic management plan
- Personnel protective equipment*
- Network Outcomes Contract document
- Approved audit section list and list of the relevant OPMs to be audited for the month in question
- Trip meter or Mobile Road app
- Tape measure
- Straight edge (2 metre)
- RAMM data (signs, culverts, etc.)
- Camera
- Video camera (i.e. Contour, GoPro, etc.)
- Rising disc meter
- Levelling staff (or similar)
- List of current year and year 1 pavement rehabilitation and capital work sites (see Maintenance Specification clause 2.3.2 regarding OPM exclusions)

*see exposure type 4 in the Transport Agency's minimum PPE requirements





OPM MEASURES



100% SAMPLE SIZE MEASURED MONTHLY

Surface Bumps

SECTION 6.1 - ROUTINE SEALED PAVEMENT MAINTENANCE								
OPM group 6.1.1		Sample size	Audit frequency					
Surface b	umps	100%	Monthly					
OPM	Road Class	Contract Standard	Defect	CIP				
8	NatHV(M&E)	No defects	A customer complaint about a noise, vibration or ride nuisance arising from any of:	2 days				
9	All Roads (except NatHV(M&E) or ACCLV)	≤ 3 defects.	 Contractor's completed work, surface bump or service cover in carriageway ± 20mm lip 	1 week				
10	AccLV	≤ 5 defects.		1 week				
Example I	Example Defects							

Settlement of pavement repair, trench or bridge abutment which the contractor has completed or is monitoring.

Assessment Guideline

Initial assessment by vehicle observer.

If necessary, a 2m straight edge is to be laid longitudinally along the carriageway within the wheel path or cycle lanes/path, across the service cover / seal join / bridge abutment. A rule or tape measure is to be used to determine the height of the drop off between surfacing types

Photographic example of assessment





Tip – Defects under this OPM relate to the customer complaint. Each customer complaint is to be verified as being a result of Contractor's completed work, surface bump, or service cover in carriageway > \pm 20mm lip. Customer complaints as a result of other faults are to be dismissed when auditing this OPM.



Marginal

Example: Pavement shove resulting in a deformation (peak to trough) of greater than 50mm



Defect

Example: Unfinished pavement reinstatement left by utility operator (i.e. monitored work) causing a noise, vibrations and ride nuisance



Defect

Example: Settlement of recently completed bridge abutment resulting in a surface bump causing ride nuisance





10% SAMPLE SIZE MEASURED MONTHLY

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Potholes

SECTION 6.1 - ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.1.2			Sample size	Audit frequency	
Potholes		10%	Monthly		
OPM	Road Class	Contract Standard		Defect	CIP
11	NatHV(M&E)	No defects.		Pothole>70mm in diameter.	2 days
12	NatHV, Nat	≤ 1 defect per 5km carriageway section.			2 days
13	Reg, Art	≤ 2 defects per 5km carriageway section.		Pothole>150mm in diameter.	2 days
14	PCol, Scol, Acc, AccLV.	≤ 3 defects per 5km carriageway section.			2 days
15	All Roads	No def	ects.	Pothole > 250mm in diameter.	2 days

Example Defects

Potholes in chipseal, asphaltic concrete and maintenance repairs, located anywhere across the carriageway.

Refer to Appendix Table 1.1 for a definition

Assessment Guideline

Initial assessment by vehicle observer.

If necessary, a tape measure is to be used to determine the average diameter of the pothole

Photographic example of assessment





Acceptable





SECTION 6.1 - POUTINE SEALED PAVEMENT MAINTENANCE

SECTION 0.1 - ROUTINE SEALED PAVEMENT MAINTENANCE								
OPM group 6.1.3			Sample size	Audit frequency				
Deformations, Heaves & Shoves		10%	Vonthly					
OPM	Road Class	Co	ntract Standard	Defect	CIP			
16	NatHV(M&E)	No def	ects.	Deformation, heave or shove with height or depth > 50mm when	1 week			
17	NatHV, Nat	≤ 1 defects per 5km carriageway section.		measured from peak to trough.	1 week			
18	Reg, Art	≤ 2 de carriag	fects per 5km jeway section.		1 week			
19	PCol, Scol, Acc, AccLV	≤ 3 defects per 5km carriageway section.		Deformation, heave or shove with height or depth > 50mm when measured from peak to trough.	1 week			
20	All Roads	No defects.		Deformation, heave or shove with height or depth > 100mm when measured from peak to trough.	2 days			

Example Defects

Uneven surface, heaves, shoves, minor subsidence

Assessment Guideline

Initial assessment by vehicle observer.

If necessary, a 2m straight edge is to be laid across the carriageway (transversely or longitudinally depending on the position of the deformation) and a ruler or tape measure is to be used to determine the height from peak to trough of the deformation





Tip – you won't be able to physically measure faults on CoPTTM Level 2/3 roads. Calibrate your eye by auditing low classification roads first, measuring various sized deformations



Acceptable

Example – Deformation < 50mm



Defect

Example - Pavement shear on the edge line resulting in a deformation (peak to trough) of more than 50mm



Defect

Example - Pavement shear between the wheel tracks resulting in a deformation (peak to trough) of more than 50mm



Flushing and Scabbing

SECTION 6.1 - ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.1.3		Sample size	Audit frequency					
Flushing and Scabbing			10%	Monthly				
OPM	Road Class	C	ontract Standard	Defect	CIP			
23	All Roads	No defects.		Any area >10m length within a carriageway where bleeding of the binder has occurred and is being tracked onto the adjacent surface, reducing skid resistance or creating an amenity nuisance (such as being tracked by pedestrians).				
Example I	Example Defects							
Bleeding causing bitumen to be tracked onto adjacent surface.								
See Appendix Table 1.1 for bleeding definition								

Assessment Guideline

Initial assessment by vehicle observer. Stop and physically assess if required



Tip – you won't be able to physically measure the skid resistance, visual audit of this OPM should focus on amenity and tracking issues.



Acceptable

Example – Minor binder bleeding within wheel paths however not enough to be tracking onto adjacent surface

Defect

Example – Bleeding causing bitumen to be tracked onto adjacent surface



Defect

Example – Significant bleeding causing bitumen to be tracked onto adjacent surfaces





SECTION 6.1 - ROUTINE SEALED PAVEMENT MAINTENANCE								
OPM group 6.1.5			Sample size	Audit frequency				
Flushing a	and Scabbing		10%	Nonthly				
OPM	Road Class	С	ontract Standard	Defect	CIP			
24	All Roads	No defects.		Any area >2m length within a carriageway where chip loss has occurred	2 weeks			
Example I	Defects							
Chip loss from surface within carriageway.								
Assessment Guideline								
Initial asse	essment by vehicle observer.	Stop	and physically asse	ss if required				







Surface Water Channels

SECT	SECTION 6.4.1 - ROUTINE DRAINAGE MAINTENANCE								
OPM group 6.4.1			Sample size	Audit frequency					
Surface Water Channels			10%	Vonthly					
OPM	Road Class	C	ontract Standard	Defect	CIP				
47	NatHV(M&E)	No defects.		Isolated blockage that could allow water to pond or flow onto the carriageway or undermine the asset integrity.	2 weeks				
48	NatHV, Nat, Reg, Art	≤ 1 defects per 5km carriageway section.			2 weeks				
49	PCol, SCol, Acc, AccLV	≤ 5 defects per 5km carriageway section.			2 weeks				
Example	Defects								

Blocked kerb and channel, blocked dish channel

Assessment Guideline

Initial assessment by vehicle observer.

Individual asset inspection may be required in some situations to determine whether the kerb and channel capacity is limited by debris such that water could flow onto carriageway, or undermine asset integrity, during periods of rain

Tip – use a trip meter or measuring wheel to measure out 100m if multiple defects are identified.

Acceptable

Example – Debris blocking dish channel that would not result in water flowing onto the carriageway during periods of rain

Note: this would be considered a defect under OPM 51





Defect

Example – Debris blocking kerb and channel that would result in water flowing onto the carriageway during periods of rain



Defect

Example – Fretting material from adjacent cut batter blocking surface water channel allowing water to pond and potentially flow onto the carriageway or undermine the asset integrity.



Defect

Example - Slip debris from adjacent cut batter blocking surface water channel allowing water to pond and potentially flow onto the carriageway or undermine the asset integrity





SECT	ION 6.4.1 - ROUT	INE	DRAINAGE	MAINTENANCE			
OPM grou	ıp 6.4.1	Audit frequency					
Surface water channels			10%	Monthly			
OPM	Road Class	Contract Standard		Defect	CIP		
50	NatHV(M&E)	No de	fects.	> 50% of the channel hydraulic cross- section inoperative	2 weeks		
51	NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	≤ 5% o chann	of surface water el length.		2 weeks		
Example I	Defects						
Debris bu	ild up in kerb and channel, b	ocked	dish channel				
Assessme	ent Guideline						
Record le Determine Calculate	essment by venicle observer ngth of defective asset e total length of lined surface e percentage of defective ass	water et	channel within audi	tsection			
Photograp	ohic example of assessment						
	Channel 100% Full Level Channel Channel Channel Debris						
	Dish Char	unel	Channel 100% Full Level	Carriageway Channel 50% full			
į	Tip – develop a RAMM S It may be a lot faster than	QL than meas	at can quickly tell yo suring in the field!	u the total asset length within your aud	it sections.		



Defect

Example - Fretting material from adjacent cut batter blocking surface water channel allowing water to pond and potentially flow onto the carriageway or undermine the asset integrity



Defect

Example – Kerb and channel with more than 50% of the hydraulic cross section inoperative due to debris built up



Defect

Example - Dish channel with more than 50% of the hydraulic cross section inoperative due to debris built up



Litter collection

SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM group 6.6.1.3		Sample size	Audit frequency		
Litter colle	ection		10%	Monthly	
OPM	Road Class	C	ontract Standard	Defect	CIP
78	NatHV(M&E)	≤ 150 defects per 5km I carriageway section. t		Litter item visible to anyone who is travelling at normal operating speed.	2 days
79	All Roads (except NatHV(M&E))	≤ 200 carria) defects per 5km ageway section.		
80	NatHV(M&E)	≤ 75 defects per 5km carriageway section.		Litter item visible to anyone who is travelling at normal operating speed in the high-profile litter area (e.g. on and	2 days
81	All Roads (except NatHV(M&E))	≤ 100 carria) defects per 5km ageway section.	off ramps) as defined in Appendix 6.11.	
Example	Dofoata				

xample Delects

Any single item visible to anyone who is travelling at normal operating speed located within the road reserve that is maintained by the Principal, including, but not limited to; paper, refuse, rubbish, glass, metal, garbage, drink bottles, cans and other consumer type objects, and any objects that are not required by the Principal for the functioning of the road.

Assessment Guideline

Assessment by passenger, travelling the audit section in both directions at normal operating speed



Tip – check the local Memorandum of Understanding between the Transport Agency and local authorities for litter collection responsibilities in urban areas. The Transport Agency's responsibilities are generally only between the kerb and channel.



Acceptable

Example - Litter not visible to motorist while travelling at normal operating speed



Defect

Example - Litter items visible to motorist while travelling at normal operating speed. (5 defects)



Defect

Example - Large litter items visible to motorist while travelling at normal operating speed. (5 defects)



Detritus

SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM grou	DPM group 6.6.1.4		Sample size	Audit frequency	
Detritus		10%	Monthly		
OPM	Road Class	C	ontract Standard	Defect	CIP
82	NatHV(M&E)	No d	efects.	An area where there is > 500 grams of detritus (e.g. sealing chip, slip	2 days
83	NatHV, Nat	≤ 2 d carria	efects per 5km ageway section.	material) per two square metres of sealed surface and/or is considered a	2 days
84	Reg, Art, PCol, SCol	≤ 5 d carria	efects per 5km ageway section.		2 days
85	Acc, AccLV	≤ 15 carria	defects per 5km ageway section.		2 days

Example Defects

Loose sealing chip, slip material, dead animal.

Detritus considered a safety hazard is that which is likely to cause a vehicle to lose control, e.g. at curves or intersections), or affect driver behaviour, e.g. requiring evasive action or reduction in speed

Assessment Guideline

Initial assessment by vehicle observer.

For side road intersections – assess first ten metres of side road. For entranceways – assess based on edge of seal at either side

Note: all defects should be recorded, including if there is multiple defects at one location (i.e. a side road intersection)

Example of assessment



NOTE – approx. 500grams



Acceptable

Example – Approx. 250grams of loose seal chip in a 2 square metre area of sealed surface



Defect

Marginal

assessment

Example – More than 500grams of loose seal chip in a 2 square metre area of sealed surface, would also constitute a safety hazard

Example – Approximately 500grams of loose seal chip in a 2 square metre area of sealed surface – warrants specific



Rest area, HCV facility and formed stopping area maintenance

SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM grou	ıp 6.6.1.5		Sample size	Audit frequency		
Rest area and heavy commercial vehicle facility and formed stopping area maintenance			10%	Monthly		
OPM	Road Class	Contract Standard		Defect	CIP	
86	NatHV(M&E), NatHV, Nat, Reg	≤ 2 defects per facility.		Pothole within trafficked area greater than 150mm in diameter.	2 weeks	
87	Art, PCol, SCol, Acc, AccLV	≤ 3 d	efects per facility.			

Example Defects

Potholes within sealed rest area and/or heavy commercial vehicle facilities'

Refer to Appendix Table 1.1 for a definition

Assessment Guideline

Check contract appendix 6.12 - Rest Area and HCV Facility Maintenance Requirements for the schedule of areas to be maintained under the contract.

Initial assessment by vehicle observer.

If necessary, a tape measure is to be used to determine the average diameter of the pothole

Photographic example of assessment





Tip – check contract appendix 6.12 - Rest Area and HCV Facility Maintenance Requirements for the schedule of areas to be maintained under the contract



Acceptable

Example - Pothole is less than 150mm in diameter



Marginal

Example - Pothole in excess of 150mm in diameter



Defect

Example - Pothole in unsealed rest area trafficked area well in excess of 150mm in diameter



SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM grou	лр 6.6.1.5		Sample size	Audit frequency					
Rest area facility an maintena	and heavy commercial vehicle d formed stopping area nce	Э	10%	Monthly					
OPM	Road Class	Contract Standard		Defect	CIP				
88	NatHV(M&E)	≤ 1 defects per facility.		HCV facility not maintained to the special requirements of Appendix	1 week				
89	All Roads (except NatHV(M&E))	≤ 2 d	efects per facility.	Commercial Vehicle Facility Maintenance.	1 week				
Example Defects									

N/A

Assessment Guideline

Check contract appendix 6.12 - Rest Area and HCV Facility Maintenance Requirements for the schedule of areas to be maintained under the contract and their specific maintenance requirements.



Tip – check contract appendix 6.12 - Rest Area and HCV Facility Maintenance Requirements for the schedule of areas to be maintained under the contract



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SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE OPM group 6.6.1.5 Sample size Audit frequency Rest area and heavy commercial vehicle 10% Monthly facility and formed stopping area maintenance OPM **Road Class Contract Standard** Defect CIP 90 All Roads ≤ 1 defect per facility. There is litter overflowing a rubbish 1 week bin. **Example Defects** Litter overflowing in rubbish bin. See Appendix Table 1.1 for litter definition Assessment Guideline Stop at each facility within audit section to visually inspect bins

i

Tip – check contract appendix 6.12 - Rest Area and HCV Facility Maintenance Requirements for the schedule of areas to be maintained under the contract, and whether they include rubbish bins.


Marginal

Example - Rubbish bin at rest area full, rubbish not yet overflowing



Defect

Example - Rubbish bin at rest area overflowing



Defect

Example - Rubbish bin at rest area overflowing





SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM grou	OPM group 6.6.1.5		Sample size	Audit frequency			
Rest area and heavy commercial vehicle 109 facility and formed stopping area maintenance		10%	Monthly				
OPM	Road Class	Contract Standard		Defect	CIP		
91	NatHV(M&E)	No d	efects per facility.	There is non-functioning or damaged, 2 weeks			
92	All Roads (except NatHV(M&E))	≤ 1 d	efects per facility.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
Example Defects							
Broken or	Broken or missing picnic table, rubbish bin						

Assessment Guideline

Stop at each facility within audit section to visually inspect furniture



Tip – check contract appendix 6.12 - Rest Area and HCV Facility Maintenance Requirements for the schedule of areas to be maintained under the contract, and their specific assets and maintenance requirements



Example - Rubbish bin at rest area in good condition



Defect

Example - Picnic table at rest area damaged but repairable



Defect

Example - Picnic table at rest area damaged but repairable



SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM group 6.6.1.5		Sample size	Audit frequency		
Rest area and heavy commercial vehicle facility and formed stopping area maintenance		10%	Monthly		
OPM	Road Class	C	ontract Standard	Defect	CIP
93	All Roads	≤ 20 defects per facility.		Visible litter item within the area or HCV facility.	1 week

Example Defects

Any single item located within area or HCV facility that is maintained by the Principal, including, but not limited to; paper, refuse, rubbish, glass, metal, garbage, drink bottles, cans and other consumer type objects, and any objects that are not required by the Principal for the functioning of the road.

Assessment Guideline

Stop and walk around at each facility within audit section to count items of visible litter



Tip – check contract appendix 6.12 - Rest Area and HCV Facility Maintenance Requirements for the schedule of areas to be maintained under the contract







Graffiti Removal

SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM grou	ıp 6.6.1.6	Sample size Audit frequency			
Graffiti Removal			10%	Aonthly	
OPM	Road Class	С	ontract Standard	Defect	CIP
94	NatHV(M&E)	No d	efects.	Graffiti (any, including signs, bridges and structures), in isolation or a	2 days
95	NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	≤ 3 d carria	efects per 5km ageway section.	collection, in view of road users or pedestrians and/or rail (customers).	3 days
E	Defects				

Example Defects

Graffiti on sign or bridge

Assessment Guideline

Initial assessment by vehicle observer.

Record number of defective signs.

Determine total number of signs.

Calculate percentage of defective asset.



Tip 1 – if you can't take your RAMM data out in the field, try developing a SQL for quick extraction of your signs data from RAMM.



Example - Graffiti on underside of bridge, not visible to road users or pedestrians.



Acceptable

Example - Graffiti on underside of bridge, not visible to road users or pedestrians.



Defect

Example - Graffiti visible to road users and pedestrians.





Defect

Example – Graffiti on urban Stop sign



Defect

Example – Graffiti on urban state highway



Defect

Example – Graffiti on pedestrian walkway





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Signs

SECTION 6.7.1 - ROUTINE TRAFFIC SERVICES MAINTENANCE									
OPM group 6.7.1.1		Sample size	Audit frequency						
Signs		10%	Monthly						
Road Class	Contract Standard		Defect	CIP					
Roads	No defects.		Regulatory sign (except RD6L) missing, illegible or not compliant with Traffic Control Devices Manual (TCDM).	2 hours					
6	N 6.7.1 - ROUTI 3.7.1.1 Road Class Roads	N 6.7.1 - ROUTINE	N 6.7.1 - ROUTINE TRAFFIC SE 5.7.1.1 Sample size 10% Road Class Contract Standard Roads No defects.	N 6.7.1 - ROUTINE TRAFFIC SERVICES MAINTENANCE 3.7.1.1 Sample size Audit frequency 10% Monthly Road Class Contract Standard Defect Roads No defects. Regulatory sign (except RD6L) missing, illegible or not compliant with Traffic Control Devices Manual (TCDM).					

Example Defects

Missing Give Way sign, unreadable Stop sign

Assessment Guideline

Assessment from vehicle against up-to-date signs data from RAMM.

As a minimum, the following information is required in the field – Road Name, Displacement, Side, Sign Class, Sign Type

All side roads need to be turned into to assess Give Way and Stop signs legibility



Tip 1 – if you can't take your RAMM data out in the field, try developing a SQL for quick extraction of your signs data from RAMM.

Tip 2 – Auditing signs in urban areas and on motorways and expressways is difficult, try taking a video camera so you can verify signs back in the office.

Tip 3 – Keep your RAMM data up to date and accurate!

Acceptable

Example – RD6L sign not compliant with TCDM Note: Defect under OPM 93.





Example - Graffiti on Give Way sign, however sign still legible



Defect

Example - Give Way sign severely faded and illegible



Defect

Example - Give Way sign severely damaged to a point that it is illegible





SECTION 6.7.1 - ROUTINE TRAFFIC SERVICES MAINTENANCE

OPM group 6.7.1.1			Sample size	Audit frequency		
Signs			10%	Monthly		
OPM	Road Class	Contract Standard		Defect	CIP	
97	All Roads	≤ 5 d carria	efects per 5km ageway section.	Non-regulatory sign and RD6L missing, illegible or not compliant with Traffic Control Devices Manual (TCDM).	1 week	

Example Defects

Missing permanent warning sign

Assessment Guideline

Assessment from vehicle against up-to-date signs data from RAMM. Signs cannot be audited by looking at what signs you think are within the audit section, RAMM data is required!

As a minimum, the following information is required in the field – Road Name, Displacement, Side, Sign Class, Sign Type

All advanced warning signs on side roads need to be inspected, as well as hazard (obstruction) markers.



Tip 1 – if you can't take your RAMM data out in the field, try developing a SQL for quick extraction of your signs data from RAMM.

Tip 2 – Auditing signs in urban areas and on motorways and expressways is difficult, try taking a video camera so you can verify signs back in the office.

Tip 3 – Keep your RAMM data up to date and accurate!



Example - Sign has been damaged, however is still legible



Defect

Example - Sign damaged and not legible to motorist.



Defect

Example – Sign is not legible to motorist.



Raised pavement markers

SECT	ION 6.7.1 - ROUTI	NE	TRAFFIC S	ERVICES MAINTENANCI	Ē.		
OPM group 6.7.1.4			Sample size	Audit frequency			
Raised pa	avement markers		10%	Monthly			
OPM	Road Class	С	ontract Standard	Defect	CIP		
101	All Roads	≤ 10% per 5km F carriageway section N r t t c r		RRPM (Reflective Raised Pavement Marker) not visible from 160m at night, when viewed from the center of the lane with headlights on full beam or 80m on dipped beam, where the road geometry permits a line of sight.	2 weeks		
Example	Defects						
Missing, o	damaged and/or non-visible ra	ised p	pavement markers				
Assessme	ent Guideline						
Assessme	ent by vehicle observer at nigh	t					
i	Tip – Audit this OPM as part of your nighttime safety inspections						



Example - Raised pavement marker in good condition and will be visible to oncoming motorists



Defect

Example – No raised pavement markers visible



Defect

Example - Raised pavement marker in poor condition and will not be visible to oncoming motorists





SECT	ION 6.7.1 - ROUTI	INE	TRAFFIC S	ERVICES MAINTENANCE				
OPM grou	ıp 6.7.1.4		Sample size	Audit frequency				
Raised pa	avement markers		10%	Monthly				
OPM	Road Class	С	ontract Standard	Defect	CIP			
102	All Roads	≤ 3% per 5km carriageway section		RRPMs (Reflective Raised Pavement Markers) on curves not visible from 160m at night, when viewed from the centre of the lane with headlights on full beam or 80m on dipped beam, where the road geometry permits a line of sight	2 weeks			
Example	Defects							
Missing, c	damaged and/or non-visible ra	ised p	oavement markers					
Assessme	ent Guideline							
Assessme	Assessment by vehicle observer at night							
i	Tip – Audit this OPM as part of your night time safety inspections							



Example – More than three visible raised pavement markers



Defect

Example – Only two visible raised pavement markers



Defect

Example - Only one visible raised pavement marker



Edge Marker posts

SECT	ION 6.7.1 - ROUTI	INE	TRAFFIC SI	ERVICES MAINTENANCI	Ē			
OPM group 6.7.1.5			Sample size	Audit frequency	Audit frequency			
Edge Marker Posts		10%	Monthly					
OPM	Road Class	С	ontract Standard	Defect	CIP			
104	All Roads	≤ 10 carria	defects per 5km ageway section.	EMPs or flexible delineators missing or not compliant with the Traffic Control Devices Manual (TCDM).	2 weeks			
Example	Defects							
Missing, c	lamaged and/or non-visible ec	lge m	arker post					
Assessme	ent Guideline							
Assessme	Assessment by vehicle observer at night							
i	Tip – Audit this OPM as part of your night time safety inspections							



Example – Edge marker post reflectors visible

Defect

Example – Edge marker post reflector not visible



Defect

Example - Edge marker post reflector not visible





100% SAMPLE SIZE MEASURED EVERY 2 MONTHS



Vulnerable and high value flooding areas

SECT	ION 6.4.1 - R	OUTINE	DRAINAGE	MAINTENANCE	
OPM gro	oup 6.4.1		Sample size	Audit frequency	
Vulnerable and high value flooding areas		100%	Every 2 months		
OPM	Road Class	Contr	act Standard	Defect	CIP
53	All Roads	No defects.		Isolated blockage that would allow water to pond or flow onto the carriageway or undermine the asset integrity.	1 day
54	All Roads	No defects.		 > 20% of the channel hydraulic cross- section inoperative for greater than 1m in length. 	1 day
Example	Defects				
Vulnerab	le surface water chann	el blockages			
Assessm	nent Guideline				
Refer to Initial ass	contract appendix 6.5 f sessment by vehicle ob	or the schedu server, suppo	ile of nominated vul orted by detailed sit	Inerable flooding areas and drainage as	ssets.
	Tip 1 – Use people	who are requ	larly travelling the	network (e.g. network inspectors) to sto	p and

I ip 1 – Use people who are regularly travelling the network (e.g. network inspectors inspect the nominated vulnerable flooding areas and drainage assets

1



Defect

Example - Isolated blockage that would allow water to pond or flow onto the carriageway or undermine the asset integrity



Defect

Example - Isolated blockage that would allow water to pond or flow onto the carriageway or undermine the asset integrity



Defect

Example - > 20% of the channel hydraulic cross section inoperative





Barrier End Treatment and rail damage repairs

SECTION 6.7.1 - STRUCTURES ROUTINE MAINTENANCE

OPM groι	up 6.7.1.5		Sample size	Audit frequency	
Barrier End Treatment and rail damage repairs		100%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect	CIP
58	NatHV(M&E), NatHV	No defects.		Barrier, end terminals, noise wall, structure sight rails, and structure handrails damaged (and not programmed for repair) resulting in an1 day w rope, 3 days or assets	1 day wire rope, 3 days other assets
59	Nat, Reg	No defects.		inoperative barrier system as designed.	2 days wire
60	Art, PCol, SCol, Acc, AccLV	No defects.			weeks other assets
61	All Roads	≤ 1.		Structural damage identified in the previous audit not permanently repaired.	2 days
Assessme	ent Guideline			•	

Initial assessment by vehicle observer, supported by detailed site/asset inspection if required



Tip 1 - Use people who are regularly travelling the network (e.g. network inspectors) to stop and inspect the nominated vulnerable flooding areas and drainage assets

Acceptable

Example – Minor damage to guardrail but still operative. Does not need repairing









10% SAMPLE SIZE MEASURED EVERY 2 MONTHS

New Zealand Government

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Edge break

SECT	ION 6.1 - ROL	JTINE S		MENT MAINTENA	NCE	
OPM grou	up 6.1.6		Sample size	Audit frequency		
Edge brea	ak		10%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect		CIP
25	NatHV(M&E), NatHV, Nat, Reg	No defects.		>2m of continuous edge break encroachment is more than 25 into seal at any point.	k where 50mm	2 weeks
Example	Defects					
Fretting o	or breaking of the edge	of a bitumino	us surface.			
See Appe	endix Table 1.1 for edge	e break defin	ition.			
Assessm	ent Guideline					
Assessm	ent by vehicle observer					
If necessa	ary, stop and measure	with measuri	ng wheel or tape			
Photogra	phic example of assess	ment				
				Edge break lin	ne	
				Encr Normal edge of se	roachm eal line	ient



Defect

Example – Edge break encroaching into the seal more than 250mm, and more than 2m long



Defect

Example – Edge break encroaching into the seal more than 250mm, and more than 2m long



Defect

Example – Edge break encroaching into the seal more than 250mm, and more than 2m long. Note – no edge line



SECT	ION 6.1 - ROU	JTINE S	EALED PAVI	EMENT MAINTE		
OPM grou	лр 6.1.6		Sample size	Audit frequency		
Edge brea	ak		10%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect		CIP
26	Art, PCol, SCol	No defects. ≤ 2 defects per 5km carriageway section.		>5m of continuous edge break where encroachment is more than 250mm into seal at any point.		2 weeks
27	Acc, AccLV					2 weeks
Example	Defects					
Fretting o	r breaking of the edge	of a bitumino	ous surface.			
See Appe	endix Table 1.1 for edge	e break defin	ition.			
Assessme	ent Guideline					
Assessme	ent by vehicle observe	·.				
If necessa	ary, stop and measure	with measuri	ng wheel or tape			
Photograp	phic example of assess	sment				
				Edge bre	akline	
Encroachment						
Normal edge of seal line						



Defect

Example – Edge break encroaching into the seal more than 250mm, and more than 5m long



Defect

Example – Edge break encroaching into the seal more than 250mm, and more than 5m long



Defect

Example – Edge break encroaching into the seal more than 250mm, and more than 5m long





SECTION 6.1 - ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.1.6			Sample size	Audit frequency		
Edge break			10%	Every 2 months		
OPM	Road Class	Contract Standard		Defect	CIP	
28	All Roads	≤ 2 defects per 5km carriageway section.		Edge break encroaching into painted edge line for more than 1m length.	2 days	

Example Defects

Fretting or breaking of the edge of a bituminous surface extending into the edge line.

See Appendix Table 1.1 for edge break definition

Assessment Guideline

Assessment by vehicle observer

Acceptable

Example – Edge break not yet encroaching into the edge line



Acceptable

Example – Edge break encroaching on edge line for less than 1m





Defect

Example – Edge break encroaching into the edge line



Defect

Example – Edge break encroaching into the edge line



Defect

Example – Edge break encroaching into the edge line



Shoulder maintenance

L SECTION 6 1	DOUTTNE GEALED D	DAVEMENT MATNTENANCE
I SIECHLUN DAL	- RUUIINE SEALED P	AVEMENT MAINTENANCE

OPM group 6.1.7			Sample size	Audit frequency			
Shoulder maintenance			10%	Every 2 months			
OPM	Road Class	Contract Standard		Defect	CIP		
29	All Roads	≤ 250m total per 5km carriageway section.		>10m of continuous low shoulder or edge rutting >50mm on a straight.	2 weeks		
Example Defects							

Drop off from sealed surface onto adjacent unsealed shoulder

Assessment Guideline

Initial assessment by vehicle observer.

If necessary, a 2m straight edge (or similar) is to be laid across the sealed shoulder and a rule or tape measure is to be used to determine the height of the drop off from line of seal to level of unsealed shoulder. Note – level difference due to seal roll off is not to be included during measurement. An example is shown in insert photo below (straight edge)

Record total number of defective 10m sections

Photographic example of assessment





Tip 1 - Find an efficient way to tally 10m sections of continuous low shoulder so you can easily work out your total length. Remember, the 3m length of painted centreline plus 7m gap = 10 metres



Example – Less than 10 meters of continuous low shoulder of more than 50mm on a straight



Defect

Example – More than 10 meters of continuous low shoulder of more than 50mm on a straight



SECTION 6.1- ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.1.7			Sample size	Audit frequency			
Shoulder maintenance			10%	Every 2 months			
OPM	Road Class	Contract Standard		Defect	CIP		
30	All Roads	≤ 100m total per 5km carriageway section.		Low shoulder or edge rutting >50mm on a bend.	2 weeks		
Example Defects							

Drop off from sealed surface onto adjacent unsealed shoulder

Assessment Guideline

Initial assessment by vehicle observer.

If necessary, a 2m straight edge (or similar) is to be laid across the sealed shoulder and a rule or tape measure is to be used to determine the height of the drop off from line of seal to level of unsealed shoulder. Note – level difference due to seal roll off is not to be included during measurement. An example is shown in insert photo below (straight edge)

Record total number of defective 10m sections

Photographic example of assessment



Tip 1 - Find an efficient way to tally 10m sections of continuous low shoulder so you can easily work out your total length. Remember, the 3m length of painted centreline plus 7m gap = 10 metres


Example – Low shoulder of less than 50mm on a bend

Defect

Example – Low shoulder of more than 50mm on a bend



Defect

Example – New asphaltic concrete constructed with a low shoulder of more than 50mm on a bend



SECTION 6.1- ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.1.7			Sample size	Audit frequency			
Shoulder maintenance		10%	Every 2 months				
OPM	Road Class	Contra	act Standard	Defect	CIP		
31	All Roads	No defects.		Low shoulder or edge rutting >100mm.	1 week		

Example Defects

Drop off from sealed surface onto adjacent unsealed shoulder

Assessment Guideline

Initial assessment by vehicle observer.

If necessary, a 2m straight edge (or similar) is to be laid across the sealed shoulder and a rule or tape measure is to be used to determine the height of the drop off from line of seal to level of unsealed shoulder. Note – level difference due to seal roll off is not to be included during measurement

Photographic example of assessment







Repair quality

SECTION 6.1- ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.1.8		Sample size	Audit frequency		
Repair quality		10%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect	CIP
32	NatHV(M&E)	No defects.		Occurrence of permanent repair	2 weeks
33	NatHV, Nat,	≤ 2 defects p carriageway	per 5km section.	addressed under OPM 34)	2 weeks
34	Reg, Art, PCol, SCol, Acc, AccLV	≤ 5 defects per 5km carriageway section.			2 weeks

Example Defects

Cracking, chip loss due to scabbing/stripping, pumping fines, flushing, bleeding, rutting, pavement settlement, pothole, deformations and recently completed repair within a pre-existing pavement repair

Assessment Guideline

Initial assessment by vehicle observer.

Verification of failing repairs will be required to ensure the original repair was completed (or is monitored) by the Network Outcomes Contract Contractor. Repairs completed under previous contracts are not to be considered when auditing this OPM. The risk profile against a failing repair may also need to be verified



Tip 1 – A supplier can only be penalised one time per completed repair under this performance measure (any non-compliances will need to be verified).

Tip 2 – All repairs completed by the Network Outcomes Contract Contractor should be lodged in RAMM. This can be used for verification of failing repairs



Defect

Example – Potholes within completed pavement repair, will require rework



Defect

Example – Cracking within completed pavement repair, will require rework



Defect

Example – Chip loss and binder rise within completed pavement repair, will require rework



Bridge and Other Structures Maintenance

SECTION 6.5.1- ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.5.1 S			Sample size	Audit frequency			
Bridge and Other Structures Maintenance 10%			10%	Every 2 months			
OPM	Road Class	Contr	act Standard	Defect	CIP		
55	NatHV(M&E)	No defects.		Blocked drainage system or	2 weeks		
56	NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	No more tha 5km cariage	n 1 defect within a way section.	undesirable drainage discharge point.	2 weeks		
Example I	Defects						
Blocked b	ridge drainage ports/cl	nannels.					
Bridge dra	ainage discharge to un	suitable locat	ion.				
Assessment Guideline							
Individual asset inspection							



Defect

Example - Drainage channel full of detritus and vegetation.



Defect

Example - Drainage channel full of detritus.



Defect

Example - Drainage outlet blocked.



SECTION 6.5.1- ROUTINE SEALED PAVEMENT MAINTENANCE

OPM group 6.5.1			Sample size	Audit frequency				
Bridge and Other Structures Maintenance		10%	Every 2 months					
OPM	Road Class	Contract Standard		Defect	CIP			
57	All Roads	No more tha 5km cariage	n 1 defect within a way section.	Debris impeding joint movement or damaging the joint.	2 weeks			
Example I	Defects							
Aggregate/debris/vegetation filling up joint. Dislodged expansion joint material impeding joint movement.								
Assessme	Assessment Guideline							

Individual asset inspection.



Defect

Example - Debris impeding joint movement or damaging the joint.



Defect

Example - Debris impeding joint movement or damaging the joint.



Defect

Example - Debris impeding joint movement or damaging the joint.





SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE									
OPM group 6.6.1.2			Sample size	Audit frequency					
Vegetation control - general		10%	Every 2 months						
OPM	Road Class	Contra	act Standard	Defect	CIP				
66	All Roads	≤ 20% Type length (side carriageway	1 (Urban): by m), per 5km section.	Vegetation < 20mm or > 75mm in height.	1 week				
Example Defects									
Urban me	Urban median with grass longer than 75mm								

Assessment Guideline

Refer to contract appendices for nominated areas to be maintained under the Network Outcomes Contract.

Initial assessment by vehicle observer.

Where marginal, a rising disc meter is to be used, measuring a representative sample of the area to determine defective area percentage

Photographic example of assessment



Example of rising disc meter for measuring grass height

Tip 1 – Some urban areas are likely to be maintained by the local authority, remember to refer to contract appendices for nominated Type 1 control areas to be maintained under the Network Outcomes Contract.

Tip 2 – Come up with an efficient way of tallying and calculation the % of area per audit section that is defective



Example – Grassed island well maintained



Marginal

Example – Vegetation in traffic island near threshold close to 75mm in height –

warrants specific assessment (using rising plate meter)



Defect

Example – Grass height higher than 75mm over majority of area



OPM group 6.6.1.2			Sample size	Audit frequency	
Vegetation control - general		10%	Every 2 months		
OPM	Road Class	Contract Standard		Defect	CIP
67	All Roads	≤ 25% Type Places): per Place.	2 (Stopping individual Stopping	Vegetation < 20mm or > 150mm in height.	1 week

Example Defects

Rest area with grass longer than 150mm or less than 20mm

Assessment Guideline

Refer to contract appendices for nominated areas to be maintained under the Network Outcomes Contract.

Initial assessment by vehicle observer.

Where marginal, a rising disc meter is to be used, measuring a representative sample of the area to determine defective area percentage

Photographic example of assessment



Example of rising disc meter for measuring grass height

Tip 1 – Some urban areas are likely to be maintained by the local authority, remember to refer to contract appendices for nominated Type 1 control areas to be maintained under the Network Outcomes Contract.

Tip 2 – Each stopping place is assessed individually, regardless of whether multiple are assessed within an audit section.



Example - Grass at rest area is less than 150mm in height



Marginal

Example - Grass at rest area more than 150mm in height



Defect

Example - Grass at rest area is a lot more than 150mm in height



					1 of 3
OPM group 6.6.1.2			Sample size	Audit frequency	
Vegetatio	n control - general		10%	Every 2 months	
OPM	Road Class	Contra	act Standard	Defect	CIP
68	NatHV(M&E), NatHV, Nat	No defects T	уре 3.	Vegetation < 25mm or > 300mm in height	2 weeks
69	Reg	≤ 5% Type 3 m), per 5km section.	: by length (side carriageway	or < 160m forward sight visibility to all signs and delineation devices	2 weeks
70	Art, PCol, SCol, Acc, AccLV	≤ 10% Type m), per 5km section.	3: by length (side carriageway	or Vegetation within the clear Vegetation-free Zone.	2 weeks

Example Defects

Overgrown shoulder vegetation

Assessment Guideline

Refer to contract appendices 6.9 and 6.10 for vegetation extents to be maintained under the Network Outcomes Contract.

Initial assessment by vehicle observer. Where marginal, a rising disc meter is to be used, measuring a representative sample of the area to determine defective area percentage.

Measured in terms of lineal metres being defective/okay

Example of assessment



Vegetation Free Zone includes vegetation growing within the sealed surface and trees/limbs encroaching into the 'window'



Marginal

Example –Vegetation close to 300mm in height – warrants specific assessment (using rising plate meter)



Defect

Example – Overgrown vegetation, restricting <160m of forward sight visibility to signs or delineation



Defect

Example – Overgrown vegetation well in excess of 300mm





Example – Overhanging tree limb in vegetation free zone (>6m high)



Defect

Example – Vegetation growing within the sealed surface



Defect

Example – Overhanging tree limb in vegetation free zone (<6m high)





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OPM group 6.6.1.2		Sample size	Audit frequency		
Vegetation control - general		10%	Every 2 months		
OPM	Road Class	Contract Standard		Defect	CIP
71	NatHV(M&E)	≤ 10% Type 5: by length (side m) per 5km carriageway section.		Area not vegetation-free or near vegetation-free.	2 weeks
72	All Roads (except NatHV(M&E))	≤ 20% Type 5: by length (side m) per 5km carriageway section.			2 weeks

Example Defects

Vegetation exceeding 100mm in height at culvert markers, headwalls, retaining structures, guardrails, barriers, sight rails, surface water channels, kerb and channel, weigh stations, side drains, culvert waterways, bridges, rest area furniture and/or road-side furniture (such as street-light poles, CCTV/ VMS cabinet, CCTV/VMS poles).

Assessment Guideline

Refer to contract appendices for vegetation extents to be maintained under the Network Outcomes Contract.

Initial assessment by vehicle observer.

If necessary, a rising disc meter is to be used to determine if an area is defective. Assessed in lane metres,

e.g. total defective lane.m / total audit section lane.m



Tip – Come up with an efficient way of tallying the lineal metres of defective area within the audit section

Acceptable

Example – Vegetation growth around a side drain





Defect

Example – Overgrown vegetation around edge marker post



Defect

Example – Overgrown vegetation around a side drain Note: This is also a defect under OPM 64



Defect

Example – Overgrown vegetation around culvert end



OPM group 6.6.1.2			Sample size	Audit frequency	
Vegetation control - general		10%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect	CIP
73	All Roads	≤ 15% Type carriageway	7: per 5km section.	Non-compliance with requirements of Type 7 control or Designation Conditions and Plans.	1 month

Example Defects

Planted area which has not been weeded.

Bark or gravel chip within planted area which has not been raked. Dead tree within planted area.

Overgrown trees or shrubs within planted area affecting sight distance.

Overgrown trees or shrubs within planted area affecting health of other plants.

Assessment Guideline

Refer to contract appendices for nominated landscaped areas to be maintained under the Network Outcomes Contract.

Refer to the local conditions for landscaped area maintenance requirements.

Initial assessment by vehicle observer, supported by detailed site inspection if marginal



Tip – Come up with an efficient way of tallying the lineal metres of defective area within the audit section



Example – Landscaped area well maintained



Defect

Example – Planted area which has not been maintained



Defect

Example – Planted area which has not been maintained



OPM group 6.6.1.2		Sample size	Audit frequency		
Vegetation control - general		10%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect	CIP
74	All Roads	No defects.		Dead tree or limb within the Limit of Works that presents a risk of falling onto the road or damaging another asset or property (a fallen tree or limb shall be treated as an Incident Response).	1 month

Example Defects

A dead tree or dead limb that presents a risk of falling onto the road, both growing in the road reserve or adjacent property

Assessment Guideline

Initial assessment by vehicle observer, supported by detailed site inspection if required



Tip – if the tree originates from private property but encroaches into the limit of works and presents a risk of falling onto the road, it counts!





Example – Dead tree at risk of falling onto the highway

Defect

Example – Dead tree at risk of falling onto the highway



Defect

Example – Dead tree at risk of falling onto the highway



OPM group 6.6.1.2		Sample size	Audit frequency		
Vegetation control - general		10%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect	CIP
75	NatHV(M&E)	No defects.		Self-sown tree >1m and < 3m high.	1 month
76	All Roads (except NatHV(M&E))	≤ 20 defects carriageway	per 5km section.		1 month

Example Defects

Self-sown tree within the limit of works that has the potential to grow a trunk diameter exceeding 100mm and become a traffic hazard (i.e. if left to grow tree would be a risk of; falling onto the highway, affecting forward sight visibility, and/or increasing the consequence of a crash due to infrangibility).

Note - native trees ARE included when auditing this OPM

Assessment Guideline

Initial assessment by vehicle observer, supported by detailed site inspection if required



Tip – remember, only trees that have the potential to grow a trunk diameter exceeding 100mm and become a traffic hazard should be counted for this OPM. Think – if it was left to grow, would it NEED to be removed at some stage in the future?



Example – Self-sown tree more than 3m in height



Defect

Example – Self-sown trees less than 3m in height but more than 1m



Defect

Example – Self-sown trees less than 3m in height but more than 1m



OPM group 6.6.1.2			Sample size	Audit frequency	
Vegetation control - general		10%	Every 2 months		
OPM	Road Class	Contra	act Standard	Defect	CIP
77	All Roads	≤ 10% Type	6: within any 10m2	Pest plant growth shall not exceed 100mm in height or spread	1 month
Example	Defects				

Example Defects

Pest plant within the limit of works greater than 100mm in height or spread.

Assessment Guideline

Initial assessment by vehicle observer, supported by detailed site inspection if required



Tip – remember, only trees that have the potential to grow a trunk diameter exceeding 100mm and become a traffic hazard should be counted for this OPM. Think – if it was left to grow, would it NEED to be removed at some stage in the future?

Culvert marker posts

SECTION 6.6.1 - ROUTINE ENVIRONMENTAL MAINTENANCE

OPM group 6.7.1.5			Sample size	Audit frequency		
Culvert marker posts			10%	Every 2 months		
OPM	Road Class Contr		act Standard	Defect	CIP	
106	NatHV(M&E)	≤ 1 defect per 5km carriageway section.		Missing culvert marker post.	1 month	
107	All Roads (except NatHV(M&E))	≤ 3 defects p carriageway	per 5km section.		1 month	
Example Defects						

Missing culvert marker post.

Culvert name and number missing from marker post.

See Appendix Table 1.1 for culvert and culvert marker definitions.

Assessment Guideline

Audit against signs data or culvert data from RAMM (depending which table culvert markers are kept in)



Tip 1 – Audit culvert markers in conjunction with auditing signs. One checklist can be prepared before you go out in the field to make auditing faster.

Tip 2 – As per Appendix Table 1.1, ALL culverts should have an associated culvert marker, not just those crossing the highway



100% SAMPLE SIZE MEASURED QUARTERLY & AT NIGHT

Carriageway lighting

SECTION 6.7.1 - ROUTINE TRAFFIC SERVICES MAINTENANCE							
OPM gro	up 6.7.1.8		Sample size	Audit frequency			
Carriageway lighting			100%	Quarterly and at night			
OPM	OPM Road Class Contr		act Standard	Defect CIF			
109	09 All Roads No defects.			Belisha Beacon light or pedestrian 2 days crossing light not functioning or missing.			
Example Defects							
Carriageway light bulb blown/smashed, belisha beacon (at pedestrian crossing) not flashing							
Assessment Guideline							
Initial assessment by vehicle observer against data extracted from SLIM table							



Tip – Some carriageways lights in urban will be maintained by the local authority. Make sure your RAMM data is up to date and correct with this!

SECTION 6.7.1 - ROUTINE TRAFFIC SERVICES MAINTENANCE							
OPM group 6.7.1.8			Sample size	Audit frequency			
Carriageway lighting			100%	Quarterly and at night			
OPM	Road Class	Contract Standard		Defect CI			
110	NatHV(M&E)	≤ 2% defects.		Light not functioning or missing. 1 week			
111	NatHV, Nat	≤ 5% defects.					
112	Reg, Art, PCol, SCol, Acc, AccLV	≤ 10% defec	ts.				
113	NatHV(M&E)	No lighted intersection with defects.		Intersection, On or Off Ramp: >=50% of the lights not functioning.	2 days		
114	All Roads (except NatHV(M&E))	< 2% of lighted intersection with defects.			2 days		
115	NatHV(M&E)	No defects.		Address Mid-block: >= 3 consecutive lights not functioning or missing.			
Example Defects							
Carriageway light bulb blown/smashed							
Assessment Guideline							
Initial assessment by vehicle observer against data extracted from SLIM table							

100% SAMPLE SIZE MEASURED BI-ANNUALLY & AT NIGHT



Signs

SECTION 6.7.1 - ROUTINE TRAFFIC SERVICES MAINTENANCE							
OPM group 6.7.1.1			Sample size	Audit frequency			
Signs			100%	Bi- annually & at night			
OPM	Road Class	Contract Standard		Defect		CIP	
98	All Roads	No defects.		Regulatory sign (except RD6L) not 21 visible from 160m at night, when viewed from the centre of the lane with headlights on full beam or 80m on dipped beam OR not meeting the Traffic Control Devices Manual (TCDM) reflectivity standard.		2 hours	
99	All Roads	≤ 5% defects.		Non-regulatory sign and RD6L not visible from 160m at night, when viewed from the centre of the lane with headlights on full beam or 80m on dipped beam OR not meeting the Traffic Control Devices Manual (TCDM) reflectivity standard.		1 week	
Example	Defects						
Dirty sign:	s, faded signs, damag	ed signs					
Assessme	ent Guideline						
Assessme	ent by vehicle observe	r at night.					
All advanced warning signs on side roads need to be inspected where road geometry will allow. Remember, signs not covered include -							
Signs with flexible faces							
Electronic signs							
Street-name blade signs							
Regulatory parking signs							
Tip – Audit this OPM as part of your night time safety inspections							



Example - Sign reflective and visible at night from 80 metres



Defect

Example - Sign not very reflective and not visible at night from 160 metres



Defect

Example - Sign not very reflective and not visible at night from 160 metres



Edge marker posts

SECTION 6.7.1 - ROUTINE TRAFFIC SERVICES MAINTENANCE								
OPM group 6.7.1.5			Sample size	Audit frequency				
Edge marker posts			100%	Bi- annually & at night				
OPM	Road Class Contract Sta		ndard	Defect		CIP		
105	All Roads	< 10 defects per 5km carriageway section.		Reflector not visible from 160m at night, when viewed from the centre of the lane with headlights on full beam or 80m on dipped beam.		2 weeks		
Example Defects								
Missing, damaged and/or non-visible edge marker post								
Assessment Guideline								
Assessment by vehicle observer at night								

i

Tip – Audit this OPM as part of your night time safety inspections


Acceptable

Example - Two consecutive edge marker post reflectors visible on same side of the road



Defect

Example - Only one edge marker post visible



Defect

Example - No edge marker posts visible



Network Outcomes Contract



100% SAMPLE SIZE MEASURED ANNUALLY



Non-vulnerable sumps, manholes, catchpits, and outflow control devices

OPM gro	up 6.4.1		Sample size		Audit frequency	
Non- vuln catchpits,	nerable sumps, manho , and outflow control d	les, evices	100%		Annually	
OPM	Road Class	Contract	t Standard		Defect	CIP
43	All Roads	No defects.		Debi pipe area for n grate mon drair	ris < 200mm below the internal outlet invert or > 20% of the cross-sectional of outlet pipe covered with debris or nanholes and like features >33% of the e is blocked, not remedied within 2 ths as identified from an annual nage inspection.	1 month
Example	Defects					
Blocked s	sump, manhole, catch	pit, outlet pipe	e, etc.			
Assessm	ent Guideline					
Evidence	needs to be provided	showing rem	edial works ha	ve be	een completed	
Example	of Assessment					
	Intake Grate	2				
-	Sump	Τ	Surfacir drainag channe	ng / e I		
			o	utle	t Pipe	
	Outlet Invert L	Pipe evel				
	Min 200mn Debris	- ↓				
	B					

the agreement between the TLA and the Transport Agency.

Tip 2 - An inspection of the asset may not actually be required when auditing this OPM as other methods for appropriately demonstrating remedial works have been undertaken.



Defect

Defect

Defect

Example - Catchpit with debris less than 200mm below the invert level of the outlet pipe







Non-vulnerable culverts, subsoil, horizontal drains and outflow control devices

SECT	ION 6.4.1 - R	OUTINE	DRAINAGE	MAINT	ENANCE	
OPM gro	up 6.4.1		Sample size	Audit frequer	псу	
Non- vulr drains an	nerable culverts, subso id outflow control devic	il, horizontal es	100%	Annually		
OPM	Road Class	Cont	ract Standard		Defect	CIP
44	All Roads	No defects.		> 20% of th the culvert with debris, months as drainage in	e cross-sectional area of inlet, outlet or barrel filled not remedied within 2 identified from an annual spection.	1 month
Example	Defects					
Blocked	culvert					
Assessm	ent Guideline					
Evidence The follov area of th	e needs to be provided wing sketches are prov ne culvert inlet, outlet o	showing rem ided to assis r barrel that i	edial works have b t with the visual ass s filled with debris	een complete sessment of th	d ne percentage of the cross	s-sectional
Example	of Assessment					
	% Full	25 % F	Full	50% Full Debris Defect	85 % Fu	ull s
i	Tip – An inspection methods for appropr	of the asset r iately demon	may not actually be strating remedial w	required whe orks have be	n auditing this OPM as ot en undertaken	her



Acceptable

Example - Culvert barrel clear



Defect

Example - > 20% of the cross-sectional area of the culvert barrel filled with debris



Defect

Example – > 20% of the cross-sectional area of the culvert inlet filled with debris



SECT	ON 6.4.1 - ROUTINE DRAINAGE MAINTENANCE p 6.4.1 Sample size Audit frequency prable culverts, subsoil, horizontal outflow control devices 100% Annually Road Class Contract Standard Defect CIF NI Roads No defects. > 20% of the cross-sectional area of the culvert filled with water caused by poor maintenance of downstream hydraulic conditions, within the Limit of Works, not remedied within 2 months as identified from an annual drainage inspection. 1 month the Culvert filled from an annual drainage inspection. Defects								
OPM gro	up 6.4.1		Sample size	Audit frequency					
Non- vulr drains an	on- vulnerable culverts, subsoil, horizontal rains and outflow control devices 100% Annually OPM Road Class Contract Standard Defect 45 All Roads No defects. > 20% of the cross-section the culvert filled with wate by poor maintenance of do hydraulic conditions, within of Works, not remedied win months as identified from drainage inspection. sesssmut Guideline								
OPM	Road Class	Cont	ract Standard	Defect	CIP				
45	All Roads	No defects.		> 20% of the cross-sectional area of the culvert filled with water caused by poor maintenance of downstream hydraulic conditions, within the Limit of Works, not remedied within 2 months as identified from an annual drainage inspection.	1 month				
Example	Defects								
Water po	nding in culvert due to	blocked drai	n						
Assessm	ent Guideline								
Evidence The follov area of th	needs to be provided wing sketches are prov ne culvert inlet, outlet c	showing rem vided to assis or barrel that i	edial works have b t with the visual ass s filled with water	een completed.	s-sectional				
Example	of Assessment								
	0% Full	25 %		50% Full 85 % Ful Water Water Defect					
	Tip – An inspection	Det of the asset r	may not actually be	required when auditing this OPM as of	her				
Y	methods for approp	riately demor	strating remedial w	orks have been undertaken					



Defect

Example - Culvert filled with water due to poor maintenance of drain downstream



Defect

Example - Culvert filled with water due to poor maintenance of drain downstream



Defect

Example – Culvert filled with water due to poor maintenance of drain downstream



APPENDICES



Extent of Vegetation Control





FOR

EXTENT AND TYPE OF VEGETATION CONTROL

ROADS WITHOUT KERB AND CHANNE





FOR

EXTENT AND TYPE OF VEGETATION CONTROL

ROADS WITH KERB AND CHANNEI







EXTENT AND TYPE OF VEGETATION CONTROL ROADS WITH KERB AND CHANNEL

FOR









OPM Sample Size and Audit Frequencies

OPM SAMPLE	SIZE	S AND AUDIT F	REQUENCIES	S													
ОРМ ТҮРЕ		NAME	ROAD CLASS		~	REP	ORT	ING I	NTER	VAL							
	MOO			AUDIT SIZE	FREQUENCY	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Safety	1	Key Reporting	All Roads	100%	Monthly	\checkmark											
Safety	2	Skid Resistance Management	All Roads	100%	Annually												\checkmark
Customer Facing	3		All Roads	100%	Monthly	\checkmark											
Customer Facing	4	TMP Approvals	All Roads	100%	Monthly	\checkmark											
Customer Facing	5		All Roads	100%	Monthly	\checkmark											
Customer Facing	6	CAR processing	All Roads	100%	Monthly	\checkmark											
Asset Condition	7	Geological Threats	All Roads	100%	Monthly	\checkmark											
Customer Facing	8		NatHV(M&E)	10%	Monthly	\checkmark											
Customer Facing	9	Surface Bumps (Sealed Roads)	All Roads (except NatHV(M&E))	10%	Monthly	Ø	Ø		Ø	V	Ø	Ø	Ø			Ø	
Customer Facing	10		AccLV	10%	Monthly	\checkmark											
Customer Facing	11	Potholes (Sealed	NatHV(M&E)	10%	Monthly	\checkmark											
Customer Facing	12	Roads)	NatHV, Nat	10%	Monthly	\checkmark											



	SIZE	S AND AUDIT F	KEQUENCIE	5													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REP	ORT	ING I	NTEF	RVAL							
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Customer Facing	13		Reg, Art	10%	Monthly	\checkmark											
Customer Facing	14		PCol, SCol, Acc, AccLV	10%	Monthly	\checkmark	\square		\checkmark	\checkmark	\checkmark	\square	\square	\checkmark	\checkmark	\checkmark	
Safety	15		All Roads	10%	Monthly	\checkmark											
Asset Condition	16		NatHV(M&E)	10%	Monthly	\checkmark											
Asset Condition	17		NatHV, Nat	10%	Monthly	\checkmark											
Asset Condition	18	Deformations, Heaves, Shoves	Reg, Art	10%	Monthly	\checkmark											
Asset Condition	19	(Sealed Roads)	PCol, SCol, Acc, AccLV	10%	Monthly	\checkmark	\square		\square	\checkmark	\square	\square	\checkmark	\checkmark	\square	\checkmark	
Safety	20		All Roads	10%	Monthly	\checkmark											
Asset Condition	21	Rutting	All Roads	100%	Annually											\checkmark	
Asset Condition	22	Flushing and Scabbing	All Roads	100%	Annually											\checkmark	
Asset Condition	23	Flushing and	All Roads	10%	Monthly	\checkmark											
Asset Condition	24	Roads)	All Roads	10%	Monthly	\checkmark	\square	\checkmark									
Asset Condition	25	Edge Break (Sealed Roads)	NatHV(M&E), NatHV, Nat, Reg	10%	2 Monthly	Ø						\square					

OPM SAMPLE SIZES AND AUDIT FREQUENCIES



OPM SAMPLE	SIZE	S AND AUDIT F	REQUENCIES	S													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REP	ORT	ING I	NTEF	RVAL							
	MGO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	МАҮ	JUNE
Asset Condition	26		Art, PCol, SCol	10%	2 Monthly	\checkmark		Ø		\checkmark		V		\checkmark		Ø	
Asset Condition	27		Acc, AccLV	10%	2 Monthly	\checkmark											
Safety	28		All Roads	10%	2 Monthly	\checkmark											
Asset Condition	29	Shoulder	All Roads	10%	2 Monthly	\checkmark											
Asset Condition	30	Maintenance	All Roads	10%	2 Monthly	\checkmark											
Asset Condition	31	(Sealed Roads)	All Roads	10%	2 Monthly	\checkmark											
Customer Facing	32	Repair Quality	All Roads	10%	2 Monthly	\checkmark											
Customer Facing	33	(Sealed Roads)	All Roads	10%	2 Monthly	\checkmark											
Customer Facing	34		NatHV(M&E)	10%	Monthly	\checkmark											
Customer Facing	35	Reinstatement of Sites after any Completed Works	All Roads (except NatHV(M&E))	10%	Monthly	Ø	Ø		V		Ø	V		Ø		Ø	
Customer Facing	36		All Roads	10%	Monthly	\checkmark											
Customer Facing	37	Pavement Rehabilitation Rework	All Roads	100%	Annually												



OPM SAMPLE	SIZE	S AND AUDIT F	REQUENCIE	S													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REF	PORT	ING I	NTEF	RVAL							
	MAO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Customer Facing	38	Pavement Rehabilitation	All Roads (Chip)	100%	Annually											\checkmark	
Safety	39	Post-Construction Surface Shape Restoration	All Roads (AC)	100%	Annually											V	
Asset Condition	40	Pre-resurfacing Repairs (Sealed Roads)	All Roads	100%	Annually												
Customer Facing	41	AC Post-	All Roads	100%	Annually											\checkmark	
Customer Facing	42	Surface Shape Verification	All Roads	100%	Annually												
Asset Condition	43	Non-vulnerable Sumps, Manholes, Catchpits and Outflow Control Devices	All Roads	100%	Annually												
Asset Condition	44	Non-vulnerable	All Roads	100%	Annually												\checkmark
Asset Condition	45	Horizontal Drains	All Roads	100%	Annually												\checkmark
Asset Condition	46	and Outflow Control Devices	All Roads	100%	Annually												\checkmark
Asset Condition	47		NatHV(M&E)	10%	Monthly	\checkmark											



OPM SAMPLE	SIZE	S AND AUDIT F	REQUENCIE	<u> </u>													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REP	ORT	ING I	NTEF	RVAL							
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Asset Condition	48		NatHV, Nat, Reg, Art	10%	Monthly	\checkmark	\checkmark	\checkmark		\checkmark			\checkmark	\checkmark	\square	\checkmark	\checkmark
Asset Condition	49	Curfe en Weter	PCol, SCol, Acc, AccLV	10%	Monthly	\checkmark											
Asset Condition	50	Channels	NatHV(M&E)	10%	Monthly	\checkmark											
Asset Condition	51		NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	10%	Monthly	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø		
Customer Facing	52	Reported Lane Flooding	NatHV(M&E)	100%	Monthly	\checkmark	\square		V	\checkmark	\checkmark	V	Ø	\checkmark	\square	\checkmark	Ø
Safety	53	Vulnerable and	All Roads	100%	2 Monthly	\checkmark											
Asset Condition	54	High Value Flooding Areas	All Roads	100%	2 Monthly	\checkmark											
Asset Condition	55		NatHV(M&E)	10%	2 Monthly		\checkmark										
Asset Condition	56	Bridge and Other Structures Maintenance	NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	10%	2 Monthly		Ø		Ø		Ø		Ø		Ø		
Asset Condition	57		All Roads	10%	2 Monthly		\checkmark										



	SIZE	S AND AUDIT F	REQUENCIE.	5													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REP	ORT	ING I	NTEF	RVAL							
	OPM			AUDIT SIZI	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Safety	58		NatHV(M&E), NatHV	100%	2 Monthly				Ø								
Safety	59	Barrier, End Treatment and	Nat, Reg	100%	2 Monthly		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark
Safety	60	Rail Damage Repairs	Art, PCol, SCol, Acc, AccLV	100%	2 Monthly		Ø						Ø		Ø		V
Safety	61		All Roads	100%	2 Monthly		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark
Safety	62	Frost, Ice Gritting	All Roads	100%	Monthly	\checkmark	\checkmark	\checkmark	\checkmark						\checkmark	\checkmark	\checkmark
Safety	63	and Show Clearance – Mobilise and Establish On Site	All Roads	100%	Monthly	Ø	Ø				Ø	Ø	Ø	Ø	Ø		Ø
Safety	64	Ice Gritting and CMA – Treatment Decisions and Compliance	All Roads	100%	Monthly		Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø		
Customer Facing	65	Snow Clearing - Response	All Roads	100%	Monthly	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\square	\checkmark	\checkmark		\checkmark	
Customer Facing	66	Vegetation	All Roads	10%	2 Monthly		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark
Customer Facing	67	Control - General	All Roads	10%	2 Monthly		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark		\checkmark

OPM SAMPLE SIZES AND AUDIT FREQUENCIES



OPM SAMPLE	SIZE	S AND AUDIT F	REQUENCIE	S													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REF	PORT	ING I	NTER	VAL							
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Customer Facing	68		NatHV(M&E), NatHV, Nat	10%	2 Monthly		Ø		\checkmark		\checkmark		\checkmark				
Customer Facing	69		Reg	10%	2 Monthly		\checkmark										
Customer Facing	70		Art, PCol, SCol, Acc, AccLV	10%	2 Monthly		Ø		V		V				Ø		Ø
Customer Facing	71		NatHV(M&E)	10%	2 Monthly		\checkmark										
Customer Facing	72		All Roads (except NatHV(M&E))	10%	2 Monthly		Ø		Ø		Ø				Ø		Ø
Customer Facing	73		All Roads	10%	2 Monthly		\checkmark										
Customer Facing	74		All Roads	10%	2 Monthly		\checkmark										
Asset Condition	75		NatHV(M&E)	10%	2 Monthly		\checkmark										
Asset Condition	76		All Roads (except NatHV(M&E))	10%	2 Monthly		Ø								Ø		
Asset Condition	77		All Roads	10%	2 Monthly		\checkmark										
Customer Facing	78	Litter Collection	NatHV(M&E)	10%	Monthly	\checkmark											



OPM SAMPLE	SIZE	S AND AUDIT F	REQUENCIES	S													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REP	ORT	ING I	NTEF	RVAL							
	OPM			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Customer Facing	79		All Roads (except NatHV(M&E))	10%	Monthly	Ø	Ø	Ø			Ø	Ø			V		
Customer Facing	80		NatHV(M&E)	10%	Monthly	\checkmark											
Customer Facing	81		All Roads (except NatHV(M&E))	10%	Monthly		Ø			Ø	Ø	Ø			Ø		Ø
Asset Condition	82		NatHV(M&E)	10%	Monthly	\checkmark											
Asset Condition	83		NatHV, Nat	10%	Monthly	\checkmark											
Asset Condition	84	Detritus	Reg, Art, PCol, SCol	10%	Monthly		\square	V	\checkmark	\checkmark	\checkmark	Ø	\square	\checkmark	\square	\checkmark	\square
Asset Condition	85		Acc, AccLV	10%	Monthly	\checkmark											
Customer Facing	86	Rest Area, Heavy Commercial	NatHV(M&E), NatHV, Nat, Reg	10%	Monthly	Ø	Ø	Ø	Ø		Ø	Ø	Ø		V		V
Customer Facing	87	Vehicle Facility and Formed Stopping Area Maintenance	Art, PCol, SCol, Acc, AccLV	10%	Monthly		V		Ø	Ø		Ø			V		
Customer Facing	88		NatHV(M&E)	10%	Monthly	\checkmark											

New Zealand Government



OPM SAMPLE	SIZE	S AND AUDIT F	REQUENCIE	S													
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REF	PORT	ING I	NTEF	RVAL							
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Customer Facing	89		All Roads (except NatHV(M&E))	10%	Monthly	Ø	Ø		Ø		Ø	Ø			Ø		Ø
Customer Facing	90		All Roads	10%	Monthly	\checkmark											
Customer Facing	91		NatHV(M&E)	10%	Monthly	\checkmark											
Customer Facing	92		All Roads (except NatHV(M&E))	10%	Monthly	Ø	V		Ø		Ø	Ø			Ø		Ø
Customer Facing	93		All Roads	10%	Monthly	\checkmark											
Asset Condition	94		NatHV(M&E)	10%	Monthly	\checkmark											
Asset Condition	95	Graffiti Removal	NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	10%	Monthly	Ø	V			Ø		Ø			Ø		
Safety	96		All Roads	10%	Monthly	\checkmark											
Asset Condition	97	Signe	All Roads	10%	Monthly	\checkmark											
Safety	98	Signs	All Roads	10%	Monthly	\checkmark											
Asset Condition	99		All Roads	10%	Monthly	\checkmark											
Asset Condition	100	Frangible Signs	All Roads	100%	Annually							\checkmark					



OPM SAMPLE SIZES AND AUDIT FREQUENCIES																	
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	×	REP	ORT	ING I	NTEF	RVAL							
	MGO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	МАҮ	JUNE
Customer Facing	101	Raised Pavement	All Roads	100%	6 Monthly at night				\checkmark						\checkmark		
Safety	102	Markers	All Roads	100%	6 Monthly at night				\checkmark								
Asset Condition	103	Raised Pavement Markers	All Roads	10%	Monthly	\checkmark		Ø	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Asset Condition	104	Edge Marker Posts	All Roads	10%	Monthly	\checkmark											
Safety	105	Edge Marker Posts	All Roads	100%	6 Monthly at night				\checkmark						\checkmark		
Asset Condition	106		NatHV(M&E)	10%	2 Monthly	\checkmark											
Asset Condition	107	Culvert Marker Posts	All Roads (except NatHV(M&E))	10%	2 Monthly	Ø		Ø		V		Ø					
Asset Condition	108	Transport Agency P/22 Pavement Marking – Lines, Text, Symbols, etc.	All Roads	100%	Bi- Annually					Ø						Ø	
Safety	109	Carriageway Lighting	All Roads	100%	Quarterly at night	\checkmark			\checkmark			\checkmark			\checkmark		



OPM SAMPLE SIZES AND AUDIT FREQUENCIES																	
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	≻.	REP	ORT	ING I	NTEF	VAL							
	MGO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	МАҮ	JUNE
Asset Condition	110		NatHV(M&E)	100%	Quarterly at night	\checkmark			\checkmark			\checkmark			\checkmark		
Asset Condition	111		NatHV, Nat	100%	Quarterly at night	\checkmark			\checkmark			\checkmark					
Asset Condition	112		Reg, Art, PCol, SCol, Acc, AccLV	100%	Quarterly at night	Ø						Ø					
Asset Condition	113		NatHV(M&E)	100%	Quarterly at night	\checkmark			\checkmark			\checkmark			\checkmark		
Asset Condition	114		All Roads (except NatHV(M&E))	100%	Quarterly at night				Ø						Ø		
Asset Condition	115		NatHV(M&E)	100%	Quarterly at night	\checkmark			V			\checkmark			V		
Asset Condition	116	Carriageway Light Slip Bases	All Roads	100%	Annually							\checkmark					
Customer Facing	117	Incident Persona	NatHV(M&E)	100%	Monthly	\checkmark											
Customer Facing	118	Management	NatHV, Nat, Reg, Art	100%	Monthly	\checkmark											



OPM SAMPLE SIZES AND AUDIT FREQUENCIES																		
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	≻	REPORTING INTERVAL												
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Customer Facing	119		PCol, SCol, Acc, AccLV	100%	Monthly	\checkmark	\checkmark	\square		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\square	\checkmark	
Customer Facing	120		NatHV(M&E)	100%	Monthly	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Customer Facing	121		All Roads (Not NatHV(M&E))	100%	Monthly	Ø	Ø	Ø	Ø		Ø	Ø	Ø	Ø	Ø	Ø		
Customer Facing	122		All Roads	100%	Monthly	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Safety	123		Favoured Motorcycle Routes		Monthly	Ø	Ø	Ø		Ø		Ø		Ø	Ø	Ø		
Safety	124	Sealed Route Surface Bumps	Shoulders on Designated Cycle Routes and all Cycle Lanes		Monthly	Ø		Ø	Ø	Ø	Ø	Ø	Ø	V	Ø	Ø	Ø	
Safety	125		Cycle Paths		Monthly	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Safety	126	Sealed Route Potholes	High Risk and Favoured Motorcycle Routes		Monthly	Ø	Ø	Ø	Ø		Ø	Ø		Ø	Ø			



OPM SAMPLE SIZES AND AUDIT FREQUENCIES																	
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	×	REF	ORT	ING I	NTER	VAL							
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	МАҮ	JUNE
Safety	127		Shoulders on Designated Cycle Routes and all Cycle Lanes		Monthly		Ø		Ø	Ø	Ø	Ø	Ø	Ø		Ø	Ø
Safety	128		Cycle Paths		Monthly	\checkmark											
Safety	129	Sealed Route	High Risk and Favoured Motorcycle Routes		Monthly		Ø	Ø		Ø	Ø	Ø	Ø		Ø		
Safety	130	Deformations, Heaves and Shoves	Shoulders on Designated Cycle Routes and all Cycle Lanes		Monthly	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Safety	131		Cycle Paths		Monthly	\checkmark											
Safety	132	Sealed Route Edge Breaks	High Risk and Favoured Motorcycle Routes		Monthly	Ø	Ø			Ø	Ø				Ø		

CAMPLE CIZES AND AUDIT EDECUENCIE



OPM SAMPLE SIZES AND AUDIT FREQUENCIES																	
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REF	ORT	ING I	NTER	RVAL							
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Safety	133		Shoulders on Designated Cycle Routes and all Cycle Lanes		Monthly		Ø	Ø							Ø	Ø	
Safety	134		Cycle Paths		Monthly	\checkmark											
Customer Facing	135		Cycle Lanes		Monthly	\checkmark											
Customer Facing	136	Sealed Route Shoulder Maintenance	Shoulders on Designated Cycle Routes		Monthly	Ø	Ø	Ø		V	Ø	Ø	Ø	Ø	Ø	Ø	
Customer Facing	137		Cycle Paths		Monthly	\checkmark											
Customer Facing	138	Unsealed Route Surface Bumps	Cycle Paths		Monthly	\checkmark		Ø	\checkmark	\square		\checkmark	\square	\checkmark	\square	Ø	\square
Customer Facing	139	Unsealed Route Potholes	Cycle Paths		Monthly	\checkmark			\checkmark		\checkmark	\checkmark	\checkmark	\checkmark			Ø
Customer Facing	140	Route Vegetation Control	All Routes	100%	Monthly	\checkmark		Ø	\checkmark		V	Ø	\checkmark	\checkmark		\checkmark	Ø
Safety	141	Route Litter and Detritus Removal	High Risk and Favoured Motorcycle Routes		Monthly						Ø						



OPM SAMPLE SIZES AND AUDIT FREQUENCIES																	
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	×	REP	ORT	ING I	NTER	RVAL							
	MGO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	МАҮ	JUNE
Safety	142		Shoulders on Designated Cycle Routes and all Cycle Lanes		Monthly					Ø		Ø	Ø				Ø
Customer Facing	143		Cycle Paths (sealed)		Monthly	Ø	V	\checkmark	\checkmark	\checkmark	\checkmark	V	V	\checkmark	\checkmark	\checkmark	V
Customer Facing	144		Cycle Paths (unsealed)		Monthly	Ø		\checkmark	\checkmark	\square	V	\checkmark	Ø	\checkmark	\square		\square
Customer Facing	145		PCol, SCol	10%	Monthly	\checkmark											
Customer Facing	146	Potholes (Unsealed Roads)	Acc	10%	Monthly	\checkmark											
Customer Facing	147	(enscaled fields)	AccLV	10%	Monthly	\checkmark											
Customer Facing	148	Corrugations	PCol, SCol, Acc	10%	Monthly	\checkmark											
Customer Facing	149	(Unsealed Roads)	AccLV	10%	Monthly	\checkmark											
Safety	150	Loose Metal (Unsealed Roads)	PCol, SCol, Acc, AccLV	10%	Monthly	\checkmark	\square	\checkmark	\checkmark								

ODM CAMPLE CIZES AND AUDIT EDEOUENCIES



OPM SAMPLE SIZES AND AUDIT FREQUENCIES																	
ОРМ ТҮРЕ		NAME	ROAD CLASS	ш	~	REP	ORT	ING I	NTEF	VAL							
	MOO			AUDIT SIZ	FREQUENC	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	МАҮ	JUNE
Safety	151	Deformations, Heaves and Shoves (Unsealed Roads)	All Roads	10%	Monthly		Ø	Ø	Ø	Ø	Ø	Ø			Ø		
Asset Condition	152		PCol, SCol	10%	Monthly	\checkmark											
Asset Condition	153	Drainage (Unsealed Roads)	Acc	10%	Monthly	\checkmark											
Asset Condition	154	(0.1000.00100000)	AccLV	10%	Monthly	\checkmark											
Customer Facing	155		All Roads	100%	Monthly	\checkmark											
Customer Facing	156		(within defined	100%	Monthly	\checkmark											
Customer Facing	157	inclaent Response	enhanced response area)	100%	Monthly	V				Ø						\checkmark	
Customer Facing	158	Traffic Congestion Management	All Roads	100%	Monthly	\checkmark			\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark		
MONTHLY TOTALS								114	129	114	118	122	118	113	129	122	124