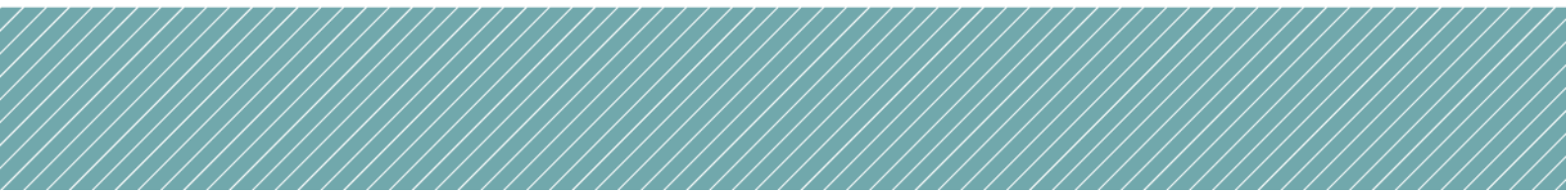




Volume 5  
**APPENDICES**

<<insert Network Name>> Network Outcomes Contract  
Contract No: <<insert Contract Number>>



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# 1 Contract Works

## 1.1 DEFINITIONS

In addition to First Schedule, Part B, Clause 1.2 Definitions, the table below provides clarification on definitions used within the Contract Documents – CAPITALS are defined further as a separate entry.

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>30–Metre Geometry</b>	A system of measurement of retro–reflectivity (night–time visibility) that is based upon the angles experienced when light from car headlights reflects off PAVEMENT markings 30 metres ahead of the vehicle and reflects back to the driver’s eye.
<b>Accrual</b>	Accrual means the expected level of expenditure commitment at the end of the month for each SAP work unit, whether claimed or approved or not, and, as a minimum, the expenditure the Principal should expect to pay in the next two cheque runs.
<b>Accrual Report</b>	Accrual Report means that report delivered in accordance with Section 5 of the Specification.
<b>Adjacent Highway Operations and Maintenance Contractor</b>	Generally, refers to the maintenance contractor who looks after the next stretch of state highway beyond the contract boundary. However, in Auckland, this could be a Local Authority maintenance contractor. For example, Greenlane could be deemed a “highway”. Refer to the region’s Emergency Procedures Manual, to clarify.
<b>Agreement for Entry</b>	Means “Agreement for Entry onto Land”, prepared by the Principal’s Property Acquisition Agent for any purpose, for the legally defined land under the control of a landowner(s) or lessee(s) and signed and witnessed by the Principal and the landowner(s) or lessee(s), for each piece of land affected by the project, allowing legal access without trespass for the Contractor for the purposes of the contract.
<b>Agrichemical</b>	Any substance whether inorganic or organic, man–made or naturally occurring, modified or in its original state, that is used in any agriculture, horticulture or related activity to eradicate, modify or control flora and fauna (NZS 8409 New Zealand Standard Code of Practice for the Management of Agrichemicals).



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Anti-Icing</b>	The application of a liquid-CHEMICAL to trafficked surfaces prior to the formation of ICE to prevent ICE forming or binding to the PAVEMENT. See also DE-ICING.
<b>Archaeological site</b>	Archaeological site is defined in Section 2 of the Historic Places Act 1993. In terms of this definition a site could include an object or material.
<b>Asphaltic Concrete</b>	A mixture of bituminous binder and aggregate with or without mineral filler produced in a mixing plant. It is delivered, spread and compacted while hot, for use in road construction. See also HOT MIX ASPHALT.
<b>Asset Information Database</b>	Asset Information Database means those asset information systems that the Principal uses to record asset information including scope, condition history, performance history, location and works history, relating to the assets managed within this contract.
<b>Asset Owner</b>	The road controlling authority, the Transport Agency or local authority
<b>Assets</b>	The infrastructure that is owned by the Principal within the Network. All assets are recorded within the Asset Information Database.
<b>At Grade Crossing Point</b>	Any point on the Network that has been designed to assist pedestrians, cyclists, equestrians, etc to cross the roadway. This may include assets such as pedestrian island, zebra crossing, raised pavement platform, specific signage, tactile paving, barriers, fences, signalised services, other traffic calming and management assets.
<b>Audio Tactile Profiled (ATP) Markings</b>	PAVEMENT markings that provide audio, tactile (vibratory), and visual information to road users. See also BLOCK.
<b>Bailey Bridge</b>	The Bailey bridge is a type of portable, pre-fabricated, truss bridge. The Bailey bridge 'kit set' systems are ideal for use in emergency situations (such as when bridges collapse or are washed out) and as temporary structures for planned events.
<b>Barrier</b>	See ROAD SAFETY BARRIER.



TABLE 1.1: DEFINITIONS

TERM	DEFINITION
<b>Batter</b>	<p>The uniform SIDE SLOPE of walls, banks, cuttings, etc. The amount of such slope or rake, usually expressed as a ratio of horizontal to vertical, distinct from grade.</p> <p>In the context of VEGETATION CONTROL, that portion of legal road reserve (land) between the SURFACE WATER CHANNEL and the legal road boundary, excluding any SIDE DRAINS, and inclusive of cuts/fills/embankments or flat/sloping ground.</p> <p>See Diagram 1.1.</p>
<b>Benefit Cost Ratio</b>	Benefit Cost Ratio means the ratio derived by dividing the contract benefits by the total cost of the project and calculated in accordance with the methodology set out in the <i>Economic Evaluation Manual</i> .
<b>Benefit Cost Ratio Cut-off</b>	Benefit Cost Ratio Cut-Off means that Benefit Cost Ratio nominated by the Transport Agency in the National Land Transport Programme for the current year as the minimum allowable for a project to be included for funding in the National Land Transport Programme.
<b>Bleeding</b>	<p>The exudation of bituminous binder onto the road surface. Bleeding binder may be picked up on the tyres of passing traffic.</p> <p>It is distinguished from FLUSHING, which is a solid smooth surface caused by binder rise to the extent that the binder is above the surfacing aggregate. Bleeding may occur without the presence of any significant FLUSHING. FLUSHING may be the end result of extensive bleeding.</p>
<b>Block</b>	The intermittent raised bumps formed from material and installed on the road surface or stripe to form an AUDIO TACTILE PROFILED MARKING. The term Block corresponds to the term RIB in MOTSAM.
<b>Bridge</b>	A bridge is any structure carrying traffic on, under or over the highway, and includes any CULVERT or multiple CULVERTs with a total waterway area greater than 3.4m <sup>2</sup> . It includes, but is not limited to, CULVERT, stock or traffic underpasses or overbridges, and conventional bridges.
<b>Budget</b>	Budget means the total financial allocation for a particular phase of the project, including contingencies, as agreed with the Principal as the target for expenditure for the phase.
<b>Building Consent Application</b>	Building Consent Application means an application made in accordance with Clause 45 of the Building Act to carry out any building work for any temporary or permanent movable or immovable structure not exempted by the Third Schedule of that Act.

**TABLE 1.1: DEFINITIONS**

<b>TERM</b>	<b>DEFINITION</b>
<b>Carriageway</b>	The portion of a road or BRIDGE devoted particularly to the use of vehicles, inclusive of SHOULDERS and auxiliary lanes. Divided roads are considered to have two carriageways. See also SEALED CARRIAGEWAY, SEALED SHOULDER, UNSEALED SHOULDER.
<b>Cash Flow</b>	Cash Flow means the expected cumulative lump sum expenditure, including funds expended in previous years, predicting how the budget for the project phase will be spent in the agreed time frame. The cash flow will be provided in monthly or annual lump sums.
<b>Chemical</b>	In the context of VEGETATION CONTROL, any HERBICIDE.  In the context of Winter Maintenance, a solid or liquid CHEMICAL DE-ICING agent added to trafficked surfaces to prevent ICE forming on the road surface or to assist with the removal of snow or ICE once formed.
<b>Chemical Control</b>	The control of VEGETATION to the required standard by the use of HERBICIDES.
<b>Chip seal</b>	A PAVEMENT SURFACING TYPE consisting of a layer or layers of uniformly sized aggregate or sealing chip, spread over a film of freshly sprayed binder and subsequently rolled into place. Called surface dressing in the UK and sprayed seal in Australia.
<b>Coastal Marine Consent Application</b>	Coastal Marine Consent Application means a resource consent application for a consent defined in Clause 87c of the Resource Management Act and otherwise managed in accordance with the section on Restricted Coastal Activities in that Act.
<b>Cold Milling or Cold Milled</b>	A method of automatically controlled removal of PAVEMENT to a desired depth with especially designed equipment. Generally used as part of the process to achieve restoration of a surface to a specified grade or slope, free of high points, ruts and other imperfections. The resulting textured PAVEMENT surface can be used immediately as a driving surface, and is usually then overlaid with a new surfacing.
<b>Conductor</b>	Any wire or cable used or placed in position for the conveyance of electricity; but does not include the wire of any electric fence.
<b>Confidential Information</b>	Information that is by its nature confidential, marked as “confidential”, provided by a party “in confidence” or information which a party knows or ought to know is confidential. It does not include information that is in the public domain through no fault of either party.

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Construction Season</b>	<p>The season where the Contractor shall complete pavement rehabilitation and resurfacing works.</p> <p>Refer to Maintenance Specification for the dates that apply to this Network.</p>
<b>Contingency Plan</b>	<p>Contingency Plan means an alternative plan to be put into operation if needed, especially in case of emergencies, or if a primary plan fails.</p>
<b>Contract Works Material</b>	<p>Both electronic and physical versions of plans, designs, drawing and specifications, data, reports, intellectual property, and technical correspondence and every other matter or thing created or delivered under or in accordance with this contract, predominantly for and connected to the Contract Works (excluding any physical works).</p>
<b>Cracking</b>	<p>The appearance in the road surface of small, regular, or irregular shaped continuous areas with fissures. Examples include:</p> <ul style="list-style-type: none"> <li>• Alligator Cracking, also known as chicken wire or crocodile cracking: semi-regular polygon-shaped contiguous areas of cracking, irrespective of the size of the polygon.</li> <li>• Block Cracking: a pattern of cracking of a PAVEMENT surface that appears as a series of connected rectangles, irrespective of the size of the rectangle.</li> <li>• Reflective Cracking: visible cracks in the PAVEMENT surfacing, caused by propagation of cracks through to the PAVEMENT surface from the underlying PAVEMENT layer.</li> <li>• Longitudinal and Transverse Cracking: long cracks that run along or across the road.</li> <li>• Shrinkage Cracking: cracks caused by shrinkage of old bituminous surfaces.</li> <li>• Slippage Cracks: occur only in thin ASPHALTIC CONCRETE wearing course. They are usually crescent shaped and point in the direction of the thrust of the wheels on the PAVEMENT.</li> </ul>

TABLE 1.1: DEFINITIONS

TERM	DEFINITION
<b>CS-VUE</b>	CS-VUE means the web-based compliance management system used by the Transport Agency. The purpose of the system is to hold the Transport Agency's resource consents, designations, building consents, Department of Conservation (DoC) concessions, Historic Places Trust (HPT) authorities, and associated documents, as well as providing the tools to efficiently and effectively manage consent compliance.
<b>Culvert</b>	One or more adjacent pipes or enclosed CHANNELS for conveying a watercourse or stream below the formation level of a road up to a maximum size of 3.4m <sup>2</sup> cross-sectional area, including accessway culverts. A CULVERT marker peg marks its position. See also DRAINAGE SYSTEM, ROUTINE DRAINAGE MAINTENANCE and STORMWATER STRUCTURE.
<b>Culvert Drain</b>	An open drain or ditch formed to drain water from the SURFACE WATER CHANNEL to a SIDE DRAIN or natural watercourse.
<b>Culvert Waterways</b>	Maintenance of culvert waterways includes gravel and waterway clearing.  In the context of VEGETATION CONTROL, the length of drain between the CULVERT inlet or outlet and the adjacent fence-line or to a minimum of 5m from the CULVERT, whichever is the lesser.
<b>Curve</b>	Curves are regular bends in roads to bring a gradual change of direction. Some OPM criteria applies to curves as defined in the Out of Context Curve Table within RAMM. i.e. <ul style="list-style-type: none"> <li>• High-risk rural curve &lt; 400m radius</li> <li>• Medium-risk rural curve &lt; 400m radius</li> <li>• Low-risk rural curve 250m to 400m radius</li> <li>• Low-risk rural curve &lt; 250 radius</li> <li>• Urban curve &lt; 250m radius</li> </ul>
<b>Customer</b>	Customer means every person or community affected or influenced by any of the Principal's operations within the Network area.
<b>Cycle Furniture</b>	Street furniture specific to cyclists (e.g. bike stands)
<b>Cycle Lane</b>	Cycle lanes are painted lanes within the carriageway, motor vehicle drivers may use the lane in certain circumstances such as to access parking or to turn at intersections or driveways.



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Cyclic Inspection</b>	A type of ROUTINE INSPECTION, carried out at the specified inspection frequency.
<b>Cycling Facility</b>	Infrastructure that is cycling-specific, such as sealed shoulder (for cycling), cycle lanes, separated cycling paths, shared paths, grade separation and bike parking.
<b>Cycling Lane</b>	<del>Cycling lanes are special vehicle lanes painted and marked within the carriageway, motor vehicle drivers may use the lane in certain circumstances such as to access parking or to turn at intersections or driveways.</del>
<b>Damage</b>	Any gouging of the PAVEMENT, removal of the seal, removal or harm caused to DRAINAGE FEATURES, TRAFFIC CONTROL DEVICES, ROADSIDE FURNITURE or other road assets so that they no longer meet specification.
<b>Death</b>	An incident resulting in the loss of life.
<b>Defect</b>	In the context of physical works, the condition of an asset or a component of an asset which is deemed to require repair intervention in accordance with the relevant OPM.  In the context of management tasks or deliverables, the condition of management task or deliverable which is deemed to require remedial effort.
<b>Defects Notification Period</b>	The period of a construction contract during which the Contractor is responsible for repairing or rectifying defects that appear in the Works. The period usually commences upon practical completion of the Works and runs for a specified time frame (sometimes also known as the maintenance period).
<b>De-icing</b>	The application of a <del>solid</del> CHEMICAL to trafficked surfaces to assist with the removal of snow or ICE once formed. See also ANTI-ICING.
<b>Depression</b>	A road defect in which the road surface has sunk. Depressions will vary in shape and can develop either without loss of waterproofing (such as wheelpath rutting) or due to loss of waterproofing (as in areas where water can pond and may be associated with PAVEMENT settlement). Depressions may be isolated or not, roughly circular in shape or of considerable length along the wheelpaths.

TABLE 1.1: DEFINITIONS

TERM	DEFINITION
<b>Detritus</b>	<p>Any collection of fragments or material on the SEALED CARRIAGEWAY surface or in DRAINAGE FEATURES.</p> <p>Detritus includes loose sealing chip, PAVEMENT aggregate, dead animals, SLIPS, deposits of windblown sand or GRIT, deposits of loose aggregates, fallen leaves and the result of the build-up of minor droppings or spillages created from passing traffic or climatic conditions. See also SLIPS.</p> <p>Detritus in the context of DRAINAGE FEATURES may include wood debris, LITTER, and VEGETATION.</p>
<b>DJR</b>	<del>Daily Job Record. A record detailing resource utilisation.</del>
<b>Drainage</b>	Natural or artificial means for intercepting and removing surface or subsurface water (usually by gravity). See also DRAINAGE SYSTEM.
<b>Drainage Faults</b>	<p><del>For sumps, SERVICE HOLES (MANHOLES), catchpits and other DRAINAGE FEATURES, a fault exists:</del></p> <p><del>a. If more than 30% of the volume of the structure is filled with debris or the debris is within 200mm of the outlet pipe invert and/or</del></p> <p><del>b. More than 10% of the outlet pipe entry area is covered with debris.</del></p> <p><del>For CULVERTS, a fault exists when more than 10% of the depth of the CULVERT inlet, outlet or barrel, along its entire length, is filled with debris.</del></p> <p><del>For SIDE DRAINS, a fault exists if water ponds or water does not readily flow to the outlet points.</del></p> <p><del>See also DRAINAGE SYSTEM and Diagram 1.1.</del></p>
<b>Drainage Feature</b>	Any feature that forms part of the DRAINAGE SYSTEM. These include STORMWATER STRUCTURES, SIDE DRAINS, lined and unlined CHANNELS.
<b>Drainage System</b>	Includes all STORMWATER STRUCTURES, SURFACE WATER CHANNELS, SIDE DRAINS and other features associated with controlling storm water and runoff from the NETWORK. This includes BRIDGE deck DRAINAGE including CHANNELS, subsoils and associated outlets.
<b>Edge Break</b>	Fretting or breaking of the edge of a bituminous surface, such that the loss of surfacing encroaches into the CARRIAGEWAY by more than 100mm from the nominal seal edge or onto the white edge line.



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Edge Rutting</b>	A defect where ruts appear at the edge of a bituminous surface, usually in the UNSEALED SHOULDER.
<b>Embossed</b>	LONG LIFE PAVEMENT MARKINGS which have a pattern imprinted on them at the time of application while the material is still hot. The pattern is generally not formed by the extrusion foot or applicator but is rather applied to the pavement marking by a separate piece of equipment, such as a roller.
<b>Environmental Asset</b>	Environmental assets include storm water, vegetated systems, stormwater ponds, landscaping areas and mitigation planting, fish passages, stopping places, rest areas and associated furniture, protected vegetation, heritage sites, vegetated retaining walls and noise barriers.
<b>Environmental Incident</b>	An environmental incident is an occurrence or set of circumstances, as a consequence of which pollution (air, water, noise, or land) or an adverse environmental impact has occurred, is occurring or likely to have occurred. Adverse environmental impact includes discharge of contaminants to ground or water, harm to flora and fauna, disturbance of heritage items, and impacts to human health or amenity. What constitutes as an environmental incident shall be defined by the Principal.
<b>Exception Report</b>	Exception Report means that report to be delivered in accordance with RAMM, SCRIM (Sideways-force Coefficient Routine Investigation Machine) and financial. <del>the Transport Agency's Road Event Information System (TREIS) requirements of this Specification.</del>
<b>Extreme Snow and Ice Events</b>	Extreme weather events that result in short periods of times when specified winter maintenance levels of service cannot be maintained. See also ANTI-ICING, DE-ICING, ICE, SNOW CLEARANCE and WEATHER MONITORING.
<b>First Aid Treatment</b>	Work related injury requiring treatment with basic first aid techniques, by first aider or nurse.
<b>Flushing</b>	A flushed surface is one in which the binder is approaching or above the mean level of the top of the surfacing aggregate such that surface texture is lost.
<b>Fly Tipping</b>	Illegal dumping is typically distinguished from littering by the type and amount of material and/or the manner in which it is discarded.

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Footpath</b>	A footpath is a type of thoroughfare that is intended for use only by pedestrians and not other forms of traffic such as motorised vehicles, cycles, and horses. Urban footpaths are usually paved.
<b>Grit</b>	Fine angular mineral aggregate, usually passing a 4.75mm sieve.
<b>Gritting</b>	The application of GRIT to trafficked surfaces. Often used where ICE may create or has created a potential traffic hazard.
<b>Hapai</b>	Safety works investment prioritisation process.
<b>Health and Safety Compliance Notice</b>	Health and Safety Compliance Notice means the notice contained in the Transport Agency's Minimum Standard Z/5 – Health and Safety Compliance Notice to be delivered in this contract.
<b>Herbicide</b>	An AGRICHEMICAL that is specifically designed to kill or eradicate unwanted plants.
<b>High Performance Pavement Marking</b>	PAVEMENT markings that at any time during the contract or warranty period comply with the following minimum performance criteria: <ul style="list-style-type: none"> <li>• Reflectivity (dry): A minimum of 150 mcd/m<sup>2</sup>/lux when measured with a 30-METRE GEOMETRY retroflectometer.</li> <li>• Reflectivity (wet): A minimum of 80 mcd/m<sup>2</sup>/lux when measured with a 30-METRE GEOMETRY retroflectometer.</li> </ul>
<b>Hot Mix, Hot Mix Asphalt</b>	Aggregate and bitumen heated and mixed while hot, transported to the site of construction, laid and compacted while hot. See also PREMIX and ASPHALTIC CONCRETE.
<b>Ice</b>	Ice includes frost and can consist of: <ul style="list-style-type: none"> <li>• Thick ice, several layers-thick of ice crystals;</li> <li>• Thin ice or ice glaze, a one-crystal layer-thick ice that moulds over the macro-texture of the road;</li> <li>• Ground icing, e.g. frost or light snow compacted by trafficking.</li> </ul>

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Incident</b>	<p>Any event that may affect either:</p> <ol style="list-style-type: none"> <li>The NETWORK'S safety, use, and integrity</li> <li>Road users' safety</li> <li>Any event that results in a spill or discharge (accidental or intentional), that may require the Contractor's action and the Engineer Principal agrees that it constitutes an incident.</li> </ol> <p>An unplanned event that resulted in, or had the potential to result in a death, MTI, LTI, No Injury and Serious Near Miss.</p>
<b>Indigenous Species</b>	A species originating in and characteristic of New Zealand.
<b>Industry Best Practice</b>	A best practice is a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark. In addition, a "best" practice can evolve to become better as improvements are discovered.
<b>Initial Remark</b>	<p>In the context of a Transport Agency P/20 Performance Based Pavement Marking Contract, the first time the PAVEMENT markings are remarked. The purpose of the initial remark is to bring the standard of PAVEMENT markings on the NETWORK up to the standard required by Transport Agency P/20. An initial remark is only completed the first time a Transport Agency P/20 contract is used on a NETWORK (subsequent contracts will involve taking over a NETWORK with markings already at Transport Agency P/20 standard).</p> <p>In the context of a resurfacing, the first PAVEMENT remarking after a surfacing TREATMENT.</p>
<b>Inventory</b>	A summary of all the items of a particular asset type (e.g. signs or DRAINAGE FEATURES) on a NETWORK, including some information about them, such as location, age, size and type.
<b>KiwiRAP</b>	KiwiRAP is an internationally recognised road assessment program (RAP) that aims to raise awareness of the risk of being involved in a Crash on New Zealand's state highways. KiwiRAP uses different methods to measure road safety, including risk maps based on the crash history of a road and five star ratings based on a road's engineering features.

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Lighting Fixture</b>	The term lighting fixture means lamps, luminaries, and other parts of the lighting structure or power supply including poles, cables and associated protection.
<b>Limit of Works</b>	The full Network extent as defined within the Maintenance Specification, Section 1.7 and Appendices, Table 1.4.
<b>Litter</b>	Any single item with a dimension greater than 100mm. For example, items such as paper, refuse, rubbish, garbage, tyre parts, drink bottles and cans or any item of a like nature.
<b>Long Life Pavement Marking</b>	Marking materials that have a long service life and are typically applied at thicknesses of about 0.9mm or more.
<b>Lost Time Injury</b>	Work related injury or illness certified by a medical practitioner resulting in a worker not able to work on next scheduled day or shift after injury.
<b>Maintenance Intervention Strategy (MIS)</b>	The Maintenance Intervention Strategy (MIS), which: <ul style="list-style-type: none"> <li>a. States the type and extent of work permitted under each maintenance strategy.</li> <li>b. Aligns to the highway environment..</li> </ul>
<b>Maintenance Programme</b>	A PROGRAMME designed to: <ul style="list-style-type: none"> <li>• Improve the existing condition of the road asset, including PAVEMENTS, surfacings, ROADSIDE FURNITURE</li> <li>• Improve the environment for members of the public using State Highways. This includes visual improvements and improvements that make the NETWORK safer.</li> <li>• Meet the above requirements within current financial budgets.</li> </ul>



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Make Safe</b>	<ol style="list-style-type: none"> <li>1. To mitigate the exposure to risk due to the existence of a hazard that has the potential to cause harm. This may involve the removal of obstructions or the erection of signs or BARRIERS</li> <li>2. In the context of Winter Maintenance, actions undertaken to ensure that the NETWORK has appropriate signage in accordance with CoPTTM, the approved TMP and any restrictions relating to level of service and where: <ul style="list-style-type: none"> <li>• The PAVEMENT surface is either free of ICE or free of settled snow, or ICE is covered with GRIT such that: a vehicle tyre is not in full contact with ICE or snow; sufficient tyre friction is maintained for traffic to travel without loss of control, and vehicles have the ability to stop without skidding when driving at an appropriate speed for the conditions, or,</li> <li>• The road can be opened with some restrictions being sign posted appropriately such as open to non-towing vehicles, open to vehicles with chain or open with speed restriction.</li> </ul> </li> </ol> <p>See also ANTI-ICING, DE-ICING, GRITTING, ICE and SNOW CLEARANCE.</p>
<b>Manhole</b>	See SERVICE HOLE.
<b>Mechanical Control</b>	Control of VEGETATION using equipment such as mowers and weed eaters. The use of HERBICIDES is excluded.
<b>Medical Treatment Injury</b>	Treatment of injury or illness by a qualified medical practitioner.
<b>Milling</b>	In the context of PAVEMENT maintenance, refer to COLD MILLING. In the context of PAVEMENT marking, the removal or partial removal of LONG LIFE MARKINGS.
<b>MIS</b>	<del>The Maintenance Intervention Strategy (MIS), which:</del> <ol style="list-style-type: none"> <li>a. <del>States the type and extent of work permitted under each maintenance strategy.</del></li> <li>b. <del>Aligns to the highway environment.</del></li> </ol>
<b>National Land Transport Programme</b>	National Land Transport Programme means the proposed programme of expenditure for the following three years, prepared by the Transport Agency in accordance with the Land Transport Management Act, Clause 19.

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Near Miss (Close Call)</b>	Incident that could have caused injury but did not.
<b>Network Monitoring</b>	In the context of Winter Maintenance, the observation of the NETWORK by methods such as WEATHER MONITORING, PATROLLING and other means for the purpose of being proactive in mobilising the appropriate resources as necessary to ensure the specified levels of service are achieved during a winter event, such as an EXTREME SNOW AND ICE EVENT. See also PATROLLING and WEATHER MONITORING.
<b>No Spray Zone</b>	Areas where the use of CHEMICAL agents for VEGETATION CONTROL is not permitted.
<b>Non-Routine Marking</b>	<p>Non-routine marking is defined as:</p> <ol style="list-style-type: none"> <li>Any marking work completed that is not part of a REMARK.</li> <li>Includes new and urgent marking works.</li> <li>Includes REMARKING all resurfacing, rehabilitation and reconstruction works completed each year within the NETWORK (as specified).</li> </ol> <p>See also REMARK.</p>
<b>Non-Standard Sign</b>	All signs that are not STANDARD SIGNS but have been approved by the Principal's Traffic and Safety Manager, such as signs from the Location Referencing Management System (LRMS) Manual.
<b>Notice of Requirement (NOR)</b>	Notice Of Requirement (NOR) means a notice given in accordance with Clause 168 of the Resource Management Act.
<b>Notifiable Incident</b>	Notifiable Injury, Illness, Incident or Event as described under HSWA.
<b>Notification</b>	The time the Contractor was advised of the INCIDENT, defect or emergency by the Engineer, the Contractor's personnel, or a third party (such as Police, Principal or a member of the public). This includes observations made during any inspections, or when the Contractor becomes, or should have become, aware of the INCIDENT through monitoring requirements.



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Open Graded Porous Asphalt (OGPA)</b>	Open Graded Porous Asphalt, a gap-graded hot mixed asphalt containing a mix of binder and larger sized aggregates with only small amounts of fine material, with relatively high void content, and depending largely on mechanical interlock for stability. It has interconnected voids which aid drainage of road surface water. See also ASPHALTIC CONCRETE, PAVEMENT SURFACING TYPE.
<b>Other Personnel</b>	Other Personnel means any other of the Contractor's personnel (including Sub-contractors' personnel) who may be used to complete the Contract Works.
<b>Other Structures</b>	<p><del>Other structures include, but are not limited to, tunnels, commercial vehicle compliance stations, stock effluent disposal receptors, truck compounds, control rooms, and river or coastal protection works.</del></p> <p>Other structures include structures within the road corridor meeting any of the following criteria:</p> <ol style="list-style-type: none"> <li>structures where public safety or critical network function is likely to be significantly affected in the event of failure, irrespective of ownership,</li> <li>structures of high value,</li> <li>structures requiring specialised engineering inspection.</li> </ol> <p>Other structures include, but are not limited to, underpasses, tunnels, bailey bridges, footbridges, large drainage structures, rockfall and slope debris control structures, mechanically stabilised earth structures, stabilised slopes and batters, and river or coastal protection works.</p>
<b>Overslip</b>	Is a SLIP that is located on the uphill side of the road.
<b>Paint</b>	Refers to paint used for line markings on road surfaces, generally paint intended for use by spray application. It is expected that paint used in conjunction with this specification will be compliant with Transport Agency M/7 Specification for road marking paint.

TABLE 1.1: DEFINITIONS

TERM	DEFINITION
<b>Patrol, Patrolling</b>	<p>a. In the context of Winter Maintenance, a regular inspection of the highway, initiated during periods when a snow or ICE event can be reasonably expected. Patrolling should as far as possible be carried out by a vehicle especially equipped for the purpose. This should be a vehicle capable of making some immediate response to hazardous situations encountered, such as spreading GRIT (or DE-ICING CHEMICAL where specified). See also NETWORK MONITORING.</p> <p>b. In the context of INCIDENT response, mobilisation of the appropriate resources as necessary to ensure the specified levels of service are achieved.</p>
<b>Pavement</b>	The portion of the road, excluding SHOULDERS, that is placed above the design subgrade level for the support of, and to form a running surface for, vehicular traffic. It is supported by the subgrade. See Diagram 1.1.
<b>Pavement Surface Types</b>	See CHIP SEAL, ASPHALT CONCRETE, OPGA.
<b>Pedestrian</b>	Any person on foot or using a powered wheelchair or scooter or a wheeled means of conveyance propelled by human power, other than a bicycle.
<b>Pest Plants Pests</b>	WEEDS that can cause serious harm to the natural environment, be an economic threat or affect human health NOXIOUS or invasive weeds and scrub as defined within the Regional Plant Pest Strategies. This may include gorse, broom, heather, blackberry, bracken, fern, and others.
<b>Possession of Site</b>	In the context of PRE-RESEAL repairs, possession of Site is when the Contractor becomes responsible for any outstanding work that has appeared, and any PRE-RESEAL repairs that the Contractor has not completed, and all repairs up until sealing, for sections scheduled for resealing that year.
<b>Pothole</b>	A hole in a sealed or unsealed the PAVEMENT, frequently round in shape, resulting from loss of PAVEMENT material and caused by the action of traffic. As a defect, potholes are defined as where surface attrition has occurred in areas of PAVEMENT over an area greater than 150mm in diameter but not exceeding 1m <sup>2</sup> ; and the underlying PAVEMENT is exposed. (This does not include SCABBING and STRIPPING on a chip seal).

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Premix</b>	<p>Premix includes all bitumen-bound materials, whether hot-laid or cold-laid, that have been mixed prior to being placed in the repair area. Premix does not include bitumen-stabilised aggregates.</p> <p>To be classified as premix as opposed to bitumen stabilised aggregate, the mix shall have a binder content greater than 2.5%.</p> <p>See also HOT MIX ASPHALT.</p>
<b>Pre-reseal</b>	Any activity undertaken in the period up to a year before chip sealing, to prepare the surface for the chip seal, such as DIGOUT, CRACK filling, lichen removal.
<b>Programme</b>	A system of projects or services intended to meet a public need or to treat an asset in order to reach a desired level of service.
<b>Programmed Maintenance</b>	A strategy to intervene to reduce or optimise ROUTINE MAINTENANCE needs, e.g. bulk replacement of edge marker posts, or a carriageway lighting replacement PROGRAMME. See also ROUTINE MAINTENANCE.
<b>Racked-in Seals</b>	<p>In a racked-in seal, the binder is applied followed by a relatively light application of the big chip and then a smaller chip is applied that sits between the larger chips.</p> <p>The smaller chip effectively locks the larger chip in place. As most of the traffic load is carried by the bigger chip the total effect is a stronger seal. A racked-in seal is not so dependent on traffic compaction to obtain strength.</p>
<b>Rails</b>	Rails are sight rails, bridge rails (non-structural) or pedestrian handrails.
<b>Refurbished EMPs</b>	<p>A refurbished EMP is defined as an EMP which has been either:</p> <ul style="list-style-type: none"> <li>• Straightened,</li> <li>• Cleaned,</li> <li>• Reinstalled (using the same post that has been removed or previously removed from another location), or</li> <li>• Has had replacement of reflectors and/or red bands.</li> </ul>
<b>Reg</b>	Regional road category as defined by the One Network Road Classification (ONRC):

**TABLE 1.1: DEFINITIONS**

<b>TERM</b>	<b>DEFINITION</b>
<b>Remarking</b>	<p>A routine remark:</p> <ol style="list-style-type: none"> <li>1. Is defined as all work associated with remarking existing markings within the NETWORK.</li> <li>2. Includes planned marking works completed since the previous remark.</li> </ol> <p>See also UNSCHEDULED MARKING</p>
<b>Resource Efficiency</b>	Achieving the best possible output for the least volume of materials and energy consumed during the maintenance of the Network, while providing the relevant levels of services for safety, speed, environment and amenity.
<b>Rest Areas</b>	A designated area adjacent to a highway where vehicles can stop temporarily for the rest and relaxation of drivers and passengers.
<b>Retro reflectivity</b>	The property usually provided by glass beads whereby the light from vehicle headlamps is reflected back to the driver, providing delineation at night.
<b>Rib</b>	See BLOCK.
<b>Road Safety Barrier</b>	<ol style="list-style-type: none"> <li>a. A physical BARRIER, including guardrails, designed to resist penetration by an out-of-control vehicle and, so far as is practicable, to redirect colliding vehicles back into the travelled path.</li> <li>b. A BARRIER meeting the specification requirements of Transport Agency M/23.</li> </ol>
<b>Road User</b>	A user of the Network (e.g. someone who travels within the designated road corridor, such as a pedestrian, cyclist, motorcyclist or motorist).

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Roadside Facilities</b>	<p>Roadside facilities include but are not limited to:</p> <ul style="list-style-type: none"> <li>• ROADSIDE FURNITURE</li> <li>• ROAD SAFETY BARRIER systems</li> <li>• Lighting columns</li> <li>• Fences</li> <li>• REST AREA furniture</li> <li>• Pedestrian refuges</li> <li>• Pedestrian facilities (such as pedestrian lighting, belisha beacons, pedestrian crossing poles)</li> <li>• Handrails</li> <li>• CULVERTS</li> <li>• DRAINAGE SYSTEM</li> <li>• BRIDGES</li> <li>• OTHER STRUCTURES</li> <li>• Retaining walls</li> <li>• Sign support structures</li> <li>• WEIGHPIs and weigh stations</li> <li>• Stopping or pull off areas</li> <li>• Other facilities as specified.</li> </ul> <p>Roadside facilities do not include:</p> <ul style="list-style-type: none"> <li>• Toilet facilities</li> <li>• Other facilities as specified.</li> </ul>
<b>Roadside Furniture</b>	<p>These include edge marker posts, route position pegs, CULVERT marker pegs, subsoil drain markers, benchmark markers, calibration site markers, sight rails, BRIDGE end and hazard markers and signs as specified.</p>
<b>Routine Inspection</b>	<p>An activity carried out as part of ROUTINE MAINTENANCE, such as monthly inspection of the NETWORK carried out to create the ROUTINE MAINTENANCE PROGRAMME. See also CYCLIC INSPECTION.</p>
<b>Routine Maintenance</b>	<p>Periodic maintenance as required on an individual item to achieve the service level required, e.g. a digout in a PAVEMENT, or the replacement of a single light bulb. See also PROGRAMMED MAINTENANCE.</p>



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Rural Area</b>	Means any section of road highway with a permanent speed limit greater than 70km/hr as defined within the RAMM carriageway table.
<b>Health and Safety in Design</b>	<p>Health and Safety in Design is a standard that integrates hazard identification and risk assessment methods early in the design process.</p> <p>The Transport Agency now requires that all projects/works are to go through the Health and Safety in Design process. The design team must integrate safety in design standards into projects and encourage collaboration to improve planning, management and the early identification of hazards. Health and Safety in Design reviews should be held during the concept and detailed design phases in the project life cycle, however it may be appropriate in the construction phase if a review has not been held.</p>
<b>Sandwich Seal</b>	<p>A sandwich seal is applied in the following sequence:</p> <ul style="list-style-type: none"> <li>• A layer of large chip is spread directly on the existing surface.</li> <li>• This is followed by a relatively light application of binder.</li> <li>• A smaller chip is then spread directly onto the sprayed binder.</li> <li>• The surface is rolled to compact the seal.</li> </ul> <p>Sandwich seals are useful:</p> <ul style="list-style-type: none"> <li>• On existing sealed surfaces which are unsuitable for conventional resealing as they are rich in binder (e.g. flushed surfaces with little to no texture).</li> <li>• To help correct binder: stone ratios in unstable or potentially unstable seal layers.</li> </ul>
<b>Scabbing</b>	The progressive loss of chip from a chip seal, often in patches. Can be exacerbated by cold weather and the action of traffic. See also STRIPPING.
<b>Schedule</b>	<ol style="list-style-type: none"> <li>1. The Schedule of Prices in a Contract Document.</li> <li>2. A section of the "Conditions of Contract" (blue section) of standard SOMAC documents, e.g. the "First Schedule".</li> <li>3. A list of areas or assets included in the contract</li> <li>4. A list of exclusions from the contract area</li> <li>5. In the context of a VEGETATION CONTROL contract, the Schedule details the areas, type and control required for the contract.</li> </ol>



TABLE 1.1: DEFINITIONS

TERM	DEFINITION
<b>Scheduled Remark</b>	<p>In the context of a Transport Agency P/20 Performance Based Pavement Marking Contract, a scheduled remarking of the PAVEMENT markings (e.g. in response to frost gritting).</p> <p>The purpose of the scheduled remark is to restore the standard of PAVEMENT markings on the NETWORK to the standard required by Transport Agency P/20.</p>
<b>SCoT</b>	<del>Secondary Collector road category as defined by the One Network Road Classification (ONRC).</del>
<b>SCRIM</b>	Sideway force Coefficient Routine Investigation Machine: a machine used to measure wheel path SKID RESISTANCE.
<b>Sealed Carriageway</b>	That portion of the road PAVEMENT sealed to protect and waterproof the underlying PAVEMENT, (inclusive of SEALED SHOULDERS) and provide a suitable driving surface for vehicles. See <del>Diagram 1.1:</del>
<b>Sealed Shoulder</b>	<p>That portion of the SEALED CARRIAGEWAY beyond the traffic lane, located between the traffic lane edge line and the edge of seal, generally flush and contiguous with the SEALED CARRIAGEWAY. See <del>Diagram 1.1:</del></p> <p>A sealed shoulder may comprise of space and an appropriate surface for cycling outside the general traffic lanes along the edge of a generally un-kerbed road and may have been identified as a cycle facility as part of the STATE HIGHWAY CYCLE NETWORK. The sealed shoulder will provide space and an appropriate surface for cycling outside the general traffic lanes. Sealed shoulders also have other purposes such as pull-off areas for breakdowns. They are generally provided on higher speed rural roads.</p>
<b>Seasonal Sign</b>	Any STANDARD SIGN that is a standard information or regulatory sign and is erected and removed according to a set operational procedure for a limited part of the year, e.g. a seasonal speed limit change.
<b>Second Coat Sealing</b>	A second-coat seal is a seal applied on top of a previously applied first-coat seal over PAVEMENT repairs to provide both waterproofing and a surface texture consistent with the surrounding PAVEMENT. For a PRE-RESEAL repair a Second Coat Seal is not required.
<b>Separated Cycleway</b>	Separated cycleways are facilities exclusively for cycling. They involve some form of physical separation from motor traffic and are generally situated on or adjacent to the roadway, usually within the legal road. The separation may involve horizontal and/or vertical components.

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Serious Near Miss</b>	An incident or condition that could have caused a Lost Time Injury (LTI) or Medical Treatment Injury (MTI) injury/illness or death but did not.
<b>Service Hole, Service Cover</b>	A shaft with a removable cover that leads down to a sewer, drain or other underground service. Also called a MANHOLE.
<b>Service Related Works</b>	Service Related Works means activities generated through the management of the installation, maintenance or modification of services within the road corridor.
<b>Shared Path</b>	A shared path means an area of road, separated from a roadway, that may be used by some or all of the following persons at the same time: pedestrians, cyclists, riders of mobility devices and riders of wheeled recreational devices.
<b>SHGDM</b>	<del>Transport Agency's State Highway Geometric Design Manual (DRAFT).</del>
<b>Shoulder</b>	This term refers to the general area between the edge of seal and a point 500mm beyond the invert of the SURFACE WATER CHANNEL. See also UNSEALED SHOULDER, SEALED SHOULDER and <del>Diagram 1.1.</del>
<b>Shoulder Hinge Point</b>	In the cross-section of a road, the point at which the SIDE SLOPE would intersect with the UNSEALED SHOULDER, or in the absence of an UNSEALED SHOULDER, the SEALED SHOULDER. <del>See Diagram 1.1.</del>
<b>Side Drain</b>	A longitudinal surface drain or ditch, usually U-shaped and generally located between the SURFACE WATER CHANNEL and the legal road boundary. While it is intended to carry water from the surrounding land, in some situations the side drain may run immediately adjacent to the road PAVEMENT and collect surface water runoff from the road surface and adjacent land. <del>See Diagram 1.1.</del>
<b>Side Slope</b>	That area of road formation, located between the SHOULDER HINGE POINT and the SURFACE WATER CHANNEL, having a gradient steeper than 1:12, but no steeper than 1:5. <del>See Diagram 1.1.</del>
<b>Single Slip Event</b>	One or more slips that can be managed within a single implementation of traffic control or one or more slips that occur at the same site within a 24-hour period.

**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Skid Resistance</b>	<p>The frictional resistance provided by the PAVEMENT surface to vehicle tyres during braking or cornering manoeuvres, that opposes skidding. It is usually measured on wet surfaces.</p> <p>PAVEMENT surface Skid Resistance is measured on a network-wide basis with machines such as the SCRIM.</p> <p>PAVEMENT marking Skid Resistance is measured using devices such as the BPT.</p>
<b>Slips</b>	<p>Slips include collapsing banks and frettings from cuttings:</p> <ol style="list-style-type: none"> <li>They are greater than 1m<sup>3</sup> in volume.</li> <li>They encroach on to the surface of the SEALED CARRIAGEWAY and/or affect the effective operation of existing DRAINAGE FEATURES.</li> </ol> <p>Also refer to OVERSLIP and UNDERSLIP.</p>
<b>Snow Clearance</b>	<p>The removal of snow from all trafficked surfaces, including on the surfaces of SEALED CARRIAGEWAYS outside the lead-in lines on the approaches to single lane BRIDGES, when it becomes (or to prevent it from becoming) a potential traffic hazard.</p>
<b>Splitter Island</b>	<p>A raised or painted traffic island that separates traffic in opposing directions of travel. They are typically used at roundabouts and on the minor road approaches to an intersection.</p>
<b>Standard Sign</b>	<p>All signs compliant with MOTSAM and the Traffic Control Devices Manual. See also NON-STANDARD SIGNS.</p>
<b>State Highway Cycle Network</b>	<p>Is the identified cycle routes on the state highway network that are commonly used by people on bikes and is developed as a combination of the national, regional, local strategic cycling networks and/or a popular cycling routes.</p>
<b>Storm water Structure</b>	<p>Any structure with a maximum waterway not exceeding 3.4m<sup>2</sup>. It includes, but is not limited to, CULVERTS, SERVICE HOLES (MANHOLES), sumps, slot drains, catch pits, soak pits, flumes, outlets to subsoil drains, storm water ponds, outlets to bored horizontal drains, and accessway CULVERTS.</p>
<b>Stripping</b>	<p>Stripping is the displacement of binder from the chip, causing chip loss, generally through cold or wet conditions. See also SCABBBING.</p>

TABLE 1.1: DEFINITIONS

TERM	DEFINITION
<b>Structures</b>	General definition for bridges, large culverts, gantries and retaining walls.
<b>Summer Period</b>	<del>November to February inclusive, or as otherwise defined within the Maintenance Specification, Section 7.</del>
<b>Surface Water Channel</b>	An <b>unlined</b> open drain or ditch or <b>concrete-lined channel</b> formed for the collection and DRAINAGE of water runoff from the road's surface. The width of <b>an unlined</b> the CHANNEL shall be a minimum of 1.0m (0.5m either side of the invert). Also known as a V-shaped CHANNEL. See also SIDE DRAIN and <del>Diagram 1.1.</del>
<b>Taonga</b>	An object that relates to Maori culture, history or society: <ul style="list-style-type: none"> <li>• Manufactured or modified in New Zealand by Maori.</li> <li>• Brought into New Zealand by Maori.</li> <li>• Used by Maori.</li> </ul>
<b>Temporary Traffic Management</b>	The process of managing road users through or past a work-site in a safe manner with minimal delay and inconvenience.
<b>Terminal End System</b>	A Transport Agency M/23 compliant end treatment used to protect the road user from the barrier end and forms part of the overall barrier system and length of need.
<b>Texturising Seal</b>	A pre-treatment to prepare a surface for a reseal by reducing texture variance, or to reinstate texture.
<b>Third Party (3<sup>rd</sup> Party)</b>	Someone who may be indirectly involved but is not a principal party to an arrangement, contract, or transaction.  Examples include utility providers, other contractors, adjacent land owners, drivers, pedestrians, cyclists and horse riders.
<b>Traffic Control Devices</b>	Any sign, signal, PAVEMENT marking or other installation placed or erected for the purpose of regulating, warning or guiding traffic.
<b>Treatment</b>	Any activity undertaken on the road, such as resurfacing or ROUTINE MAINTENANCE, with the intention of achieving the desired level of service.  In the context of winter maintenance, the work required to deal with snow and ICE hazards on the NETWORK so that the NETWORK meets the required levels of service.



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Trimming</b>	In the context of a VEGETATION CONTROL contract, the removal of branches or removal of mature trees, scrub or shrubs with a trunk less than 300mm diameter.  In the context of PAVEMENT maintenance, the removal of excess material to create a straight edge on a digout or repair, prior to filling and/or sealing.
<b>Underslip</b>	Is a SLIP that is located on the downhill side of the road.
<b>Unofficial Signs</b>	Signs non-compliant with MOTSAM and the Traffic Control Devices Manual, which the Principal has not approved. (See also STANDARD SIGNS, NON-STANDARD SIGNS).
<b>Unscheduled Marking</b>	Unscheduled marking: a. Any marking work that is not part of a REMARK. b. Includes new and urgent marking works. c. Includes remarking all resurfacing, rehabilitation and reconstruction works completed each year within the NETWORK (as specified).  See also REMARK
<b>Unscheduled Work</b>	Unscheduled work can be either new or maintenance work required outside standard or programmed activities. See also URGENT WORK.
<b>Unsealed Shoulder</b>	That portion of the CARRIAGEWAY, located between the edge of seal and the SHOULDER HINGE POINT, having a slope generally no steeper than 1:12, except on curves where the super-elevation may increase the slope. See Diagram 1.1.
<b>Urban Area</b>	Means any section of highway with a permanent speed limit up to and including 70km/hr or as defined within the RAMM Carriageway table.
<b>Urgent Work</b>	Urgent Work is a subset of UNSCHEDULED WORK.
<b>Value for Money</b>	Means optimal selection using the Principal's Allocation Profile (includes the project's cost-effective contribution to the New Zealand Transport Strategy objectives).
<b>Vegetation</b>	All plant life alive or dead within the NETWORK and including, but not limited to, grass, weeds, WEEDS, scrub, including PEST PLANTS PESTS, shrubs, moss, lichen, trees, overhanging and fallen branches.



**TABLE 1.1: DEFINITIONS**

TERM	DEFINITION
<b>Vegetation Control</b>	All work required to control and maintain VEGETATION within the legal road reserve and other areas specified in the Contract Documents.
<b>Vegetation Management</b>	All work required to manage and maintain VEGETATION and CANOPY coverage within the road reserve and other areas (outside of the vegetation free zone) specified in the Contract Documents.
<b>Verge</b>	That area of legal road reserve located between the SHOULDER HINGE POINT and the legal road boundary. See Diagram 1.1.
<b>Weather Monitoring</b>	Consists of regularly obtaining weather information from forecasts and weather stations, and obtaining information from road users and visual monitoring. Once an ICE or snow event is predicted, weather monitoring shall be performed at a maximum interval of 2 hours until the end of the event. An event is at an end when the NETWORK is free of any snow or ICE and no further events are predicted for the next 24 hours. See also NETWORK MONITORING and PATROLLING.
<b>Weed</b>	A plant considered undesirable, unattractive, or troublesome, especially one growing where it is not wanted. Weeds that are included in regional pest management strategies are termed PEST PLANTS.
<b>Weighpit</b>	A slot (pit) on a concrete pad designed to accommodate portable wheel weighing scales that are used to weigh vehicles. The depth of the slot enables the surface of the scales to be at the same level as the surrounding PAVEMENT surface.
<b>Wheel Path</b>	That portion of a pavement that is contacted by the wheels/tyres of vehicles in a typical traffic stream.  The location and width varies; however, it is typically from 0.9m to 1.2m wide.
<b>Winter Period</b>	The period where the Network is at risk of snow and ice events.  Refer to Conditions of Contract, Schedule 2 – Special Conditions of Contract – Other Conditions of Contract for the actual applicable date period for this Network.

<<insert Network Name>>

Network Outcomes Contract

Contract No: <<insert no>>

NZ Transport Agency

Appendices

DRAFT

## 1.2 ACRONYMS

The table below provides the meaning to certain acronyms used within the Contract Documents.

**TABLE 1.2: ACRONYMS**

ACRONYM	MEANING
AADT	Annual Average Daily Traffic
AC	Asphaltic Concrete
<b>Acc</b>	Access, but not low volume, road category as defined by the One Network Road Classification (ONRC).
<b>AccLV</b>	Access, and low volume, road category as defined by the One Network Road Classification (ONRC).
ANPR	Automatic Number Plate Recognition
<b>Art</b>	Arterial road category as defined by the One Network Road Classification (ONRC).
ATMS	Advanced Traffic Management System
ATP	Audio Tactile Profiled
AVL	Automatic Vehicle Location
BCR	Benefit Cost Ratio
<b>BDS</b>	<del>Bridge Data System</del>
<b>BIMIQ</b>	Barrier Installation and Maintenance Inspections Qualification
CAR	Corridor Access Request
CAS	Curve Advisory Sign
CB	Contract Board
CDEM	Civil Defence Emergency Management
CIMS	Coordinated Incident Management System
CMA	Calcium Magnesium Acetate
CMR	Contract Management Review
CMS	Changeable Message Sign

TABLE 1.2: ACRONYMS

ACRONYM	MEANING
CMT	Contract Management Team
CoPTTM	Code of Practice for Temporary Traffic Management
CP	Contract Plan
CRMS	Customer Relationship Management System
CRS	Crash Reduction Study
CSEMP	Customer & Stakeholder Communication Management Plan
CVP	Customer Value Proposition
CWS	Cycle Warning Sign
DISPL	Displacement
DJR	Daily Job Record
DOC	Department of Conservation
DSI	Death and Serious Injury
DXF	Drawing Interchange Format
EEM	Economic Evaluation Manual
EMOGPA	Epoxy-Modified Open-Graded Porous Asphalt
EMP	Edge Marker Post
EPPP	Emergency Procedures and Preparedness Plan
ERP	Established Route Position
ESC	Equilibrium Scrim Coefficient
ESMP	Environmental and Social Management Plan
ESRI	Economic and Social Research Institute Environmental Systems Research Institute
FTE	Full Time Equivalent
FWD	Falling Weight Deflectometer
FWP	Forward Work Programme

TABLE 1.2: ACRONYMS

ACRONYM	MEANING
FWS	Flood Warning Sign
GeoTIFF	Georeferenced Tagged Image File Format
GIS	Geographic Information System
HCV	Heavy Commercial Vehicle
HPA	Health Promotion Agency Historic Places Act
HPMV	High Productivity Motor Vehicle
HSIMS	Highway Structures Information Management System
HSMP	Health and Safety Management Plan
IANZ	International Accreditation New Zealand
IL	Investigatory Intervention Level
IRI	International Roughness Index
ITS	Intelligent Transport System
ITP	Inspection and Test Plan
IWS	Ice Warning Signs
JPEG	<del>Joint Photographic Experts Group</del>
KAT	KiwiRAP Analysis Tool
KPI	Key Performance Indicator
KRA	Key Result Area
LA	Local Authority
LAR	Limited Access Roads
LATMS	Local Area Traffic Management Scheme
LHS	Left hand Side
LINZ	Land Information New Zealand
LOS	Levels of Service
LRMS	Linear Road Measurement System



TABLE 1.2: ACRONYMS

ACRONYM	MEANING
LRS	Local Roads Supplement
LSU	Lane Signal Unit
LTPP	Long Term Procurement Programme or Long-Term Pavement Performance
LUD	Land Use Development
LWP	Left Wheelpath
MASH	Manual for Assessing Safety Hardware
MCOS	Minimum Conditions of Satisfaction
MIS	Maintenance Intervention Strategy
MMP	Maintenance Management Plan
MNCS	Monthly Network Compliance Score
MOTSAM	Manual of Traffic Signs and Markings
MOU	Memorandum of Understanding
MPD	Minimum Profile Depth
MSE	Mechanically Stabilised Wall
MVMS	Mobile Variable Message Sign
N/A	Not Applicable
NAASRA	National Association of Australian State Road Authorities
<b>Nat</b>	National, but not High-Volume, road category as defined by the One Network Road Classification (ONRC).
<b>NatHV</b>	National, and High-Volume, road category as defined by the One Network Road Classification (ONRC).
NCHRP	National Cooperative Highway Research Program
NLTP	National Land Transport Programme
NOC	Network Outcomes Contract
NSH	National Strategic Highways

TABLE 1.2: ACRONYMS

ACRONYM	MEANING
NSHVH	<del>National Strategic High Volume Highways</del>
NZAA	New Zealand Archaeological Association
NZTM	New Zealand Transverse Mercator
OGPA	Open Graded Porous Asphalt
OHDS	Over-Height Detection System
ONRC	One Network Road Classification
OPM	Operational Performance Measure
<b>PCol</b>	Primary Collector road category as defined by the One Network Road Classification (ONRC).
PFR	Project Feasibility Report
PIP	Principal's Intervention Period
PPE	Personal Protective Equipment
PPFM	Programme, Policy and Funding Manual
QMP	Quality Management Plan
QWS	Queue Warning Sign
RAMM	Road Asset Maintenance Management
RAPT	Review and Prioritisation Team
RBC	Regional Bridge Consultant
RCA	Road Controlling Authority
RCH	<del>Regional Connector Highway</del>
RDH	<del>Regional Distributor Highway</del>
REG	Roading Efficiency Group
RFP	Request for Proposal
RHS	Right Hand Side
RIAWS	Rural Intersection Advanced Warning Sign

TABLE 1.2: ACRONYMS

ACRONYM	MEANING
RLT	Repeated Load Triaxial
RLWP	Rut Left Wheelpath
RMP	Risk Management Plan
RPMP	Regional Pest Management Plan
RQP	Rehabilitation Quality Plan
RRWP	Rut Right Wheelpath
RSH	Regional Strategic Highways
RSMA	Road Safety Manufacturers Association
RSS	Rural School Sign
RWP	Right Wheelpath
SAL	Skid Assessment Length
SAP	Systems, Applications, and Products. This is the Principal's financial management system for the management of financials, projects, contracts and property.
SAWS	Speed Activated Warning Sign
SCol	Secondary Collector road category as defined by the One Network Road Classification (ONRC).
SCMP	Stakeholder and Communication Management Plan
SCRIM	Sideway-force Coefficient Routine Investigation Machine
SH	State Highway
SHAMP	State Highway Asset Management Plan
SHCM	State Highway Control Manual
SHDOM	State Highway Database Operations Manual
SHGDM	Transport Agency's <i>State Highway Geometric Design Manual</i> (DRAFT).
SHSNMAM	State Highway Safe Network Management Activity Manual
SiD	Safety in Design

**TABLE 1.2: ACRONYMS**

ACRONYM	MEANING
SID	Speed Indication Device
SMS	Slip Monitoring Sign
SVSS	School Variable Speed Sign
SWC	Surface Water Channel
SWIPP	<del>Safety Works Investment Prioritisation Process</del>
TCD	Traffic Control Devices
TCP	Traffic Control Plan
TF	Tender Form
TIFF	Tagged Image File Format
TLA	Territorial Local Authority
TMP	Traffic Management Plan
TMS	Traffic Monitoring System
TOC	Traffic Operations Centre
Transport Agency	New Zealand Transport Agency
<del>TREIS</del>	<del>Traffic Road Event Information System</del>
TRI	Total Recordable Injuries
TWS	Truck Weighbridge Sign
UAV	Unmanned Aerial Vehicle
<del>VAC</del>	<del>Value Assurance Committee</del>
VMS	Variable Message Sign
VMSS	Variable Mandatory Speed Sign
WAP	Works Access Permit
WIM	Weigh in Motion
XML	Extensible Markup Language

### 1.3 LOCATION OF WORKS

<<Insert Map here>>

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## 1.4 KEY ROLES WITHIN THE PRINCIPAL'S ORGANISATION

TABLE 1.4: ROLES, RESPONSIBILITIES AND NAMES

ROLE	RESPONSIBILITY	NAME
Asset Integrator	<p>The purpose of the Asset Management Integrator role is to consistently develop and implement best practice asset management across the transport system that deliver value and benefits to our customers.</p> <p>Key Accountabilities include;</p> <ul style="list-style-type: none"> <li>• Leadership in asset management decisions</li> <li>• Raise sector capability in Asset Management competency</li> <li>• Assist and guide the system management teams in developing Annual Plans, 3 and 10 year programmes</li> <li>• Ensure maintenance and operations solutions are prioritised efficiently and realise customer benefits</li> <li>• Undertaking robust independent reviews to help embed good asset management practices from Quality Management and Maintenance Management Plans</li> <li>• Support the expedited recovery of the Network following an emergency event</li> <li>• Demonstrate strong commercial acumen in reviewing contract issues and developing pragmatic solutions.</li> </ul>	<<to complete>>
Consents and Approvals planners	<p>The Consents and Approvals planners operate as the Principal's representative on the planning and consenting aspects of state highway projects and maintenance activities with a focus on ensuring all relevant environmental requirements/obligations/risks are identified and adequately addressed</p>	<<to complete>>

**TABLE 1.4: ROLES, RESPONSIBILITIES AND NAMES**

ROLE	RESPONSIBILITY	NAME
Contract Board	<p>Review contract progress in terms of physical achievement and contract performance measures, and provide strategic support to the Suppliers’s Contract Manager and the Engineer’s Representative.</p> <p>Resolving conflict.</p> <p>Make recommendations on contractual points.</p>	<<to complete>>
Journey Manager	<p>The Journey Manager looks beyond the day to day operations of the transport system using influence to continuously improve how the network is operated for customers.</p> <p>Key aspects of the role include:</p> <ul style="list-style-type: none"> <li>• Understanding customer issues through customer insight &amp; local relationships</li> <li>• Optimisation planning advice such as that needed to deliver low cost – low risk improvements to the operation of the network.</li> <li>• Operations planning advice to support planned and unplanned events and emergency management activities using tools like network operating plans and network activity planning.</li> <li>• Operations delivery support for regionally or nationally significant events, especially when Civil Defence are involved.</li> </ul>	<<to complete>>

TABLE 1.4: ROLES, RESPONSIBILITIES AND NAMES

ROLE	RESPONSIBILITY	NAME
Maintenance Contract Manager	<p>The Maintenance Contract Manager operates as the Engineer's representative</p> <p>Key aspects of the role include:</p> <ul style="list-style-type: none"> <li>Administering the contract in adherence to the principles of NZS3917 under the delegation of the powers of the Engineer to Contract.</li> <li>The key link to promote and ensure healthy working relationships exists between both parties.</li> <li>Responsible for ensuring the outcomes of the contract are delivered.</li> <li>Responsible for representing and treating both parties in a fair and professional manner in accordance with the guiding principles of the contract and NZS 3917.</li> </ul>	<<to complete>>
Manager – Systems Management	<p>Leads the Principal's System Management team in the Region. Local representative on regional governance groups and spokesperson for communications with public and stakeholders. Responsible for performance of the Network.</p> <p>Ensures staff have appropriate guidance.</p> <p>Ensures Principal's priorities are clearly communicated.</p>	<<to complete>>
Moderation Team	<p>A small team consisting of a rotation of Maintenance Contract Managers and Network Managers, Principal Advisor Business Asset and Information Manager and Business analysts.</p> <p>The key role of the moderation team is to review and moderate as necessary the KRA results to ensure national consistency of scoring.</p>	<<to complete>>
Senior Manager Maori	Provide high level oversight on the development of Maori Engagement Plans.	<<to complete>>

**TABLE 1.4: ROLES, RESPONSIBILITIES AND NAMES**

ROLE	RESPONSIBILITY	NAME
Network Manager	<p>The Network Manager is responsible for the condition of the Network to meet customer levels of service defined by the One Network Road Classification.</p> <p>Key aspects of the role include:</p> <ul style="list-style-type: none"> <li>• Forward works planning</li> <li>• Performance of assets</li> <li>• Corridor/network operations</li> <li>• Resilience/risk management.</li> </ul> <p>The Network Manager is also responsible for the planning and delivery of improvements works and needs of the Network.</p>	<<to complete>>
Safety Engineer	<p>The Safety Engineer works across the organisation to create a safe transport system, reducing deaths and serious injuries on the Network.</p> <p>Key roles include:</p> <ul style="list-style-type: none"> <li>• providing safety oversight in planning</li> <li>• design of the improvement programme</li> <li>• advice and guidance on safety standards</li> <li>• support the network management team and contractors for best safety outcomes</li> <li>• close involvement in the work on safe road use and safe vehicles pillars of the safe system</li> <li>• Manage the low cost low risk safety programme – including development, review and monitoring delivery</li> <li>• Road Safety Management – Strategy development and monitoring</li> <li>• Attend contract safety liaison and safety management meetings. Input to crash reduction study management and process.</li> <li>• Input to the safety in design process on construction projects.</li> </ul>	<<to complete>>

TABLE 1.4: ROLES, RESPONSIBILITIES AND NAMES

ROLE	RESPONSIBILITY	NAME
TOC Operators	TOC Operators act as a communication hub when responding to traffic incidents around the Network, using data from different sources, including CCTV, Police and Emergency Services, and contractors. Traffic flow can be efficiently managed and road users kept informed.	
<<to complete>>		

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## 1.5 NETWORK EXTENTS

**TABLE 1.5.1: ROAD EXTENTS FOR THE TRANSPORT AGENCY**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	CENTRELINE LENGTH (M)	ONRC CATEGORY	RCA
<b>CoPTTM Level 1 Roads</b>					
<<to complete>>					
<b>Total Length (m)</b>					
<b>CoPTTM Level 2 Roads</b>					
<<to complete>>					
<b>Total Length (m)</b>					
<b>CoPTTM Level 3 Roads</b>					
<<to complete>>					
<b>Total Length (m)</b>					
<b>OVERALL TOTAL LENGTH (m)</b>					

**TABLE 1.5.2: ROAD EXTENTS FOR THE XXXXX DISTRICT COUNCIL**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	CENTRELINE LENGTH (M)	ONRC CATEGORY	RCA
<<state CoPTTM level>>					
<<to complete>>					
<b>Total Length (m)</b>					
<<state CoPTTM level>>					
<<to complete>>					

**TABLE 1.5.2: ROAD EXTENTS FOR THE XXXXX DISTRICT COUNCIL**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	CENTRELINE LENGTH (M)	ONRC CATEGORY	RCA
<b>Total Length (m)</b>					
<b>&lt;&lt;state CoPTTM level&gt;&gt;</b>					
<b>&lt;&lt;to complete&gt;&gt;</b>					
<b>Total Length (m)</b>					
<b>OVERALL TOTAL LENGTH (m)</b>					

**TABLE 1.5.3: PEDESTRIAN, CYCLE, MOTORCYCLE AND BRIDLE ROUTE EXTENTS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	CENTRELINE LENGTH (M)	RCA
<b>Shoulders on Designated Cycle Routes</b>				
<b>&lt;&lt;to complete&gt;&gt;</b>				
<b>Total Length (m)</b>				
<b>Cycle Lanes</b>				
<b>&lt;&lt;to complete&gt;&gt;</b>				
<b>Total Length (m)</b>				
<b>High Risk and Favoured Motorcycle Routes</b>				
<b>&lt;&lt;to complete&gt;&gt;</b>				
<b>Total Length (m)</b>				

**TABLE 1.5.3: PEDESTRIAN, CYCLE, MOTORCYCLE AND BRIDLE ROUTE EXTENTS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	CENTRELINE LENGTH (M)	RCA
<b>Separated Cycleways</b>				
<<to complete>>				
<b>Total Length (m)</b>				
<b>Shared Paths</b>				
<<to complete>>				
<b>Total Length (m)</b>				
<b>Bridle Paths</b>				
<<to complete>>				
<b>Total Length (m)</b>				



## 1.6 SPECIFIC DISTANCES BETWEEN THE CENTRELINE AND THE LEGAL ROAD BOUNDARY

**TABLE 1.6: SPECIFIC DISTANCES BETWEEN THE CENTRELINE AND THE LEGAL ROAD BOUNDARY**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	LENGTH (M)	DESCRIPTION OF LIMIT
<<to complete>>				

The distances specified in Table 1.6 above take precedent to any maintenance responsibility maps provided in Appendix 1.8.

<<state any other documentation relevant to defining the legal road boundary, such as online information.>>

## 1.7 TYPICAL CROSS-SECTION FOR DRAINAGE RENEWALS

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## 1.8 MAINTENANCE RESPONSIBILITY MAPS

<<Insert Responsibility Maps here>>

<<State any other documentation relevant to defining the maintenance responsibility zones, such as online information.>>

DRAFT

## 1.9 CURRENT LOCAL AUTHORITY MAINTENANCE AGREEMENTS (MOU)

<<Insert MOUs here>>

DRAFT

## 2 Value Management Proposition

### 2.1 DRAFT GUIDE TO THE KRA PERFORMANCE FRAMEWORK

#### 2.1.1 Introduction

The Key Result Area (KRA) and Key Performance Indicator (KPI) framework is a new contract performance management system for this contract. The performance framework is aligned to the required contract outcomes and the strategic objectives of the Principal.

The purpose of the framework is to make it easier for the partners of the contract relationship to measure, discuss and improve performance. Performance measurement will form the basis for all parties to work together to find opportunities for improved performance. Areas of high performance will be acknowledged and rewarded. Performance measurement provides the context for any areas of poor performance to be addressed.

This Guideline provides further detail on the framework for the KRA and KPI elements of the Contract Document. It does not relate to the at-risk payment mechanism for compliance with the operational performance measures (OPMs).

The design and implementation of the Performance Framework is intended to keep the Contractor's quality, performance and relationship strategies firmly in line with the Principal's responsibilities to government direction.

The performance framework has several purposes:

- Define the outcomes and contract standards that will be used to measure the Contractor's success in delivering the desired levels of service. In some cases the Principal's influence will also be assessed, together with the effect this has had on the Contractor's ability to achieve the desired outcomes. Evidence-based results will be used for the calculation of the level of achievement of KRA and KPI results and contract outcomes. As noted in the contract, this will present the Contractor with opportunities for contract tenure extension and financial gain.
- Implement a repeatable approach, across a national one-network road transport system, to assist in providing transparent and consistent benchmarking. The intent is to bring all the performance, quality and customer-satisfaction information together, enabling the Principal to identify and understand the effectiveness of its processes, standards and Network performance.
- Provide visibility and transparency of performance to the Principal, the Contractor and the industry based on a single reliable and consistent source of information.

The outcomes expected from the performance framework:

- Enhance the Principal's ability to focus on areas requiring improved customer service, safety, quality, Network availability, reliability, innovation and working relationships.
- Be contractual in nature and reflect the undertakings made by the Contractor to the Principal in their response to the RFP contract documentation.

- Foster a spirit of stewardship whereby the Contractor and team take ownership of, accountability for and pride in the services delivered and quality of work done.
- Establish transparency and alignment between the Principal and Contractor, with the emphasis on continuous improvement, and the right people in the right areas for the right reasons.
- Form a tool for greater understanding, sector benchmarking and performance comparison between contract areas and contractors with a particular attention given to the activities that lead to improvements.
- Enable a comparative annual national report to be published, giving the achievement of the various performance measures, for each contract, for each Contractor.

This is a self-compliance auditing and reporting contract, where the Principal has set the compliance reporting frequency for each KRA, KPI and OPM measures.

### 2.1.2 Objectives

The performance framework will support achievement of the aspirations and goals of the contract in the following Key Result Areas:

- Health and Safety
- Road User Safety
- Customer
- Sustainability
- Value and Assurance
- Network Performance.

Underpinned by the six KRAs is a Culture (Health of the Relationship) measure that will assess how effectively the contract partners are working together to deliver on the contract outcomes.

A new element of the performance framework is the introduction of measures that will show the extent to which the Principal's influence affects the Contractor's success.

This is a very significant difference from previous contracts for the Principal and will require a high calibre of implementation to ensure it delivers the anticipated behavioural change.

### 2.1.3 Guiding Principles

The following guiding principles underpin the new performance framework:

- Measures that are aligned to the Principal's strategic intent and desired outcomes from the Maintenance and Operations review.
- Transparency and visibility across the performances (or functions) of the Principal and Contractors predicated on a shared vision for performance and a single reliable and consistent source of information.

- Collaborative approach with a focus on outcomes. Both partners take responsibility for achieving the objectives of the contract by implementing the new Performance framework.
- Simple criteria for success with clear descriptors and objective measures relating to results expected to be achieved.
- An appropriate distribution of lead and lag indicators with both output and outcome measures.
- A mix of both qualitative and quantitative measures.
- The Value Assurance Committee may change the hierarchy of the KPIs and their weighting after aggregated data suggests focus is required on different priorities, and they may change the KPI Measures themselves.
- Contractor accountability to deliver on the pledges made in their tender documentation.
- The Principal-influence measures that support Contractor service delivery and performance.
- The culture (health of the relationship) will be measured to drive the right behaviours and performance outcomes.

#### 2.1.4 Levels of Reporting

There are three main tiers at which the line of sight to results achieved will be visible. This is designed so that each role, at each level will have maximum effect on the areas they are accountable for.

**TABLE 2.1.1: LEVELS OF REPORTING**

LEVEL	KEY FOCUS	MEASURED AGAINST	REPORTING INTERVAL	IMPACT
Contract Management Team	Operational elements of the contract	OPM	Monthly	Financial pain (At-risk payment)
Contract Board	Review KRAs at a regional level	KPIs aggregated into the KRAs	Four monthly	Financial reward and contract tenure
Value Assurance Committee	Review KRAs at a national level	Key Result Areas over the national network	Annually	Performance Framework Regulator Performance Results Publication

#### 2.1.5 Key Result Areas

Each of the six KRAs is weighted equally at 1. This may change if the Value Assurance Committee determines that other business priorities need a higher level of focus.



**TABLE 2.1.2: KEY RESULT AREA FINANCIAL CATEGORY**

<b>KRA</b>	<b>WEIGHTING</b>	<b>REASONING</b>
Health and Safety	1	Safety is of paramount importance on the journey to zero harm. Measure achievement and commitment to health and safety outcomes.
Road User safety	1	Measure opportunities to improve safety outcomes for customers.
Customer	1	Customers' access needs are always considered. Respond to customers' requests and manage their expectations.
Sustainability	1	Maintain a sustainable and engaged contracting market. Contribute to a transport system that adds positively to New Zealand's economic, social and environmental welfare, by adopting good practice and acting in responsible manner.
Assurance and Value	1	Quality outcomes underpinned by accurate Network information and knowledge. Make sound investment recommendations and decisions based on reliable, robust and proven evidence.
Network Performance	1	Ensure the physical indicators of service quality have been provided. Demonstrate that promises made during tendering add value and are delivered. Give customers timely and accurate information so they can make informed choices and schedule works to minimise disruption.
Health of the Relationship	0	The Principal intends to establish a working relationship with the Contractor that fosters open and honest dialogue and feedback, including greater involvement of Sub-contractors and recognition of their value.
<b>TOTAL</b>	<b>6</b>	

The Principal will be responsible for undertaking the Culture (Health of the Relationship) survey which will be carried out six monthly on the Contractor and annually on key Sub-contractors. The survey participants will be Principal, Contractor and Sub-contractor personnel and is intended to measure how well the parties are working together. The results will be available and discussed at both contract Management Team and Contract Board level. The results from the survey will be used to support continuous improvement and behavioural change that delivers successful contract outcomes.

## 2.1.6 Key Performance Indicators

The Table presented in Appendix 2.1.11 indicates the key performance indicators and measures aligned to each of the seven KRAs.

Each key performance indicator and its associated KPI Measure will be scored in one of the following performance bands.

## 2.1.7 Performance Evaluation and Monitoring

The results obtained from the monitoring of the KPIs and KRAs will be evaluated to:

- Measure performance and agree a score for each KPI for the period (tri-annually) under consideration, in accordance with the performance framework guidelines,
- Identify the reasons for poor performance and jointly learn from them,
- Create an environment where the behaviours and results associated with poor performance are considered unacceptable by both the Contractor and the Principal,
- Address the potential likelihood of future poor performance and reaffirm the Principal's expectations of performance,
- When appropriate, develop and recommend an overall annual performance KRA score separately for financial and tenure assessment for the contract year completed, to be provided to VAC for consideration, and
- Determine the contract tenure and financial impact outcomes annually.

Performance will be measured by each of the operational tiers as specified in the reporting intervals of the measure reporting table. It is expected that there will be a grace period (between three to six months dependent on contract commencement date) from the time of contract commencement so that the Contractor can complete the implementation of the system that scores Contractor performance. This will enable the Principal and the Contractor to ensure there are systems and processes in place that support the collection and verification of the data and information required for effective evaluation of performance.

It is expected that the Principal and Contractor will work collaboratively to fully implement the system in the allocated time frame.

Each KPI within a given KRA will be formally reported in the CMB tri-annual (every four months) report. The format of the report will be developed jointly between the Contractor and the Principal (ensuring a nationally consistent framework is adopted) to

ensure visibility to all, and to enable the provision of clear assessment of performance over the Contract Period.

## 2.1.8 KPI Measures

The KPI Measures have been designed to provide a consistent national approach to contract performance management for both the Principal and the Contractor. The scoring mechanism is simple and will enable both the Contractor and the Principal to benchmark comparative performance results across all areas of the Network. There is a mix of output and outcome measures, lead and lag, and a combination of qualitative and quantitative measures. The reporting system will give visibility and transparency for management to see beyond the operational interface.

### Contractor Measures

A significant difference is the way the Environment is measured in the contract. The concept of an environmental triangle has been introduced, which has a scoring system that recognises both positive and negative performance to deliver one overall environmental score. This is designed to recognise and acknowledge where the Contractor is working to improve performance. The environmental triangle is represented in Appendix 2.1.11.

Another concept introduced in the performance framework is Contractor accountability for the overall contract plan submitted to the Principal. Each of the following sub-set plans have measures attached to their successful execution in the KPI framework:

- Quality Management Plan
- Health and safety Plan
- Traffic Control Plan
- Environmental and Social Management Plan
- Customer and Stakeholder Management Plan
- Emergency Procedures and Preparedness Plan
- Maintenance Management Plan.

### The Principal Influence Measure

The purpose of the Principal influence measure is to ensure the operational performance conversations have an equal focus on the Principal and Contractor performance. These measures are designed to support changes in the Contact partners' behaviour to match the overall improvement intent of the contract.

## 2.1.9 Benchmarking

Overall results for each contract will be benchmarked nationally to highlight relative performance, opportunities for improvement, and learning that can be shared amongst all contractors and sub-contractors working on the national road network.

The Principal will undertake the benchmark surveys and learning that can be shared will be shared across all networks and contracting organisations. The aim of benchmarking will be to:

- enable cross fertilisation of ideas that support effective and skilful management of the Network
- achieve maximum efficiency in the use of money expended on the Network
- highlight opportunities for collaborative behaviour that delivers better contract outcomes for all parties to the relationship
- demonstrate value for the investment of public funds on the national network.

### 2.1.10 Implementation Plan

The objective of the contract performance framework is to provide a nationally consistent measurement system that is aligned to the strategic intent of the Principal and expected contract outcomes.

#### Inputs

- Contractor will designate a KPI champion(s) to coordinate with the Principal for a successful implementation of the performance framework.
- Principal will appoint and coordinate a technology developer to create an appropriate system for the contract.

#### Approach

- Technology will be developed to support data collection, reporting, monitoring and benchmarking.
- Develop templates and an overall system for the implementation of the framework.
- The system will be flexible to apply learning from each contract tendering round.
- The implementation will take a structured approach to change management, education and training to ensure that opportunities for collective learning about the application of the framework are created and measurable learning outcomes are met for training needs.
- Evaluate the system to ensure fit for purpose and continual improvement.
- Training will be provided to ensure ongoing national consistency and standardisation of the implementation of the KPIs.

#### Outputs

- The Contractor will have the use of a simple technology based collection and reporting system that is replicated across all contracts.
- Supporting documentation will be provided.

## 2.1.11 Contract Performance Framework

### KRA 1 Health and Safety

<b>Purpose</b>		Safety is of paramount importance on the journey to zero harm, and the Outcomes Contract will measure achievement and commitment to health and safety outcomes.					
<b>Objective</b>							
<b>KRA Weighting</b>							
<b>KRA Champion</b>							
<b>KPIS</b>	<b>KPI WEIGHTING</b>	<b>MEASURE</b>	<b>TIMING OF MEASURE</b>	<b>POOR</b>	<b>MCOS</b>	<b>BEST PRACTICE</b>	<b>OUTSTANDING</b>
<b>1.1 Health and Safety</b>		<b>1.1.1 Total Recordable Injury Frequency Rate (TRIFR)</b> The TRIFR will measure steady or improving monthly trends. TRIFR includes Serious Harm Injury, Lost Time Injury, Medical Treatment Injury and employees on restricted work duties. It excludes First Aid Injury.	Assessed at 4, 8 and 12 months	Below Principal standard {to be agreed}	Meets Principal standard {to be agreed}	Exceeds Principal standard {to be agreed}	Top Performers of those that exceed Principal standard {to be agreed}
		<b>1.1.2 Health and Safety Management Plan</b> Review, update and implementation of learnings within the Health and Safety Management Plan	Assessed at 4, 8 and 12 months	- Activities not audited against plan <b>or</b> - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
<b>1.2 Traffic Management</b>		<b>1.2.1 Traffic Control Plan</b> Review, update and implementation of learnings within the Traffic Control Plan	Assessed at 4, 8 and 12 months	- Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- No changes required to the plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- No changes required to the plan - <2 non-compliances recorded - 0 repeat non-compliances



**KRA 2 Road User Safety**

<b>Purpose</b>		Safety is of paramount importance on the journey to zero harm, and the Outcomes Contract will measure achievement and commitment to improve safety outcomes for customers.					
<b>Objective</b>							
<b>KRA Weighting</b>							
<b>KRA Champion</b>							
<b>KPIS</b>	<b>KPI WEIGHTING</b>	<b>MEASURE</b>	<b>TIMING OF MEASURE</b>	<b>POOR</b>	<b>MCOS</b>	<b>BEST PRACTICE</b>	<b>OUTSTANDING</b>
<b>2.1 Road User Safety</b>		<b>2.1.1 Crash Trend</b> Demonstrate network safety trend analysis – refer to Section 5.5.3 of the Maintenance Specification.	Assessed at 4, 8 and 12 months	Crash trends are deteriorating	Crash trends are steady or improving	Crash trends are steady or improving and the contractor has provided opportunities for network safety trend improvements	Crash trends are steady or improving and the contractor has provided opportunities for network safety trend improvements that are endorsed by the Principal and implemented
		<b>2.1.2 Loss of Control in Darkness</b> The Contractor will report the proportion of loss of control crashes that occur in darkness and report the trend over [the last 12 months].	Assessed at 4, 8 and 12 months	Proportion is high and Trend is steady or deteriorating	Proportion is low and trend is steady or deteriorating	Proportion is low and trend is steady or improving	Proportion is low and trend is improving
		<b>2.1.3 Network Safety Trend Report</b> Contractors are required to submit the Network Safety Trend Report to Maintenance Contract Managers. The report should include all aspects set out in 5.5.3 of the Maintenance Specification.	Assessed at 4, 8 and 12 months	Report fails to meet minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting	Report meets minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting	Report exceeds minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting. The report identifies at least 2 new safety opportunities from crash investigations or other means.	Report exceeds minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting. The report identifies at least 2 new safety opportunities from crash investigations or other means. The report demonstrates Contractor led initiatives that have been implemented and improved safety.

**KRA 3 Customer**

<b>Purpose</b>		Engaging with customers and understanding their needs. Using this to identify value for money solutions and ensuring trends or emerging risks have been identified and flagged with the Principal. Ensuring customers are proactively informed in a timely, and plain English manner about the impact of any works, events and incidents on their journey.					
<b>Objective</b>							
<b>KRA Weighting</b>							
<b>KRA Champion</b>							
<b>KPIS</b>	<b>KPI WEIGHTING</b>	<b>MEASURE</b>	<b>TIMING OF MEASURE</b>	<b>POOR</b>	<b>MCOS</b>	<b>BEST PRACTICE</b>	<b>OUTSTANDING</b>
<b>3.1 Customer Engagement</b>		<b>3.1.1 Customer and Stakeholder Management Plan</b>  Review, update and implementation of learnings within the Customer and Stakeholder Management Plan.	Assessed at 4, 8 and 12 months	- Activities not audited against plan <i>or</i> - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
		<b>3.1.2 Communication of the impact of events and incidents on customers</b>  Good communication means the impact of planned and unplanned events and incidents are provided to customers in a proactive and timely manner.	Assessed at 4, 8 and 12 months	< 85%	≥ 85%	> 90%	> 95%
		<b>3.1.3 Customer satisfaction</b>  Results from the Principal customer survey in NOC region	Assessed at 12 months	Below the minimum acceptable standard	Greater than or equal to the minimum acceptable standard	Top 20%	Top 10%
<b>3.2 Customer Responsiveness &amp; Empathy</b>		<b>3.2.1 Ability to Respond to Customers</b>  Ability to respond to customer queries, complaints and correspondence in a timely, professional and responsive manner	Assessed at 4, 8 and 12 months	Number of actions met <2	Number of actions met ≥2	Number of actions met = 4	Number of actions met = 5

**KRA 4 Sustainability**

<b>Purpose</b>		Contribute to a transport system that adds positively to New Zealand’s economic, social and environmental welfare, by adopting good practice and acting in a responsible manner. Maintain a sustainable and engaged contracting market.					
<b>Objective</b>							
<b>KRA Weighting</b>							
<b>KRA Champion</b>							
<b>KPIS</b>	<b>KPI WEIGHTING</b>	<b>MEASURE</b>	<b>TIMING OF MEASURE</b>	<b>POOR</b>	<b>MCOS</b>	<b>BEST PRACTICE</b>	<b>OUTSTANDING</b>
<b>4.1 Environment</b>		<b>4.1.1 - 1.1.6 Environmental Triangle</b>  Details below	Assessed at 4, 8 and 12 months	Overall environmental triangle score <0	Overall environmental triangle score 0 ≤ 10	Overall environmental triangle score < 10 to <20	Overall environmental triangle score > to 20
		<b>4.1.7 Environmental and Social Management Plan</b>  Review, update and implementation of learnings within the Environmental and Social Management Plan	Assessed at 4, 8 and 12 months	- Activities not audited against plan <i>or</i> - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
<b>4.2 Sustainable market</b>		<b>4.2.1 Healthy Market Pledges</b>  Healthy market pledges made in contract are met.	Assessed 12 months	Healthy Market Pledge is not delivered	Healthy Market Pledge is delivered	Contractor delivers over and above their Healthy Market Pledge and value for money opportunities are identified	Contractor delivers over and above their Healthy Market Pledge and value for money opportunities are identified and implemented

**KRA 5 Assurance and Value**

<b>Purpose</b>		The purpose of the Quality Management Plan is to demonstrate how the Contractor will integrate their systems to deliver the Contract Works.					
<b>Objective</b>							
<b>KRA Weighting</b>							
<b>KRA Champion</b>							
<b>KPIS</b>	<b>KPI WEIGHTING</b>	<b>MEASURE</b>	<b>TIMING OF MEASURE</b>	<b>POOR</b>	<b>MCOS</b>	<b>BEST PRACTICE</b>	<b>OUTSTANDING</b>
<b>5.1 Quality</b>		<b>5.1.1 Quality Management Plan</b> *Includes Data Quality  Application, review, update and implementation of learnings within the Quality Management Plan Process	Assessed at 4, 8 and 12 months	- Activities not audited against plan or - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
<b>5.2 Value For Money</b>		<b>5.2.1 Maintenance Management Plan</b>  Application, review, update and implementation of learnings within the Maintenance Management Plan.	Assessed at 4, 8 and 12 months	- Activities not audited against plan or - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
<b>5.3 Innovation</b>		<b>5.3.1 Innovation</b>  Number of value for money innovation submissions resulting in demonstrable mutual benefits.	Assessed at 4, 8 and 12 months	No new common practices have been introduced.	New common practices have been introduced.	New common practices have been introduced and 2 new proprietary practices.	New common practices have been introduced and >2 other contracts are using propriety practices.

**KRA 6 Network Performance**

<b>Purpose</b>		Ensure the physical indicators of service quality have been provided. Demonstrate that promises made during tendering add value and are delivered. Schedule works to minimise disruption and give customers timely and accurate information so that can make informed choices.					
<b>Objective</b>							
<b>KRA Weighting</b>							
<b>KRA Champion</b>							
<b>KPIS</b>	<b>KPI WEIGHTING</b>	<b>MEASURE</b>	<b>TIMING OF MEASURE</b>	<b>POOR</b>	<b>MCOS</b>	<b>BEST PRACTICE</b>	<b>OUTSTANDING</b>
<b>6.1 Service Delivery</b>		<b>6.1.1 Overall OPM Score Trend</b> Score trend from monthly OPM audit.	Assessed at 4, 8 and 12 months	2 or more financial penalties or 1 100% penalty in the 4-month period.	1 financial penalty in the 4-month period.	No financial penalty in the 4-month period.	No financial penalty and improving trend for last 12 months and no non-compliances within key OPMs and Safety related OPMs.
		<b>6.1.2 Compliance with Contractor's Monthly Programme of Work</b> % compliance with the Contractor's monthly programme of work	Assessed at 4, 8 and 12 months	Contractor does not complete > 90% of work planned in the 4-month period with no acceptable mitigating circumstances.	Contractor completes >90% of work planned in the 4-month period (or provides acceptable mitigating circumstances for work not complete).	Contractor completes >90% of work planned in the last 2 KRA periods (or provides acceptable mitigating circumstances for work not complete).	Contractor completes >90% of work planned in the last 3 KRA without good reason (or provides acceptable mitigating circumstances for work not complete).
		<b>6.1.3 Network Performance Tender Pledges</b> Network performance tender pledges are delivered	Assessed at 4, 8 and 12 months	Tender pledge not delivered to agreed timetable	Tender pledge is delivered to agreed timetable.	Contractor delivers over and above their tender pledge and value for money opportunities are identified	Contractor delivers over and above their tender pledge and value for money opportunities are identified and implemented
<b>6.2 Network Availability</b>		<b>6.2.1 Network Availability</b> Maximum # of occurrences per month in planned events where actual disruption is greater than predicted	Assessed at 4, 8 and 12 months	> 20% of audits	< 20% of audits	< 5% of audits	0% of audits
		<b>6.2.2 Emergency Procedures and Preparedness Plan</b> Application, review, update and implementation of learnings within the Emergency Procedures and Preparedness Plan	Assessed at 4, 8 and 12 months	- Activities not audited against plan <b>or</b> - Activities audited against plan - Non-compliances recorded - No action taken to close non-	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed	- Activities audited against plan - <=5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - <=2 non-compliances recorded - 0 repeat non-compliances



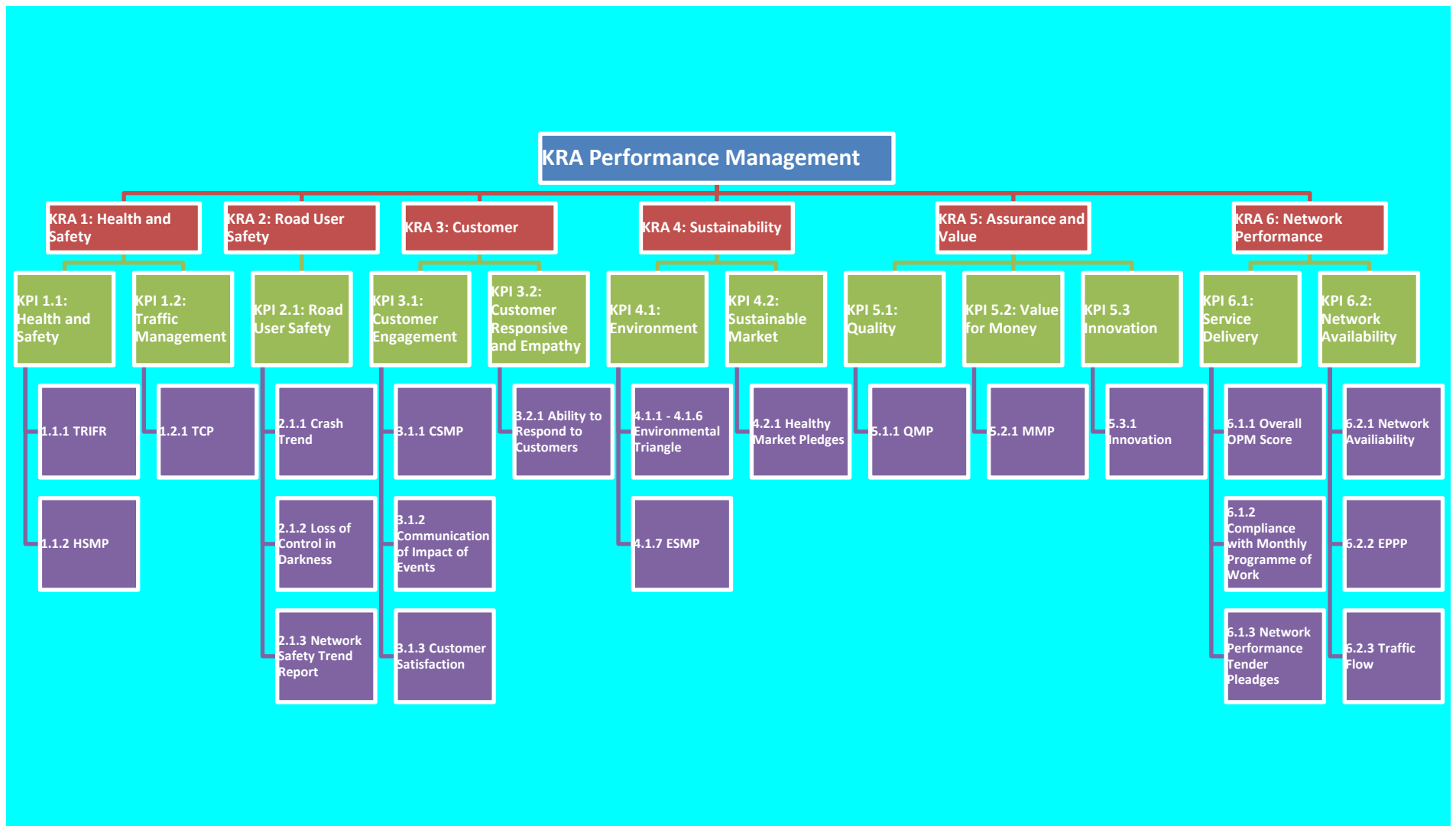
				complies or take corrective action	with corrective actions taken		
		<b>6.2.3 Traffic Flow</b> Actions taken to reduce adverse impacts on traffic flow, or to mitigate the impacts of abnormal traffic flow	Assessed at 4, 8 and 12 months	No engagement to identify events that have adverse impacts on traffic flow	Engagement to identify events that have adverse impacts on traffic flow	Opportunities to mitigate the impact of abnormal traffic flow are identified	Opportunities to mitigate the impact of abnormal traffic flow are implemented

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### KRA 7 Health of the Relationship

<b>Purpose</b>		The Principal intends to establish a working relationship with the contractor that fosters open and honest dialogue and feedback, including greater involvement of Sub-contractors and recognition of their value.					
<b>Objective</b>							
<b>KRA Weighting</b>							
<b>KRA Champion</b>							
<b>KPIS</b>	<b>KPI WEIGHTING</b>	<b>MEASURE</b>	<b>TIMING OF MEASURE</b>	<b>POOR</b>	<b>MCOS</b>	<b>BEST PRACTICE</b>	<b>OUTSTANDING</b>
7.1 Relationship		7.1.1 Demonstration of contract measured in the relationship survey					
		7.1.2 Validation of the sustainable market					
		7.1.3 Integrity and compliance of KRA system					

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## 2.1.12 Measurement of KRA's/KPI's

### KRA 1 HEALTH AND SAFETY

#### KPI 1.1: Health and Safety

##### Objective

The Contractor shall ensure that the Health and Safety Management Plan is a living document and that the application of the plan is having a measurable impact on worker safety.

##### Measure 1.1.1

#### Total Recordable Injury Frequency Rate (TRIFR) for the Contract

The TRIFR will measure the rate of total recordable injuries (Contractor and Sub-contractor(s)) per 200,000 work hours. Reportable injuries include Serious Harm injury (SH), Lost Time injury (LTI), Medical Treatment injury (MTI) and employees on restricted work duties (RWI). It excludes First Aid injuries.

##### Process

The Contractor will capture the data monthly on their internal H&S reporting system and in the future the Principal's specific H&S system. This information will form part of the Contractor's monthly report to the Principal. The information will include sub-contractor's statistics.

The contractor will enter the measure result directly to the Performance Framework System when this becomes available.

##### Data Required

- Total Reportable Injury Frequency Rate:

$$\frac{(SH + LTI + MTI + RWI) \times 200,000}{\text{Total Hours Worked in Period}}$$

##### Measure Score

	Level 1	Level 2	Level 3	Level 4
Description	Below Principal Standard	Meets Principal Standard	Exceeds Principal Standard	Top Performers of those that exceed Principal Standard
Measurement	<input type="checkbox"/> < {TBC}	<input type="checkbox"/> ≥ {TBC} <input type="checkbox"/> < {TBC}	<input type="checkbox"/> ≥ {TBC}	<input type="checkbox"/> ≥ {TBC} <input type="checkbox"/> Top 10%
Score	-0.5	1	2	3

**Measure 1.1.2**

**Review, update and implementation of learnings within the Health and Safety Management Plan**

This measure will capture non-compliances discovered against the Health and Safety Management Plan through audit, accident/ near miss investigation or any other method that the Contractor or Principal may use.

**Process**

The Contractor will capture the data on their internal quality management system. This information will form part of the Contractor’s monthly report to the Principal. The information will include any Sub-contractor’s activity.

The contractor will enter the measure result directly to the Performance Framework System when this becomes available.

**Data Required**

- Non-compliances discovered
- Number of repeat non-compliances
- Number of open non-compliances
- Actions taken to close non-compliances

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	- Activities not audited against plan or - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
<b>Measurement</b>	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance >0	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance =0	<input type="checkbox"/> Non-compliance ≤5 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required	<input type="checkbox"/> Non-compliance ≤2 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required
<b>Score</b>	-0.5	1	2	3

**KPI 1.1: Health and Safety Score**



Combination of the above 2 measures will be calculated to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is $\geq 2$	Overall measures score is $\geq 4$	Overall measures score is $\geq 6$

## KPI 1.2 Traffic Management

### Objective

The Contractor shall ensure that the Traffic Control Plan is a living document and that it is continually being updated with new information.

### Measure 1.2.1

#### Review, update and implementation of learnings within the Traffic Control Plan

This measure will capture non-compliances discovered against the Traffic Management Plan through audit, Incident investigation or any other method that the Contractor or Principal may use.

#### Process

The Contractor will capture the data on their internal quality management system. This information will form part of the Contractor's monthly report to Transport Agency. The information will include any Sub-contractor's activity.

The Traffic Control Plan will cover (but not limited to):

- The approach and resolution of dangerous worksite audits
- Resolution of complaints raised in relation to road works (data taken from CRM system)
- Outline timeliness of audit process by the Principal or third party
- Identify how improvements can be made when non-compliances are raised
- Identify opportunities to improve site safety

The contractor will enter the measure result directly to the Performance Framework System when this becomes available.

#### Data Required

- Non-compliances discovered
- Number of repeat non-compliances
- Number of open non-compliances
- Actions taken to close non-compliances

**Measure score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	<ul style="list-style-type: none"> <li>- Activities not audited against plan</li> <li><i>or</i></li> <li>- Activities audited against plan</li> <li>- Non-compliances recorded</li> <li>- No action taken to close non-compliances or take corrective action</li> </ul>	<ul style="list-style-type: none"> <li>- Activities audited against plan.</li> <li>- Non-compliances recorded</li> <li>- Repeat non-compliances recorded</li> <li>- All non-compliances closed with corrective actions taken</li> </ul>	<ul style="list-style-type: none"> <li>- Activities audited against plan</li> <li>- ≤5 non-compliances recorded</li> <li>- 0 repeat non-compliances</li> </ul>	<ul style="list-style-type: none"> <li>- Activities audited against plan</li> <li>- ≤2 non-compliances recorded</li> <li>- 0 repeat non-compliances</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Non-compliance &gt;0</li> <li><input type="checkbox"/> Repeat non-compliance &gt;0</li> <li><input type="checkbox"/> Open non-compliance &gt;0</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Non-compliance &gt;0</li> <li><input type="checkbox"/> Repeat non-compliance &gt;0</li> <li><input type="checkbox"/> Open non-compliance =0</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Non-compliance ≤5</li> <li><input type="checkbox"/> Repeat non-compliance =0</li> <li><input type="checkbox"/> No changes to plan required</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Non-compliance ≤2</li> <li><input type="checkbox"/> Repeat non-compliance =0</li> <li><input type="checkbox"/> No changes to plan required</li> </ul>
<b>Score</b>	-0.5	1	2	3

**KPI 1.2 Traffic Management Score**

The above measure will be used to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is 1	Overall measures score is 2	Overall measures score is 3

## KRA 2 ROAD USER SAFETY

### KPI 2.1 Road User Safety

#### Objective

The Contractor shall report on road safety within their region and provide reports that are based on factual data, the requirements of the safety management strategy and any assigned safety works within each reporting period. The Contractor must work with the Agency in developing safety improvements that are relevant for the network and able to be delivered within budget.

#### Measure 2.1.1

##### Crash Trend

The crash trend calculation is set out in Section 5.5.3 of the Maintenance Specification.

##### Process

The Contractor will record and report on CAS data of fatal and serious injuries crash trend in relation to vehicle kilometres of travel in their network.

##### Data Required

The data required will look at the trend of fatal and serious injury crashes, as reported in the Crash Analysis System. This will be expressed as the trend in the rolling 12 month average reported monthly over the period from 12 months to the reporting date.

##### Measure score

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	Crash trends are deteriorating	Crash trends are steady or improving	Crash trends are steady or improving and the contractor has provided opportunities for network safety trend improvements	Crash trends are steady or improving and the contractor has provided opportunities for network safety trend improvements that are endorsed by the Principal and implemented
<b>Measurement</b>	<input type="checkbox"/> Regression analysis of crash trends have a slope of > 1%	<input type="checkbox"/> Regression analysis of crash trends have a slope of ≤1% for all trend analysis	<input type="checkbox"/> Regression analysis of crash trends have a slope of ≤1% for all trend analysis	<input type="checkbox"/> Regression analysis of crash trends have a slope of ≤1% for all trend analysis

			<input type="checkbox"/> Opportunities for improvement provided	<input type="checkbox"/> Opportunities for improvement provided <input type="checkbox"/> Endorsed by Principal <input type="checkbox"/> Implemented
<b>Score</b>	-0.5	1	2	3

**Measure 2.1.2**

**Loss of control in darkness**

Loss of control in darkness is an indication of the quality of delineation on the network and is included as it is a component directly in the Contractor’s control. The requirement for loss of control in darkness reporting is set out in section 5.5.3 of the Maintenance Specification.

**Process**

The Contractor will report the proportion of loss of control crashes that occur in darkness and report the trend over [the last 12 months].

**Data Required**

The proportion of reported crashes in the Crash Analysis System with movement codes BB, BC, BD, BF DA and DB that are recorded as occurring during daylight hours

**Measure score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	Proportion is high and Trend is steady or deteriorating	Proportion is low and trend is steady or deteriorating	Proportion is low and trend is steady or improving	Proportion is low and trend is improving
<b>Measurement</b>	<input type="checkbox"/> Less than 65% of reported crashes occur during daylight  <input type="checkbox"/> Regression analysis of trend has a slope of >0%	<input type="checkbox"/> More than 65% of reported crashes occur during daylight  <input type="checkbox"/> Regression analysis of trend has a slope of >0%	<input type="checkbox"/> More than 65% of reported crashes occur during daylight  <input type="checkbox"/> Regression analysis of trend has a slope of ≤0%	<input type="checkbox"/> More than 65% of reported crashes occur during daylight  <input type="checkbox"/> Regression analysis of trend has a slope of <0%
<b>Score</b>	-0.5	1	2	3

**Measure 2.1.3**

**Network Safety Trend Report**

Contractors are required to submit the Network Safety Trend Report to Maintenance Contract Managers. The report should include all aspects set out in 5.5.3 of the Maintenance Specification.

**Process**

The report is provided quarterly to the Maintenance Contract Manager based on factual data.

**Data Required**

The Contractor will provide a self-assessment of the report in line with the minimum requirements in the 5.5.3 of the Maintenance Specification.

**Measure score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	Report fails to meet minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting	Report meets minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting	Report exceeds minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting. The report identifies at least 2 new safety opportunities from crash investigations or other means.	Report exceeds minimum requirements of 5.5.3 Network Safety Trend Monitoring and Reporting. The report identifies at least 2 new safety opportunities from crash investigations or other means. The report demonstrates Contractor led initiatives that have been implemented and improved safety.
<b>Measurement</b>	<input type="checkbox"/> Requirements <u>not met</u>	<input type="checkbox"/> Requirements <u>met</u>	<input type="checkbox"/> Requirements <u>met</u> <input type="checkbox"/> > 2 Safety <u>opportunity identified.</u>	<input type="checkbox"/> Requirements <u>met</u> <input type="checkbox"/> > 2 Safety <u>opportunity identified.</u> <input type="checkbox"/> ≥ 1 Safety <u>initiative implemented</u>
<b>Score</b>	-0.5	1	2	3



**KPI 2.1 Road User Safety Score**

Combination of the above 3 measures will be calculated to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is $\geq 3$	Overall measures score is $\geq 6$	Overall measures score is $\geq 9$

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## KRA 3 CUSTOMER

### KPI 3.1 Customer Engagement

#### Objective

To ensure customers' feedback has been logged in CRMS (or similar system), customers' feedback is always considered, customers' requests responded to and that customers' enquiries are handled in a timely manner and treated with empathy.

#### Measure 3.1.1

##### Customer and Stakeholder Management Plan

The purpose of the Customer and Stakeholder Management Plan is to capture the essential protocols and procedures for customer and stakeholder communications and interaction. The plan will establish clear lines of responsibility between the Principal and the Contractor regarding daily customer interaction. Suppliers will use CRMS to receive customer feedback. The supplier will respond in a timely and professional manner and trends or emerging risks that have been identified will be shared with the principal.

#### Process

The requirements of the Customer and Stakeholder Management Plan are covered in Section 4.5 of the Maintenance Specification. The Contractor will use customer feedback and insights to identify non-compliances against the plan and implement improvement opportunities.

#### Data Required

- Non-compliances discovered
- Number of repeat non-compliances
- Number of open non-compliances
- Actions taken to close non-compliances

#### Measure Score

	Level 1	Level 2	Level 3	Level 4
Description	- Activities not audited against plan or - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
Measurement	<input type="checkbox"/> Non-compliance >0	<input type="checkbox"/> Non-compliance >0	<input type="checkbox"/> Non-compliance ≤5	<input type="checkbox"/> Non-compliance ≤2

	Level 1	Level 2	Level 3	Level 4
	<input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance >0	<input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance =0	<input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required	<input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required
<b>Score</b>	-0.5	1	2	3

**Measure 3.1.2**

**Communication of the impact of events and incidents on customers**

Good communication means the impact of planned and unplanned events and incidents are provided to customers in a proactive and timely manner.

**Process**

The Principal and Contractor will review a randomly selected set of:

- Planned events loaded into appropriate system(s)
- Incident response and unplanned events (e.g. floods, snow, etc.) information and updates provided through appropriate system(s)
- Notices about road works and other planned events (e.g. sporting events) have been provided in a timely and customer-friendly manner in accordance with the various plans
- Feedback from key stakeholders and community groups demonstrating good levels of collaboration in responding to incidents and events

**Data Required**

RAMM CAR, TOC/TREIS outputs, information taken from CRMS.

**Measure score**

	Level 1	Level 2	Level 3	Level 4
<b>Measurement</b>	≤ 85%	> 85%	≥ 90%	≥95%
<b>Score</b>	-0.5	1	2	3

**Measure 3.1.3**

**Customer satisfaction survey**

The Principal will conduct an annual survey of the customer experience with the State Highway Network.

**Process**

The survey will be conducted annually and results will be mapped by respondents who provide postcodes within each of the NOC areas.

**Data Required**

Annual Customer Survey results and GIS mapping

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	Below Principal Standard	Meets Principal Standard	Exceeds Principal Standard	Top Performers of those that Principal Standard
<b>Measurement</b>	<input type="checkbox"/> < {TBC}	<input type="checkbox"/> ≥ {TBC} <input type="checkbox"/> < {TBC}	<input type="checkbox"/> ≥ {TBC}	<input type="checkbox"/> ≥ {TBC} <input type="checkbox"/> Top 10%
<b>Score</b>	-0.5	1	2	3

**KPI 3.1 Customer Engagement Score**

Combination of the above 3 measures will be calculated to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is ≥ 3	Overall measures score is ≥ 6	Overall measures score is ≥ 9

**KPI 3.2 Customer Responsiveness & Empathy**

**Objective**

To ensure customers’ feedback has been logged in CRMS, customers’ feedback is always considered, customers’ requests responded to and that customers’ enquiries are handled in a timely manner and treated with empathy.

**Measure 3.2.1**

**Ability to respond to customers**

This measure deals with the number of customer queries, complaints and correspondence responded to in a timely, professional and responsive manner.

**Process**

The Contractor will report on a monthly basis (to be assessed at the end of the reporting period) the customer interactions in CRMS that were due within the reporting period, the number of callback surveys completed showing that customer interactions were satisfactorily dealt with, together with the Contractor’s previous performance reports.

**Data Required**

Information taken from CRMS.

**Measure score**

Measure	Action	Scoring Methodology	Example	Total
Ability to respond to Customers	Number of customer complaints responded to in a timely, professional and responsive manner	If the number of customer complaints in CRMS assigned to the Contractor are responded to within 2 days x 1 (eg 2 complaints), LESS the number of customer complaints in CRMS assigned to the Contractor not responded to within 2 days x 5 (eg 1 complaint)	$2 \times 1 - 1 \times 5 = -3$	If $\geq 0$ , 1 point, if $< 0$ , 0 points. Therefore $-3 = 0$ point
Ability to respond to Customers	Number of customer queries, and correspondence responded to in a timely, professional and responsive manner	If the number of customer interactions in CRMS assigned to the Contractor are responded to within 10 days x 1 (eg 50 interactions), LESS the number of customer interactions in CRM assigned to the Contractor not responded to within 10 days x 5 (eg 5 interactions)	$50 \times 1 - (5 \times 5) = 25$	If $\geq 0$ , 1 point, if $< 0$ , 0 points. Therefore 25 = 1 point
Ability to respond to Customers	Number of customer queries, complaints and correspondence responded to in a timely, professional and responsive manner	If the number of customer interactions in CRMS assigned to the Contractor are resolved x 1 (eg 15 resolutions), LESS the number of customer interactions in CRMS assigned to the Contractor unresolved x 10 (eg 2 unresolved)	$15 \times 1 - (2 \times 10) = -5$	If $\geq 0$ , then 1 point, if $< 0$ then 0 Therefore $-5 = 0$ points



Measure	Action	Scoring Methodology	Example	Total
Ability to respond to Customers	Callback surveys completed for a sample of closed customer interactions?	Yes = 1 No = 0		
	This measure $\geq 3$ for at least the last 4 months?	Yes = 1 No = 0		

Combination of the above 5 measures will be calculated to give an overall KPI score for each reporting period.

	Level 1	Level 2	Level 3	Level 4
Measure Score	Overall measures score < 2	Overall measures score is $\geq 2$	Overall measures score is $\geq 4$	Overall measures score is $\geq 5$
Score	-0.5	1	2	3

***KPI 3.2 Customer Responsiveness & Empathy Score***

The above measure will be used to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is 1	Overall measures score is 2	Overall measures score is 3

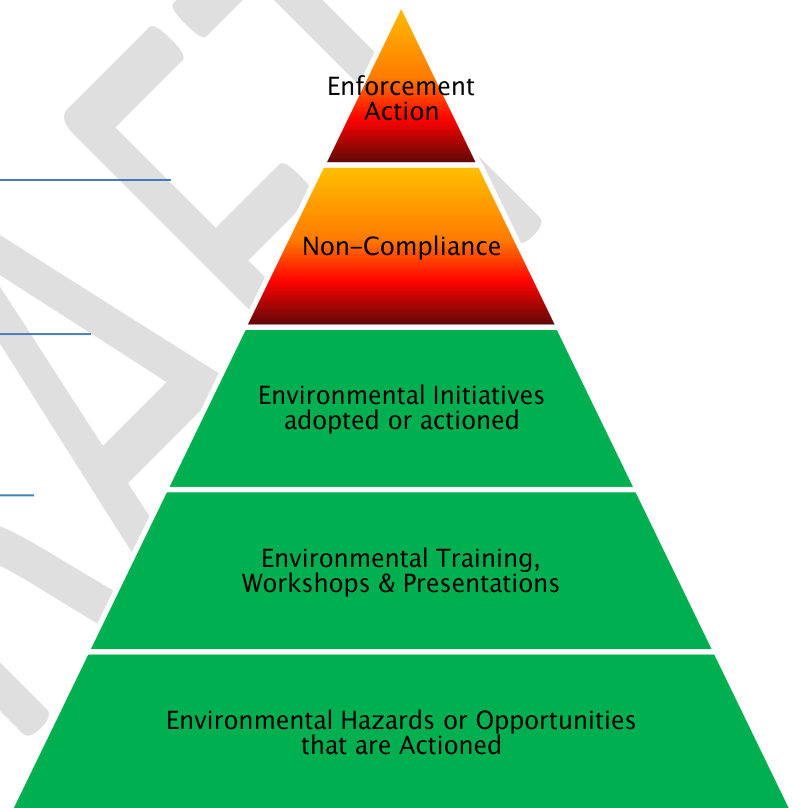
## KRA 4 SUSTAINABILITY

### KPI 4.1 Environment

#### OBJECTIVE

Environmental sustainability will be measured through the impact of our works, our ability to meet our commitments and the actions we take to improve how we work. The environmental triangle is a combination of several of the elements measured to give an overall score. It has both positive and negative elements combined. The aggregated triangle formula represents the environmental score. Within the overall score is the opportunity to recognise positive performance as represented in the triangle and an incentive to minimise negative performance.

Calc	Event	Score
-20	#	-20x#
-10	##	-10x (##)
+20	#	(20x#)
+1	#	1x#
+0.5	#	0.5x#



#### Measures 4.1.1

##### Enforcement Action

The number of enforcement orders (s314) and abatement notices (s322) from the Resource Management Act 1991.

##### Process

The number of enforcement orders and abatement notices will be captured monthly by the contractor in Regulator reports. The total number reported each 4-month period.

**Impact**

- 20 points per enforcement order and/or abatement notice

**Data Required**

The number of orders and notices.

**Measure 4.1.2**

**Regulatory Non Compliance**

The number of regulatory monitoring non-compliances (excludes regulators minor non-compliances).

**Process**

Copies of regulators monitoring reports will be provided monthly and will be scored on a 4 month period for the total number reported.

**Impact**

- 10 points per non-compliance within regulator's monitoring reports.

**Data Required**

Number of non-compliances.

**Measure 4.1.3**

**CS-VUE Non Compliance**

The number of non-compliances in CS-VUE.

**Process**

A snap shot of the compliance table from CS-VUE for the contract area will be provided aligned with the 4 monthly reporting.

**Impact**

- 10 points per CS-VUE non-compliance.

**Data Required**

The number of non-compliances.

**Measure 4.1.4**

**Environmental Initiatives that are adopted or actioned**

Initiatives that meet the Principal's environmental plan objectives, and are over and above meeting legal compliance.

**Process**

A summary of the initiative template is to be prepared. Initiatives are to be assessed and agreed at a 4-monthly regional gathering of environmental managers and the

Principal. Final decision will rest with the Principal's Environmental Urban Design Team representative.

**Impact**

+ 20 points per initiatives that are assessed and agreed.

**Data Required**

Number of initiatives

**Measure 4.1.5****Environmental Training, Workshops and Presentations**

The number of formal environmental related training workshops and presentations held. This does not include toolbox or tailgate activities.

**Process**

The Contractor will provide the number of annual FTE's together with the number of training courses undertaken and attended by contracting staff (including sub contractors).

**Impact**

+1 point per FTE per course attended.

**Data Required**

The number of courses and attending FTEs.

**Measure 4.1.6****Environmental hazards or opportunities that are actioned**

Number of environmental hazards and/or opportunities reported on a 4 monthly basis.

**Process**

Recorded in the environmental hazards and opportunities register, together with the number of annual FTE's and the name of the FTE who reported the opportunity or hazard and the type of opportunity or hazard reported.

**Impact**

+ 0.5 points per near miss reported and multiplied by the number of different FTE's reporting hazards or opportunities.

**Data Required**

Number of near misses and names of submitter.

**Score**

Measure	Calculation
Enforcement Action	# x (20)
Regulatory Non Compliance	# x (10)
CS VUE Non-Compliance	#x(10)
Environmental Initiatives	#x20
Training Workshops and Presentations	#FTE x # training courses x 1
Hazards or Opportunities	# of different FTEs x # near misses reported x 0.5
Overall Environmental Triangle Score	Sum of above

The above calculation will be used to give an overall measure score for each reporting period.

	Level 1	Level 2	Level 3	Level 4
Measure Score	Overall environmental triangle score < 0	Overall environmental triangle score 0 ≤ 10	Overall environmental triangle score ≤ 10 to < 20	Overall environmental triangle score ≥ to 20
Score	-0.5	1	2	3

**Measure 4.1.7**

**Environmental and Social Management Plan**

**Process**

The requirements of the Environmental and Social Management Plan are covered in Section 4.4 of the Maintenance Specification.

**Data Required**



- Non-compliances discovered
- Number of repeat non-compliances
- Number of open non-compliances
- Actions taken to close non-compliances

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	- Activities not audited against plan <i>or</i> - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
<b>Measurement</b>	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance >0	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance =0	<input type="checkbox"/> Non-compliance ≤5 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required	<input type="checkbox"/> Non-compliance ≤2 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required
<b>Score</b>	-0.5	1	2	3

**KPI 4.1 Environment Score**

Combination of the above 2 measures being (4.1.1 to 4.1.6) and 4.1.7 will be calculated to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is ≥ 2	Overall measures score is ≥ 4	Overall measures score is ≥ 6

**KPI 4.2 SUSTAINABLE MARKET**

**Measure 4.2.1**

**Healthy Market Pledges**

**Process**

The Principal and Contractor will agree a schedule of tender pledges made in their submission. The Contractor must deliver on all tender pledges they have made. The Contractor will demonstrate that promises made during tendering add value and are delivered.

**Data Required**

The Contractor will provide an updated schedule for the completion of all services delivered within the Network Outcomes Contract in their monthly and quarterly reports. The contract manager will confirm the delivery.

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	Healthy Market Pledges not delivered	Healthy Market Pledges delivered	Contractor delivers over and above their healthy market pledge and value for money opportunities are identified	Contractor delivers over and above their healthy market pledge and value for money opportunities are identified and implemented
<b>Measurement</b>	<input type="checkbox"/> Not delivered	<input type="checkbox"/> Delivered	<input type="checkbox"/> Delivered <input type="checkbox"/> Identified ≥ 4 value for money opportunities	<input type="checkbox"/> Delivered <input type="checkbox"/> Identified ≥ 4 value for money opportunities <input type="checkbox"/> 3 implemented
<b>Score</b>	-0.5	1	2	3

**KPI 4.2 Sustainable Market Score**

The above measure will be used to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is 1	Overall measures score is 2	Overall measures score is 3

## KRA 5 ASSURANCE AND VALUE

### KPI 5.1 Quality

#### Measure 5.1.1

##### Quality Management Plan

##### Purpose

- The requirements of the Quality Management Plan are covered in Section 4.2 of the Maintenance Specification
- The Quality Management Plan measures the value, effectiveness, review and improvement of the Quality Management Plan process
- Any quality issues are acknowledged, logged into an issues register as part of the Plan, a response put in place, change in process are made to the Quality Management Plan.
- The Quality Management Plan will be used to control activities, report all tasks finished, confirm high quality information and cover the entire scope and activity of work completed by the Contractor.
- Data Quality is included in the Quality Management Plan

##### Data Required

- Non-compliances discovered
- Number of repeat non-compliances
- Number of open non-compliances
- Actions taken to close non-compliances

##### Measure Scores

	Level 1	Level 2	Level 3	Level 4
Description	- Activities not audited against plan or - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
Measurement	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0	<input type="checkbox"/> Non-compliance ≤5 <input type="checkbox"/> Repeat non-compliance =0	<input type="checkbox"/> Non-compliance ≤2 <input type="checkbox"/> Repeat non-compliance =0

	Level 1	Level 2	Level 3	Level 4
	<input type="checkbox"/> Open non-compliance >0	<input type="checkbox"/> Open non-compliance =0	<input type="checkbox"/> No changes to plan required	<input type="checkbox"/> No changes to plan required
<b>Score</b>	-0.5	1	2	3

### KPI 5.1 Quality Score

The above measure will be used to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is 1	Overall measures score is 2	Overall measures score is 3

### KPI 5.2: Value for Money

#### Measure 5.2.1

#### Maintenance Management Plan

#### Process

- The requirements of the Maintenance Management Plan are covered in Section 4.8 of the Maintenance Specification
- The Maintenance Management Plan measures the value, effectiveness, review and improvement of the Maintenance Management Plan process
- The Contractor's maintenance strategy for all asset classes across the network is documented, reviewed and updated in the Maintenance Management Plan.

#### Data Required

- Non-compliances discovered
- Number of repeat non-compliances
- Number of open non-compliances
- Actions taken to close non-compliances

#### Measure Score

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	- Activities not audited against plan <i>or</i>	- Activities audited against plan. - Non-compliances recorded	- Activities audited against plan - ≤5 non-compliances	- Activities audited against plan - ≤2 non-compliances

	Level 1	Level 2	Level 3	Level 4
	- Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	recorded - 0 repeat non-compliances	recorded - 0 repeat non-compliances
<b>Measurement</b>	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance >0	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance =0	<input type="checkbox"/> Non-compliance ≤5 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required	<input type="checkbox"/> Non-compliance ≤2 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required
<b>Score</b>	-0.5	1	2	3

**KPI 5.2: Value for Money Score**

The above measure will be used to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is 1	Overall measures score is 2	Overall measures score is 3

**KPI 5.3: Innovation**

**Objective**

The Contractor demonstrates innovation to encourage value for money.

**Measure 5.3.1**

**Innovation**

Number of value for money innovation submissions resulting in demonstrable mutual benefits.

**Process**

Innovations and the projected improvements are identified in reporting period.

- All innovations, from whatever source, will be documented in an Innovation Register, maintained by the Contractor and submitted by the Contract Manager.



- Innovation encourages value for money and results in demonstrable mutual benefits. This KPI is intended to encourage an on-going attitude that activities can be done better.
- Innovation is defined as a feature of a system, operation or built work that gives better performance at the same cost or same performance at less cost.

**Data Required**

Ideas submitted to Contract Manager

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	No new common practices have been introduced.	New common practices have been introduced.	New common practices have been introduced and 2 new proprietary practices.	New common practices have been introduced and >2 other contracts are using propriety practices.
<b>Measurement</b>	<input type="checkbox"/> New common practices introduced =0	<input type="checkbox"/> New common practices introduced ≥1	<input type="checkbox"/> New common practices introduced ≥1 <input type="checkbox"/> New proprietary practices introduced > 2	<input type="checkbox"/> New common practices introduced ≥1 <input type="checkbox"/> New proprietary practices introduced ≥ 2 <input type="checkbox"/> Other contracts using proprietary practice > 2
<b>Score</b>	-0.5	1	2	3

**KPI 5.3: Innovation Score**

The above measure will be used to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 0	Overall measures score is 1	Overall measures score is 2	Overall measures score is 3

## KRA 6 NETWORK PERFORMANCE

### KPI 6.1 Service Delivery

#### Objective

- Ensure the physical indicators of service quality have been provided
- Demonstrate that promises made during tendering add value and are delivered
- Schedule works to minimise disruption and give customers timely and accurate information so that can make informed choices

#### Measure 6.1.1

#### Overall OPM Score

#### Process

Analysis of the monthly OPM performance evaluation, refer to Section 2.3.4 Maintenance Specification, Table 2.3.2 OPM Monthly Evaluation Weightings.

#### Data Required

Outputs from Operational Performance Measures reporting.

#### Measure Score

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	2 or more financial penalties or 1 100% penalty in the 4 month period.	1 financial penalty in the 4 month period.	No financial penalty in the 4 month period.	No financial penalty for last 12 months and no non-compliances within key OPMs and Safety related OPMs
<b>Measurement</b>	<input type="checkbox"/> Financial penalty $\geq 2$ OR 100% Financial penalty $> 1$	<input type="checkbox"/> Financial penalty = 1	<input type="checkbox"/> Financial penalty = 0	<input type="checkbox"/> Financial penalty (12 Months) = 0 <input type="checkbox"/> No non-compliances within key OPMs <input type="checkbox"/> No non-compliances within safety OPMs
<b>Score</b>	-0.5	1	2	3

**Measure 6.1.2****Compliance with the contractor's monthly programme of work Process**

The Contractor will put forward their annual programme of work and report their actual achievements against forecast. The requirement to provide the work plan.

**Data Required**

The contractor to supply programme of work as part of monthly report.

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
Description	Contractor completes <90% of work planned in the 4-month period with no acceptable mitigating circumstances.	Contractor completes >90% of work planned in the 4-month period (or provides acceptable mitigating circumstances for work not complete).	Contractor completes >90% of work planned in the last 2 KRA periods (or provides acceptable mitigating circumstances for work not complete).	Contractor completes >90% of work planned in the last 3 KRA without good reason (or provides acceptable mitigating circumstances for work not complete).
Measurement	<90%	≥ 90% (1 KRA Period)	≥ 90% (2 KRA Periods)	≥90% (3 KRA Periods)
Score	-0.5	1	2	3

**Measure 6.1.3****Network Performance tender pledges are delivered****Process**

The Principal and Contractor will agree a schedule of tender pledges made in their submission. The Contractor must deliver on all tender pledges they have made. The Contractor will demonstrate that promises made during tendering add value and are delivered.

**Data Required**

The Contractor will provide an updated schedule for the completion of all services delivered within the Network Outcomes Contract in their monthly and quarterly reports. The contract manager will confirm the delivery.

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	Tender Pledge is not delivered	Tender Pledge is delivered	Contractor delivers over and above their tender pledge and value for money opportunities are identified	Contractor delivers over and above their tender pledge and value for money opportunities are identified and implemented
<b>Measurement</b>	<input type="checkbox"/> Not delivered	<input type="checkbox"/> Delivered	<input type="checkbox"/> Delivered <input type="checkbox"/> Identified ≥ 4 value for money opportunities	<input type="checkbox"/> Delivered <input type="checkbox"/> Identified ≥ 4 value for money opportunities <input type="checkbox"/> 3 implemented
<b>Score</b>	-0.5	1	2	3

**KPI 6.1 Service Delivery Score**

Combination of the above 3 measures will be calculated to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score is < 3	Overall measures score is ≥ 3	Overall measures score is ≥ 6	Overall measures score is ≥ 8

**KPI 6.2 NETWORK AVABILITY**

**Objective**

- Ensure the physical indicators of service quality have been provided
- Demonstrate that promises made during tendering add value and are delivered
- Schedule works to minimise disruption and give customers timely and accurate information so that can make informed choices

**Measure 6.2.1**

**Maximum number of occurrences per month in planned events where actual disruption is greater than predicted**

**Process**

The Contractor will report the planned events for the month. The Contractor will perform a self-audit every reporting period to assess actual disruptions compared to plan. The Principal may also audit results to validate results of the self-audit.

**Data Required**

Audit results of disruption events and plans.

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	>20% of audits show actual disruption is greater than predicted	≤20% of audits show actual disruption is greater than predicted	≤5% of audits show actual disruption is greater than predicted	≤1% of audits show actual disruption is greater than predicted
<b>Measurement</b>	<input type="checkbox"/> Audited <input type="checkbox"/> >20% of audits show actual disruption greater than predicted	<input type="checkbox"/> Audited <input type="checkbox"/> ≤20% of audits show actual disruption is greater than predicted	<input type="checkbox"/> Audited <input type="checkbox"/> ≤5% of audits show actual disruption is greater than predicted	<input type="checkbox"/> Audited <input type="checkbox"/> ≤1% of audits show actual disruption is greater than predicted
<b>Score</b>	-0.5	1	2	3

**Measure 6.2.2**

**Emergency Procedures Preparedness Plan**

The Emergency Procedures and Preparedness Plan defines the roles, practices and procedures in preparation for and during an incident response event.

**Process**

The Contractor must prove compliance with the Plan, update and show learnings. The Plan is covered in section 4.7 of Maintenance Specification. The Contractor is responsible for ensuring all components of the plan are identified, reviewed and implemented. The Contractor will undertake proactive action to ensure response will be as expected. Consultation with stakeholders will be undertaken to assess the effectiveness of emergency procedures and preparedness.



**Data Required**

- Non-compliances discovered
- Number of repeat non-compliances
- Number of open non-compliances
- Actions taken to close non-compliances

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	- Activities not audited against plan <i>or</i> - Activities audited against plan - Non-compliances recorded - No action taken to close non-compliances or take corrective action	- Activities audited against plan. - Non-compliances recorded - Repeat non-compliances recorded - All non-compliances closed with corrective actions taken	- Activities audited against plan - ≤5 non-compliances recorded - 0 repeat non-compliances	- Activities audited against plan - ≤2 non-compliances recorded - 0 repeat non-compliances
<b>Measurement</b>	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance >0	<input type="checkbox"/> Non-compliance >0 <input type="checkbox"/> Repeat non-compliance >0 <input type="checkbox"/> Open non-compliance =0	<input type="checkbox"/> Non-compliance ≤5 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required	<input type="checkbox"/> Non-compliance ≤2 <input type="checkbox"/> Repeat non-compliance =0 <input type="checkbox"/> No changes to plan required
<b>Score</b>	-0.5	1	2	3

**Measure 6.2.3**

**Actions taken to reduce adverse impacts on traffic flow, or to mitigate the impacts of abnormal traffic flow**

**Process**

The Contractor will look to minimise abnormal traffic flow by engaging with the community and stakeholders. The Contractor will identify events that may have adverse impacts on traffic flow and look for opportunities to mitigate these. Event plans and network management activities will be actioned to improve the impact of traffic flow compared to similar events.

**Data Required**

Proof of engagement, opportunities identified, proof of implementation.

**Measure Score**

	Level 1	Level 2	Level 3	Level 4
<b>Description</b>	No engagement to identify events that have adverse impacts on traffic flow	Engagement to identify events that have adverse impacts on traffic flow	Opportunities to mitigate the impact of abnormal traffic flow are identified	Opportunities to mitigate the impact of abnormal traffic flow are implemented
<b>Measurement</b>	<input type="checkbox"/> No engagement	<input type="checkbox"/> Engagement <input type="checkbox"/> Events identified	<input type="checkbox"/> Engagement <input type="checkbox"/> Events identified <input type="checkbox"/> Opportunities for mitigation of abnormal traffic flows identified	<input type="checkbox"/> Engagement <input type="checkbox"/> Events identified <input type="checkbox"/> Opportunities for mitigation of abnormal traffic flows implemented <input type="checkbox"/> No record of abnormal traffic flow during planned events
<b>Score</b>	-0.5	1	2	3

**KPI 6.2 Network Availability Score**

Combination of the above 3 measures will be calculated to give an overall KPI score for each reporting period.

Poor	MCOS	Best Practice	Outstanding
Overall measures score < 3	Overall measures score is $\geq 3$	Overall measures score is $\geq 6$	Overall measures score is $\geq 8$

## KRA 7 HEALTH OF THE RELATIONSHIP

### KPI 7.1 Relationship

#### Objective

The Principal intends to establish a working relationship with the contractor that fosters open and honest dialogue and feedback, including greater involvement of Sub-contractors and recognition of their value.

#### Measure 7.1.1

##### Demonstration of contract measured in the relationship survey

The Contract Management Board shall monitor the health of the relationship between all participating parties (and Sub-contractors) within the context of this contract and its collaboration opportunities. This will be carried out by a formal review of the results of a six-monthly Network Outcomes Contract Relationship Survey, undertaken by the Principal.

#### Process

TBD

#### Impact

TBD

#### Data Required

Outputs from survey

#### Measure 7.1.2

##### Integrity and compliance of KRA system

The Principal's audits of the KRA system demonstrate integrity and compliance.

#### Process

The Principal will undertake an audit of the KRA system annually. The KRA system will continue to be fit for purpose. Any problems identified with the system are resolved in a timely manner and opportunities for improvement are identified and implemented.

#### Data Required

Audit of KRA system to confirm that it is fit for purpose and logically correct.

**Measure Score**

	<b>Unsatisfactory</b>	<b>Satisfactory</b>
Demonstration of contract measured in the relationship survey	<ul style="list-style-type: none"> <li><input type="checkbox"/> Survey completed by Principal</li> <li><input type="checkbox"/> Survey completed by Contractor</li> <li><input type="checkbox"/> Unsatisfactory Result by one or both of the participants</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Survey completed by Principal</li> <li><input type="checkbox"/> Survey completed by Contractor</li> <li><input type="checkbox"/> Satisfactory Result for both of the participants</li> </ul>
Validation of the sustainable market	<ul style="list-style-type: none"> <li><input type="checkbox"/> Survey completed by Sub-contractor</li> <li><input type="checkbox"/> Unsatisfactory Result</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Survey completed by Sub-contractor</li> <li><input type="checkbox"/> Satisfactory Result</li> </ul>
Integrity and compliance of KRA system	<ul style="list-style-type: none"> <li><input type="checkbox"/> Audit not undertaken</li> <li><input type="checkbox"/> Problems identified not resolved within 20 working days</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Audit undertaken</li> <li><input type="checkbox"/> Problems identified resolved within 20 working days</li> <li><input type="checkbox"/> Opportunities for improvement identified and implemented</li> </ul>

**KPI 7.1 Relationship Score**

<b>Poor</b>	<b>MCOS</b>	<b>Best Practice</b>	<b>Outstanding</b>
Overall measures score < 2	Overall measures score is ≥ 2	Overall measures score is ≥ 4	Overall measures score is ≥ 5

## 2.1.13 Scoring

There are seven KRAs that will be reported on: however, only six KRAs will be used in the assessment for tenure or financial reward. The seventh KRA, culture (health of the relationship), is used as an enabler to assess how well the parties to the contract are interacting and working together.

Each KRA is broken down into one or more KPIs, which are specifically assigned to one KRA only; the KPIs are used to determine a KRA score.

Each KRA is made up of one or more KPI's that demonstrate the Contractor's level of performance achievement for that specific KPI. The measures will be evaluated against agreed condition criteria such as the Contractor's own records, network data, asset condition measures, customer responses or stakeholder survey results. The Contractor must develop a mechanism for recording and reporting their achievement of each stated measure that can withstand Principal or independent scrutiny. Each KPI will be one of the following:

- Individual KPI Measure that has a clear quantitative range to categorise the performance level.
- A qualitative KPI Measure that has been clearly described, with behaviours and quantifiable actions that are supported by the provision of back-up information that meets the defined criteria for standards of performance.
- Aggregation of a number of measures that then add up to a clear quantitative range to categorise the performance level.

Once a KPI performance level has been derived, it is assigned a normalised score as detailed in Table 2.1.3.

Each individual KPI can have a different weight assigned in relation to other KPIs within a specific KRA, depending on its importance or focus.

A KRA score is derived from the individual KPI normalised score multiplied by its weighting, then added together with any other KPI normalised scores (and corresponding weightings) for that KRA and then the sum of all the KPIs is averaged.

The assigned performance level for a KRA will be based on where the resulting KRA score falls within the score range stated in the Measure Scoring Table 2.1.3. Once a KRA performance level has been identified, it will then be assigned the normalised score.

Reporting to the CB should detail the KRA performance level, the KRA normalised score and corresponding KPI normalised scores. These will be reported on every four months.

Once a year, an annual overall performance KRA score for the contract is to be developed. The outcome of the overall performance KRA score will confirm what level of entitlement and reward the Contractor has earned for the year, as stated in the Measure Scoring Table 2.1.3. Note the Contractor can earn both additional tenure and financial reward; however, the additional tenure is limited to a maximum term as set out in the Conditions of Contract.



Each individual KRA can have a different weight assigned in relation to other KRAs depending on its importance or focus.

The annual overall performance KRA score is derived from all the KRA results for the year.

Each annual individual KRA score is firstly derived from the average of that KRA's normalised score as reported on every four months for the year (that is the average of 3 normalised scores for the year). Once an annual individual KRA score has been derived, it is then categorised according to the score range in Table 2.1.3, and assigned a performance level and the corresponding normalised score.

The annual overall performance KRA score is derived from the annual individual KRA normalised score multiplied by its weighting, then added together with the other KRA normalised scores (and weightings); finally the sum of all the KRAs are averaged.

The derived annual overall performance KRA score is then categorised according to the score range in Table 2.1.3 and assigned a performance level. It is this final performance level which will confirm the level of entitlement and reward the Contractor has earned.

An example of a KRA calculation score is represented below.

**TABLE 2.1.3: MEASURE SCORING TABLE**

SCORE RANGE	NORMALISED SCORE	PERFORMANCE LEVEL	OUTCOME
$\geq 3$	3.6	Outstanding	100% of KRA Financial Reward plus Tenure
$2 < \text{and} < 3$	2.6	Best Practice	50% of KRA Financial Reward plus Tenure
$1.45 < \text{and} \leq 2$	1	Minimum Condition of Satisfaction	Additional Tenure
$\leq 1.45$	0	Poor	Loss of Tenure

The Principal and Contractor may provide additional information in their four monthly CB performance report on extenuating circumstances which may have affected the Contractor's ability to achieve a higher performance level. Additional information in no way allows the performance level to be changed.

**TABLE 2.1.4: PERFORMANCE LEVELS AND DESCRIPTIONS**

<b>Level of Performance</b>	<b>Description of Performance</b>
Poor	Significant performance failures and serious gaps in service delivery
Minimum condition of satisfaction	An adequate standard of performance with improvement required
Best practice	Results reflecting consistent performance achievement underpinned by constructive behaviours that enhance the relationship and deliver innovative solutions for both parties
Outstanding	The Contractor is exceeding the Principal's expectation of performance and has consistently delivered results at a level not previously achieved.

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### 2.1.14 Example Calculation of KRA Score

There are 6 Key Result Areas (KRAs). Each KRA is evaluated on a four-monthly period. The KRAs' performance levels are averaged over the year. The annual overall performance level determines the contract's outcome, for example additional tenure and financial reward.

#### KPI

Each Key Performance Indicator (KPI) can have more than one measure. In this example, all measures have equal weighting.

KPI 1	Measure
	Measure

#### KRA

Each KRA can have more than one KPI. The KRA performance level is dependent on the relevant KPIs' performance levels. In this example, KRA 1 has three relevant KPIs (KPI 1, KPI 2 and KPI 3). The KPI performance level has been pre-determined for this example, also all KPIs have equal weighting (1).

KRA 1	KPI 1	Performance Level	Best Practice	Normalised Score (see Appendices, Table 2.1.3)	2.6	
		KPI 2	Poor		0	
		KPI 3	Best Practice		2.6	
	Average				$[(2.6*1)+(0*1)+(2.6*1)] / 3$	= 1.73
	Range (see table 2.1.3 in Ap)				1.1 < and < 2	
	Performance Level				MCoS	

The annual performance score for KRA 1 is derived from the three assessments for the year (i.e. every four months).

KRA 1	Month 1 - 4		Month 5 - 8		Month 9 - 12		Annual Average Score
	Performance Level	Normalised Score	Performance Level	Normalised Score	Performance Level	Normalised Score	
MCoS		1	Best Practice	2.6	Outstanding	3.6	$(1+2.6+3.6) / 3$
							2.40

### Annual overall performance score

The annual overall performance score, derived from all the annualised KRA scores determines the outcome for the year. In this example, all KRAs have equal weighting (1).

	Annual Average Score	Range (see table 2.1.3 in Ap)	Annual Average	Normalised Score
KRA 1	2.40	2 < and < 3	Best Practice	2.6
KRA 2	1.15	1.25 < and < 2	MCoS	0
KRA 3	1.73	1.25 < and < 2	MCoS	1
KRA 4	3.10	≥ 3	Outstanding	3.6
KRA 5	2.40	2 < and < 3	Best Practice	2.6
KRA 6				
Average Performance score (all KRAs)				$(2.6 + 0 + 1 + 3.6 + 2.6) / 5$ = 1.96
Range (see Appendices, Table 2.1.3)				1.25 < and < 2
Annual Overall Performance Level				MCoS
Annual overall outcome				Additional Tenure

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## 2.2 OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM SAMPLE SIZES AND AUDIT FREQUENCIES							Reporting Interval											
OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Management	3.8.1	1	Key Reporting	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.2.1	2	Annual Plan	ALL	100%	Annually			<input checked="" type="checkbox"/>									
Management	5.2.2	3	RAPT Review Alignment	ALL	100%	Annually									<input checked="" type="checkbox"/>			
Management	5.3.1	4	Incident Response Management	NSHVT, NSH	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.1	5	Incident Response Management	RSH, RCH, RDH	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.1	6	Incident Response Management	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.2	7	TMP Approvals	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.3	8	TMP Audits Completed	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.3	9	TMP Audits Dangerous	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.4	10	CAR processing	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.5	11	Consented Activity Monitoring	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval											
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Management	5.3.6	12	Consent Infringement	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.3.7	13	Geological Threat Monitoring	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	5.5.1	14	SCRIM Investigation Report	ALL	100%	Annually										<input checked="" type="checkbox"/>		
Management	5.5.1	15	SCRIM Site Work Completed Report	ALL	100%	Annually												<input checked="" type="checkbox"/>
Management	5.6.1	16	Financial Management – July Forecast	ALL	100%	Annually												<input checked="" type="checkbox"/>
Management	5.6.1	17	Financial Management – Feb Forecast	ALL	100%	Annually												<input checked="" type="checkbox"/>
Construction Quality	6.1.1	18	All Delineation / Service Cover Reinstatement	NSHVH	10% completed works	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Construction Quality	6.1.1	19	All Delineation / Service Cover Reinstatement	NSH, RSH, RCH, RDH	10% completed works	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.2	20	Surface Bumps	NSHVH, NSH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval												
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	6.1.2	21	Surface Bumps	RSH, RCH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.2	22	Surface Bumps	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.2	23	Surface Bumps	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.3	24	Potholes	NSHVH M/E	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.3	25	Potholes	NSHVH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.3	26	Potholes	NSH, RSH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.3	27	Potholes	RCH, RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.4	28	Deformations, Heaves, Shoves	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.4	29	Ponding	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.1.5	30	Rutting	NSHVH, NSH	100%	Bi-Annually				<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>			
Asset Condition	6.1.5	31	Rutting	RSH	100%	Bi-Annually				<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>			
Asset Condition	6.1.5	32	Rutting	RCH, RDH	100%	Bi-Annually				<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>			

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval											
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Asset Condition	6.1.6	33	Flushing	ALL	100%	Bi-Annually				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	
Asset Condition	6.1.7	34	Edge Break into EL	ALL	10%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.1.7	35	Continuous 200mm Edge break	NSHVH ; NSH, RSH	10%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.1.7	36	Continuous 200mm Edge break	RCH, RDH	10%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.1.8	37	Less than 500m low shoulder	ALL	10%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.1.8	38	Less than 100m low shoulder	ALL	10%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.1.8	39	100mm low shoulder	ALL	10%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Construction Quality	6.1.9	40	General Maintenance: Rework Occurrence	NSHVH M/E	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Construction Quality	6.1.9	41	General Maintenance: Rework Occurrence	NSHVH ; NSH, RSH, RCH, RDH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>



### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval												
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	6.2.4	52	1 defect per section	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.2.4	53	>50% blockage	NSHVH, NSH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.2.4	54	>50% blockage	RSH, RCH, RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.2.5	55	No outlet flow	ALL	100%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Asset Condition	6.2.5	56	Blocked channel, water on road	ALL	100%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Asset Condition	6.2.5	57	>50% blockage	ALL	100%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Asset Condition	6.3.1	58	Structure - Graffiti	ALL	100%	Annually			<input checked="" type="checkbox"/>										
Asset Condition	6.3.1	59	Structure - Drainage	ALL	100%	Annually			<input checked="" type="checkbox"/>										
Asset Condition	6.3.1	60	Joint debris	ALL	100%	Annually			<input checked="" type="checkbox"/>										
Asset Condition	6.3.1	61	>20% waterway obstruction	ALL	100%	Annually			<input checked="" type="checkbox"/>										
Asset Condition	6.3.2	62	Barrier Integrity	ALL	100%	Annually	<input checked="" type="checkbox"/>												



### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval												
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	6.3.2	63	Handrail integrity	ALL	100%	Annually	<input checked="" type="checkbox"/>												
Asset Condition	6.3.3	64	Structurally damaged barrier	NSHVH	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.3.3	65	Structurally damaged barrier	NSH, RSH	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.3.3	66	Structurally damaged barrier	RCH, RDH	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	6.3.3	67	Structurally damaged handrail	ALL	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Management	6.4.1	68	Ice / Snow / CMA Decision Records	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Management	6.4.2	69	Ice/Snow – 30 minutes mobilisation	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Management	6.4.2	70	Inappropriate / Insufficient Plant	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Management	6.4.3	71	Inappropriate decisions	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Management	6.4.3	72	CMA Consent compliance	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval											
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Management	6.4.4	73	Snow-Clearing Response Services Requirements compliance	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	6.4.5	74	Event Reporting	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.6	75	Type 1	ALL	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	76	Type 2	ALL	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	77	Type 3B	NSHVH, NSH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	78	Type 3B	RSH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	79	Type 3B	RCH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	80	Type 3B	RDH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	81	Type 5	ALL	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	82	Type 7	NSHVH, NSH, RSH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

## OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval											
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Asset Condition	6.4.6	83	Type 7	RCH, RDH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	83	Type 8	ALL	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	84	Self-sown trees	ALL	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.6	85	Dead limbs	ALL	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.7	86	Type 3A	NSHVH, NSH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.7	87	Type 3A	RSH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.7	88	Type 3A	RCH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.7	89	Type 3A	RDH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.7	90	Type 4A	AH	10%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Management	6.4.8	91	Type 6 - Abatement notice	ALL	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.9	92	Litter	NSHVH M/E	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval												
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	6.4.9	93	Litter	NSHVH, NSH, RSH, RCH, RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.10	94	>500-grams detritus	NSHVH M/E	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.10	95	>500-grams detritus	NSHVH, NSH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.10	96	>500-grams detritus	RSH, RCH, RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.11	97	Rest Area/Facility pothole	NSHVH, NSH, RSH	100%	Bi-Annually						<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>
Asset Condition	6.4.11	98	Rest Area/Facility pothole	RCH, RDH	100%	Bi-Annually						<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>
Asset Condition	6.4.11	99	Facility maintenance plan compliance	ALL	100%	Bi-Annually						<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>
Asset Condition	6.4.12	100	Equipment damaged	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.12	101	Overflowing rubbish bins	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval												
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	6.4.12	102	Visible litter in area	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.4.13	103	Urban Graffiti in view of road user / pedestrian	NSHVH, NSH	100%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.4.13	104	Urban Graffiti in view of road user/pedestrian	RSH, RCH, RDH	100%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	6.5.1	105	Missing Regulatory	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.5.1	106	Missing Non-Regulatory	NSHVH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.5.1	107	Missing Non-Regulatory	NSH, RSH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.5.1	108	Missing Non-Regulatory	RCH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.5.1	109	Missing Non-Regulatory	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	6.5.1	110	Graffiti visible from 50m	ALL	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition – Night	6.5.2	111	Night Time signs visibility	ALL	100%	Bi-Annually				<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>			



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							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	6.5.3	112	Re-torque of 1/3rd Frangible base assets	ALL	100%	Annually							<input checked="" type="checkbox"/>						
Asset Condition – Night	6.5.4	113	160m visibility	ALL	100%	Bi-Annually				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Asset Condition – Night	6.5.4	114	Consecutive missing	ALL	100%	Bi-Annually				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Asset Condition – Night	6.5.5	115	EMP visibility	ALL	100%	Bi-Annually				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Asset Condition – Night	6.5.5	116	EMP visibility 2 consecutive	ALL	100%	Bi-Annually				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Asset Condition	6.5.6	117	Culvert Marker missing	ALL	10%	Bi-Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Asset Condition	6.5.7	118	LRMS – missing delineation	ALL	100%	Annually			<input checked="" type="checkbox"/>										
Asset Condition	6.5.7	119	Missing kilometre post	ALL	100%	Annually			<input checked="" type="checkbox"/>										
Asset Condition	6.5.7	120	2 or more missing kilometre post	ALL	100%	Annually			<input checked="" type="checkbox"/>										
Construction Quality	6.5.8	121	NZTA P/22 Faults	ALL	100%	Bi-Annually					<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	

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							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE				
Construction Quality	6.5.8	122	Fault correction response time	ALL	100%	Bi-Annually		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>							
Asset Condition - Night	6.5.9	123	Lights	NSHVH, NSH	100%	Qtrly	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					
Asset Condition - Night	6.5.9	124	Lights	RSH, RCH, RDH	100%	Qtrly	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					
Asset Condition - Night	6.5.9	125	Lights	ALL	100%	Qtrly	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					
Asset Condition	6.5.10	126	Re-torque of 1/3rd Slip base assets	ALL	100%	Annually							<input checked="" type="checkbox"/>									
Management	6.6.1	127	Incident Response within 1 hour	NSHVH, NSH, RSH	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Management	6.6.1	128	Incident Response within 2 hours	RCH, RDH	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.1	129	Corrugations > 25mm	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.1	130	Corrugations > 50mm	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Asset Condition - Unsealed	7.3.1	131	Loose aggregate >50mm deep	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.1	132	Loose aggregate >100mm deep	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.1	133	Bald spot >10m <sup>2</sup>	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.1	134	Bald spot >50m <sup>2</sup>	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.2	135	Potholes > 250mm diameter, 50mm deep	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.2	136	Pothole > 400mm deep	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.3	137	Heave or shove >50mm	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.3	138	Heave or shove >100mm	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM GROUP	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	Reporting Interval													
							JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE		
Asset Condition - Unsealed	7.3.4	139	Continuous shallow channel <300mm deep	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.4	140	Very shallow channels <100mm deep	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.4	141	Water ponding	RDH	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition - Unsealed	7.3.5	142	Defect within 1st year of treatment	RDH	100% Renewals	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>MONTHLY TOTALS</b>							<b>82</b>	<b>88</b>	<b>84</b>	<b>100</b>	<b>71</b>	<b>83</b>	<b>75</b>	<b>81</b>	<b>75</b>	<b>100</b>	<b>82</b>	<b>93</b>		

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL														
						JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE			
Safety	1	Key Reporting	All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL											
						IULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Asset Condition	19		PCol, SCol, Acc, AcclV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	20		All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	21	Flushing (Sealed Roads)	All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	22		NatHV(M&E), NatHV, Nat, Reg	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	23	Edge Break (Sealed Roads)	Art, PCol, SCol	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	24		Acc, AcclV	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Safety	25		All Roads	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	26	Shoulder Maintenance (Sealed Roads)	All Roads	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	27		All Roads	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	28		All Roads	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Customer Facing	29	Repair Quality (Sealed Roads)	All Roads	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Customer Facing	30		All Roads	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Customer Facing	31		NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	32	Reinstatement of Sites after any Completed Works	All Roads (except NatHV(M&E))	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	33		All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL												
						JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	46		PCol, SCol, Acc, AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	47		NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	48		NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	49	Reported Lane Flooding	NatHV(M&E)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	50	Vulnerable and High Value Flooding Areas	All Roads	100%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Asset Condition	51		All Roads	100%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Asset Condition	52	Bridge and Other Structures Maintenance	NatHV(M&E)	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	53		NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Asset Condition	54		All Roads	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Safety	55	Barrier, End Treatment and Rail Damage Repairs	NatHV(M&E), NatHV	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Safety	56		Nat, Reg	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Safety	57		Art, PCol, SCol, Acc, AccLV	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

**OPM SAMPLE SIZES AND AUDIT FREQUENCIES**

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL											
						IULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Safety	58		All Roads	100%	Bi-Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Safety	59	Frost, Ice Gritting and Snow Clearance - Mobilise and Establish On Site	All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	60		All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	61		All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	62	Snow Clearing - Response	All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	63	Vegetation Control - General	All Roads	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	64		All Roads	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	65		NatHV(M&E), NatHV, Nat	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	66		Reg	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	67		Art, PCol, SCol, Acc, AccLV	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	68		NatHV(M&E)	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	69		All Roads (except NatHV(M&E))	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL											
						JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Customer Facing	70		All Roads	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	71		All Roads	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	72		NatHV(M&E)	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Asset Condition	73		All Roads (except NatHV(M&E))	10%	2 Monthly		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Customer Facing	74	Litter Collection	NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	75		All Roads (except NatHV(M&E))	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	76		NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	77		All Roads (except NatHV(M&E))	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	78	Detritus	NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	79		NatHV, Nat	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	80		Reg, Art, PCol, SCol	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	81		Acc, AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	82	Rest Area, Heavy Commercial Vehicle Facility	NatHV(M&E), NatHV, Nat, Reg	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



**OPM SAMPLE SIZES AND AUDIT FREQUENCIES**

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL												
						JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Customer Facing	83	and Formed Stopping Area Maintenance	Art, PCol, SCol, Acc, AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	84		NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	85		All Roads (except NatHV(M&E))	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	86		All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	87		NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	88		All Roads (except NatHV(M&E))	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	89		All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	90		Graffiti Removal	NatHV(M&E)	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	91			NatHV, Nat, Reg, Art, PCol, SCol, Acc, AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	92	Signs	All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	93		All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	94		All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	95		All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	96	Frangible Signs	All Roads	100%	Annually							<input checked="" type="checkbox"/>						

**OPM SAMPLE SIZES AND AUDIT FREQUENCIES**

OPM TYPE	O P M	NAME	ROAD CLASS	AU DI T SI ZE	FREQU ENCY	REPORTING INTERVAL												
						IULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Customer Facing	97	Raised Pavement Markers	All Roads	100%	6 Monthly				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Safety	98		All Roads	100%	6 Monthly at night				<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Asset Condition	99	Raised Pavement Markers	All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	100	Edge Marker Posts	All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	101	Edge Marker Posts	All Roads	100%	6 Monthly at night				<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>			
Asset Condition	102	Culvert Marker Posts	NatHV(M&E)	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Asset Condition	103		All Roads (except NatHV(M&E))	10%	2 Monthly	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Asset Condition	104	Transport Agency P/22 Pavement Marking - Lines, Text, Symbols, etc.	All Roads	100%	Bi-Annually					<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	
Safety	105	Carriageway Lighting	All Roads	100%	Quarterly at night	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
Asset Condition	106		NatHV(M&E)	100%	Quarterly at night	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
Asset Condition	107		NatHV, Nat	100%	Quarterly at night	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL											
						JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Asset Condition	108		Reg, Art, PCol, SCol, Acc, AcclV	100%	Quarterly at night	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Asset Condition	109		NatHV(M&E)	100%	Quarterly at night	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Asset Condition	110		All Roads (except NatHV(M&E))	100%	Quarterly at night	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Asset Condition	111		NatHV(M&E)	100%	Quarterly at night	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Asset Condition	112	Carriageway Light Slip Bases	All Roads	100%	Annually							<input checked="" type="checkbox"/>					
Customer Facing	113	Incident Response Management	NatHV(M&E)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	114		NatHV, Nat, Reg, Art	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	115		PCol, SCol, Acc, AcclV	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	116		NatHV(M&E)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	117		All Roads (Not NatHV(M&E))	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	118		All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL											
						IULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Safety	119	Sealed Route Surface Bumps	Favoured Motorcycle Routes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	120		Shoulders on Designated Cycle Routes and all Cycle Lanes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	121		Cycle Paths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	122	Sealed Route Potholes	High Risk and Favoured Motorcycle Routes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	123		Shoulders on Designated Cycle Routes and all Cycle Lanes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	124		Footpaths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	125		Cycle Paths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	126		Sealed Route Deformations, Heaves and Shoves	High Risk and Favoured Motorcycle Routes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL												
						JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Safety	127		Shoulders on Designated Cycle Routes and all Cycle Lanes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	128		Footpaths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	129		Cycle Paths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	130	Sealed Route Edge Breaks	High Risk and Favoured Motorcycle Routes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	131		Shoulders on Designated Cycle Routes and all Cycle Lanes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety	132		Cycle Paths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	133	Sealed Route Shoulder Maintenance	Cycle Lanes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	134		Shoulders on Designated Cycle Routes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	135		Cycle Paths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	136	Unsealed Route Surface Bumps	Cycle Paths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	137		Footpaths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



**OPM SAMPLE SIZES AND AUDIT FREQUENCIES**

OPM TYPE	O P M	NAME	ROAD CLASS	AU DI T SI ZE	FREQU ENCY	REPORTING INTERVAL													
						IULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE		
Customer Facing	138	Unsealed Route Potholes	Cycle Paths	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Customer Facing	139	Unsealed Route Deformations, Heaves and Shoves	Footpaths (unsealed)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Customer Facing	140	Route Vegetation Control	All Routes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Safety	141	Route Litter and Detritus Removal	High Risk and Favoured Motorcycle Routes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Safety	142		Shoulders on Designated Cycle Routes and all Cycle Lanes	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	143		Footpaths (sealed)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	144		Footpaths (unsealed)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	145		Cycle Paths (sealed)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	146		Cycle Paths (unsealed)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### OPM SAMPLE SIZES AND AUDIT FREQUENCIES

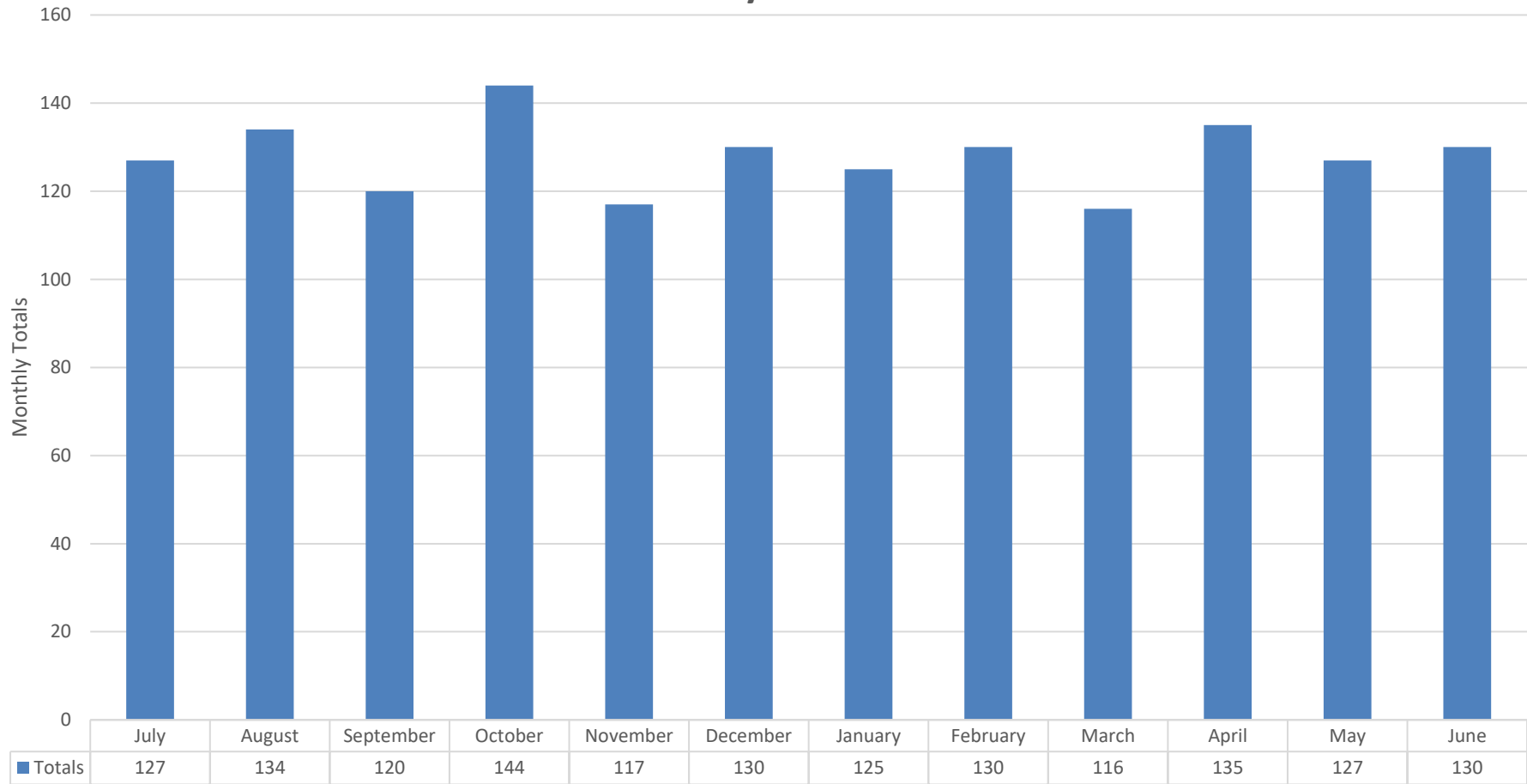
OPM TYPE	OPM	NAME	ROAD CLASS	AUDIT SIZE	FREQUENCY	REPORTING INTERVAL														
						IULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE			
Customer Facing	147	Potholes (Unsealed Roads)	PCol, SCol	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Customer Facing	148		Acc	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Customer Facing	149		AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Customer Facing	150	Corrugations (Unsealed Roads)	PCol, SCol, Acc	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Customer Facing	151		AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Safety	152	Loose Metal (Unsealed Roads)	PCol, SCol, Acc, AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Safety	153	Deformations, Heaves and Shoves (Unsealed Roads)	All Roads	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Asset Condition	154	Drainage (Unsealed Roads)	PCol, SCol	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Asset Condition	155		Acc	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Asset Condition	156		AccLV	10%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Customer Facing	157	Incident Response	All Roads (within defined enhanced response area)	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Customer Facing	158			100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	159			100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Facing	160	Traffic Congestion Management	All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

**OPM SAMPLE SIZES AND AUDIT FREQUENCIES**

OPM TYPE	O P M	NAME	ROAD CLASS	AU DI T SI ZE	FREQU ENCY	REPORTING INTERVAL												
						IULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	
Asset Condition	161	Tunnel Cleaning	All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Asset Condition	162		All Roads	100%	Monthly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>MONTHLY TOTALS</b>						<b>127</b>	<b>134</b>	<b>120</b>	<b>144</b>	<b>117</b>	<b>130</b>	<b>125</b>	<b>130</b>	<b>116</b>	<b>135</b>	<b>127</b>	<b>130</b>	

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### OPM Monthly Distribution



## 2.3 VISUAL AUDIT GUIDELINE

<<Include Visual Audit Guideline>>

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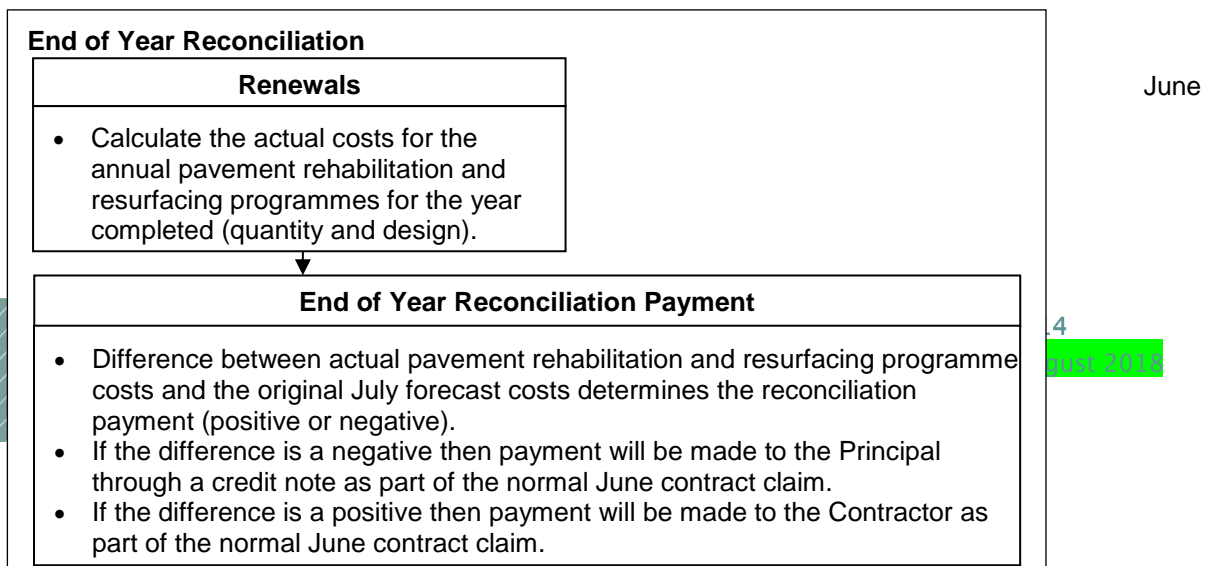
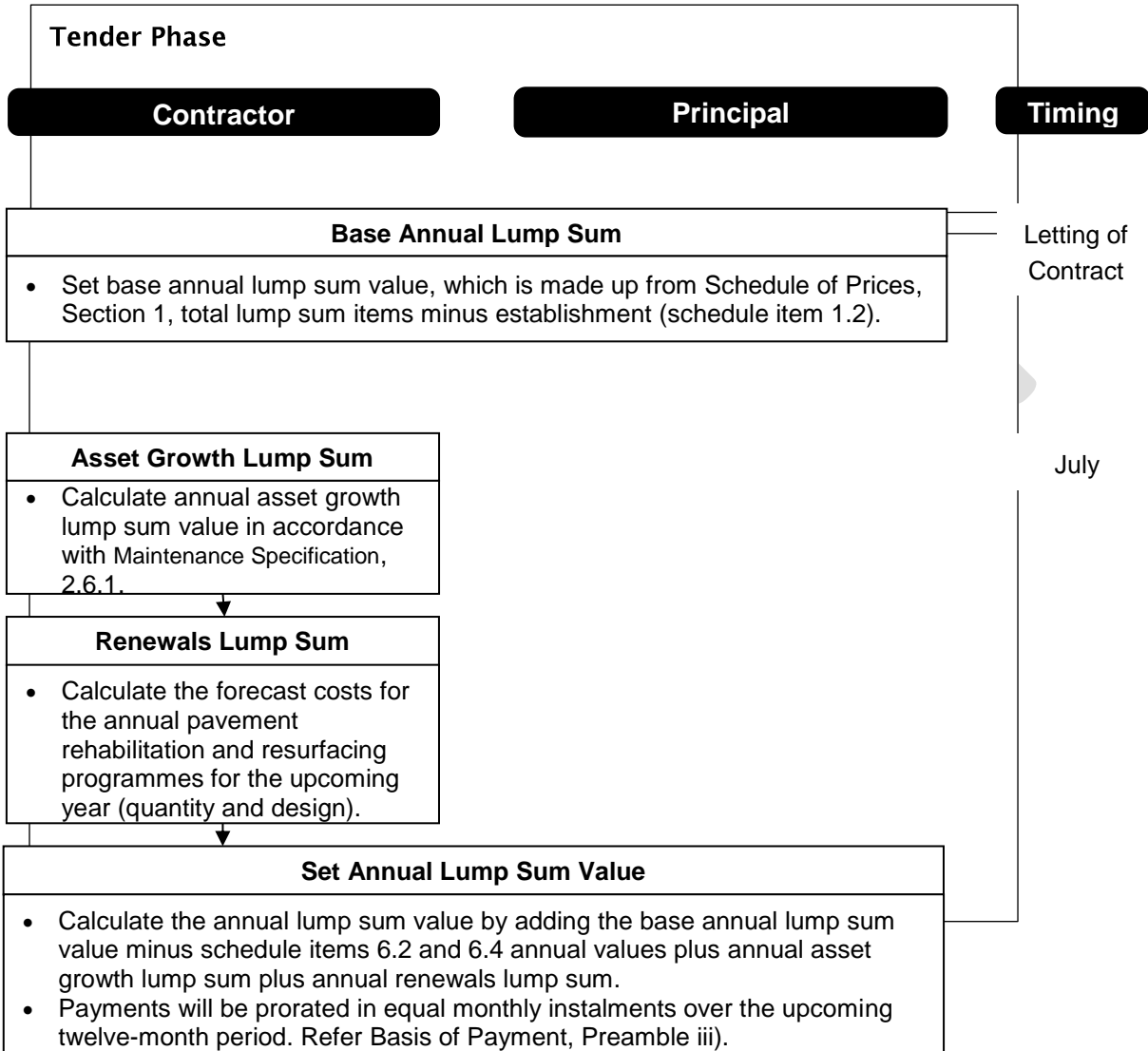
## 2.4 PROCESS MAPS

The following Process Maps have been developed to assist the Contractor in better understanding the various processes required within this contract.

**TABLE 2.4: PROCESS MAPS**

APPLICABLE REFERENCE	DESCRIPTION
Basis of Payment, Preamble	Annual Lump Sum Calculation and End of Year Reconciliation
Maintenance Specification, 1.5	Customer Service
Maintenance Specification, 2.3.3/3.6.1	Defect Intervention Options
Maintenance Specification, 2.4/6.1.2/6.1.3	Renewal Quantity Management Reward
Maintenance Specification, 2.4.4/5.2.5 /6.1.2	Management of Annual 3-yearly NLTP Pavement Rehabilitation Quantity
Maintenance Specification, 2.4.4/5.2.2 /6.1.3	FWP Development
Maintenance Specification, 2.4.4/5.2.4	Annual Renewals Programme Development
Maintenance Specification, 5.8	Road Safety Management
Maintenance Specification, 2.5.4/5.2.5	Management of Annual Resurfacing Quantity
Maintenance Specification, 5.3.1/5.3.2 /6.1.2/6.1.3	Annual Renewals Design and Construct

<b>Annual Lump Sum Calculation and End of Year Reconciliation</b>			<b>Process Map</b>
<b>Specification Section</b>	N/A	<b>Clause Reference</b>	Basis of Payment, Preamble

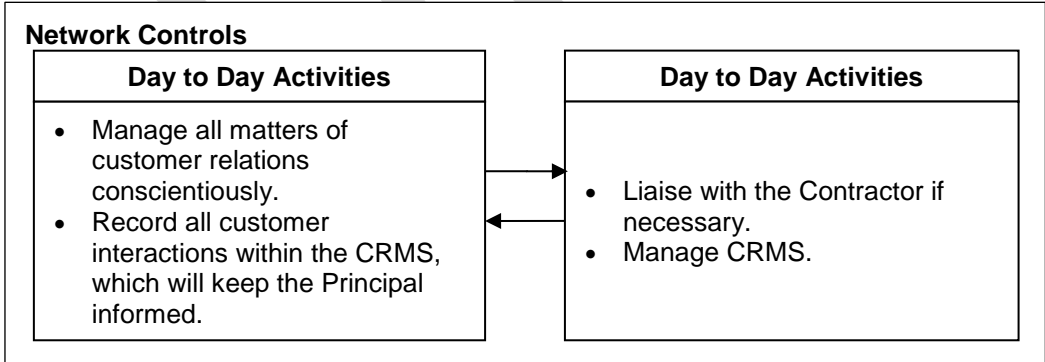
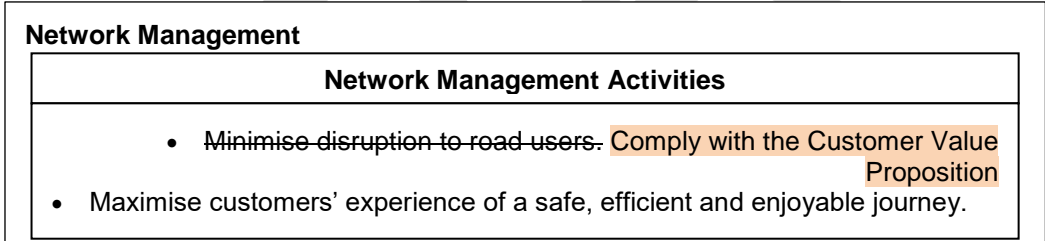
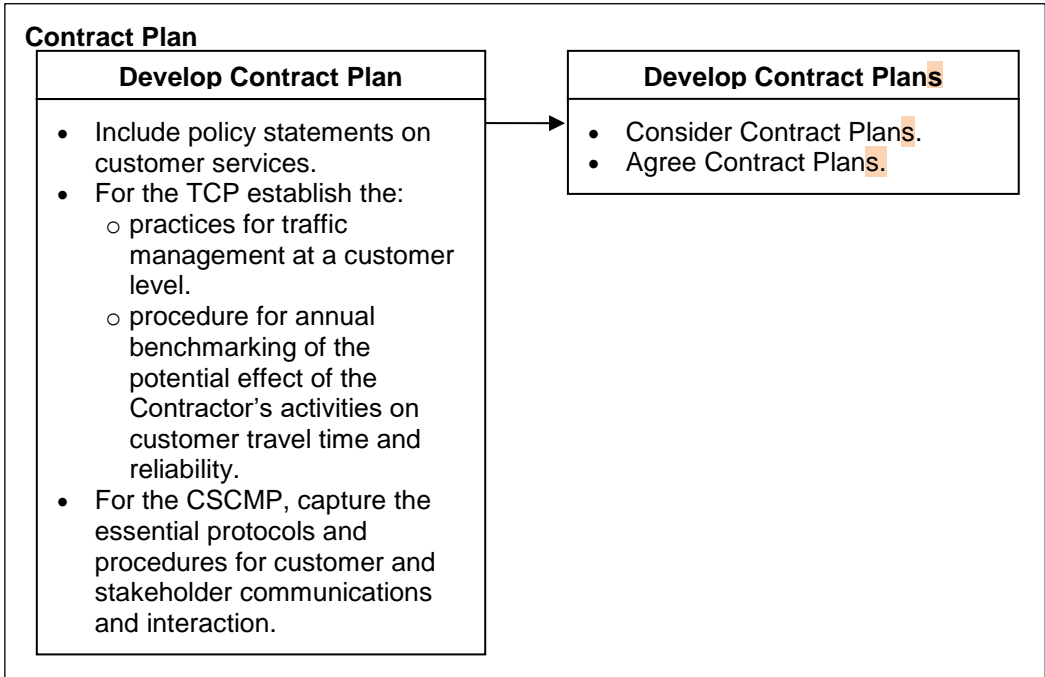


Customer Service			Process Map
Specification Section	2.0 Value Management Proposition	Clause Reference	2.0

**Contractor**

**Principal**

**Timing**

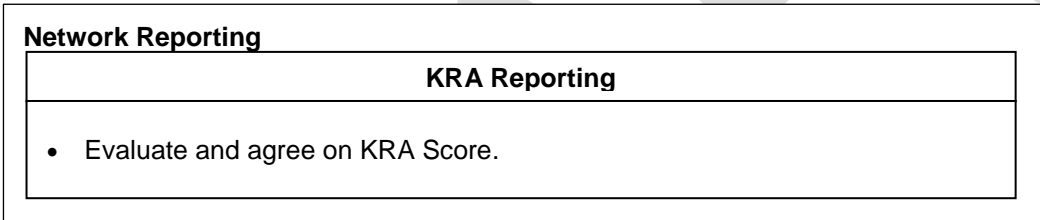
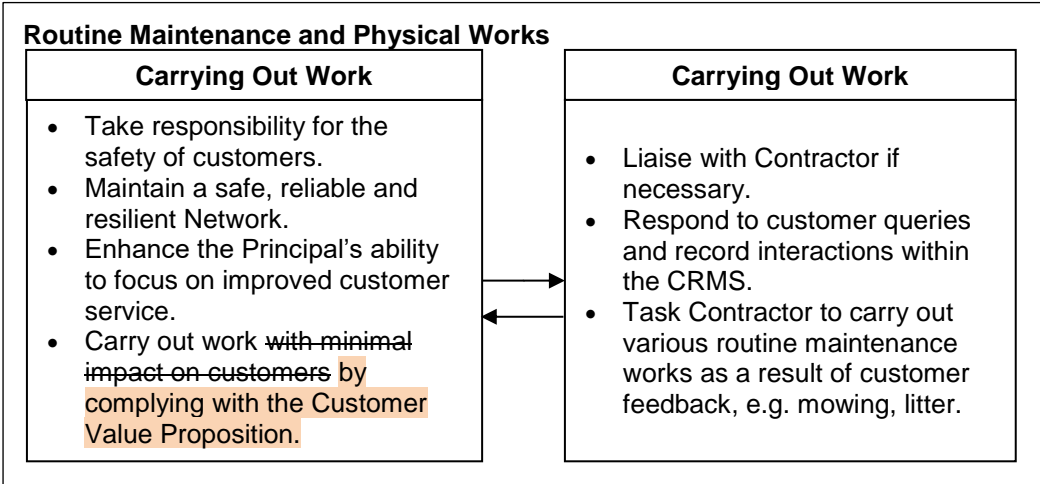


Customer Service			Process Map
Specification Section	2.0 Value Management Proposition	Clause Reference	2.0

**Contractor**

**Principal**

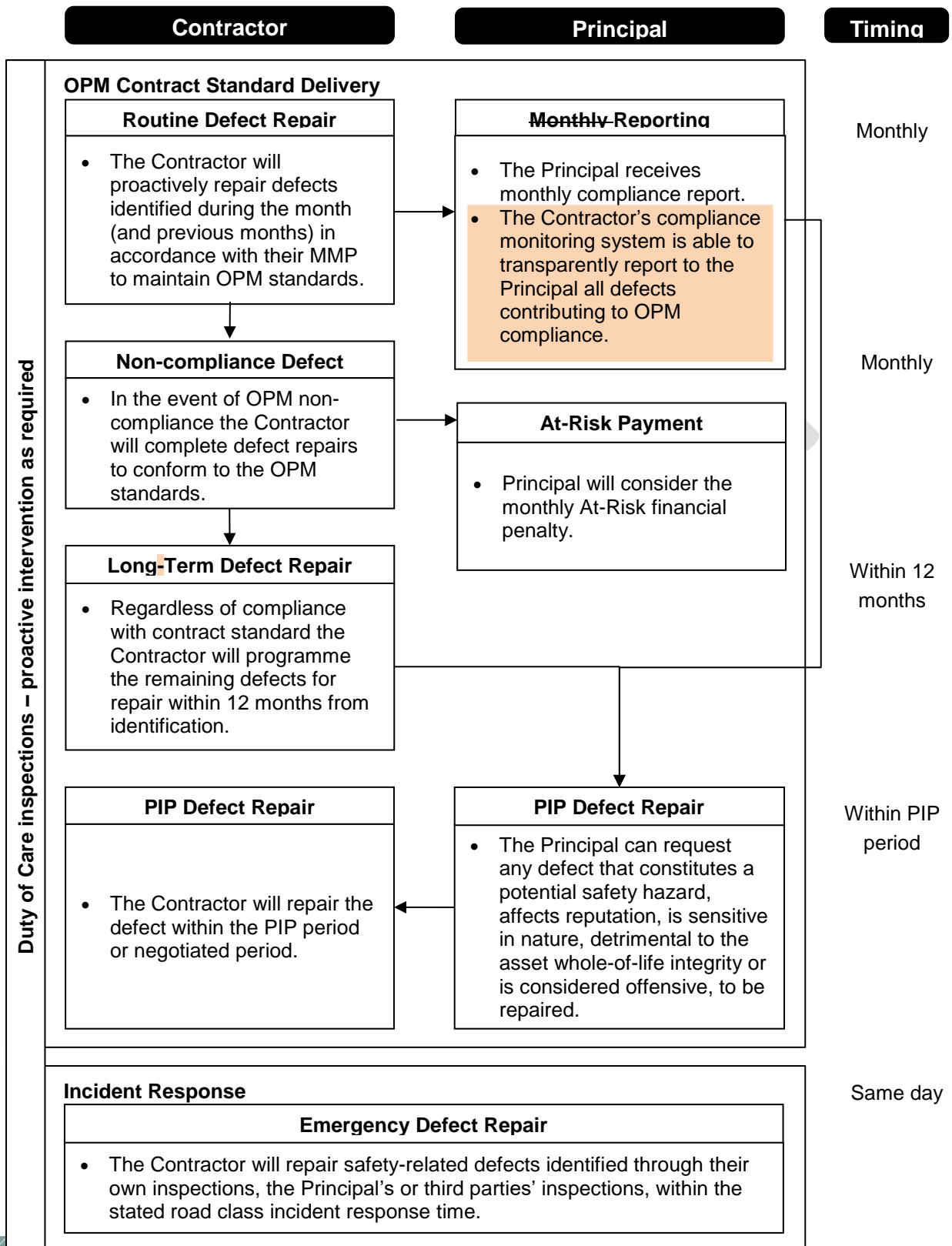
**Timing**



# Defect Intervention Options

## Process Map

<b>Specification Section</b>	2.0 Value Management Proposition	<b>Clause Reference</b>	2.3.3 / 3.6.1
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# Defect Intervention Options

Process Map

Specification Section

2.0 Value Management Proposition

Clause Reference

2.3.3 / 3.6.1

**Contractor**

**Principal**

**Timing**

Duty of Care inspections – proactive intervention as required

## Unscheduled Works

### Unscheduled Works Defect

- The Contractor will repair the defect within the scope and response time as agreed.

### Unscheduled Works Defect

- The Principal engages the Contractor to repair defects, e.g. vibration-related, using unscheduled works where the works are risk-excluded.

As agreed

<b>Renewal Quantity Management Reward</b>			<b>Process Map</b>
<b>Specification Section</b>	2.0 Value Management Proposition	<b>Clause Reference</b>	2.4/6.1.2/6.1.3

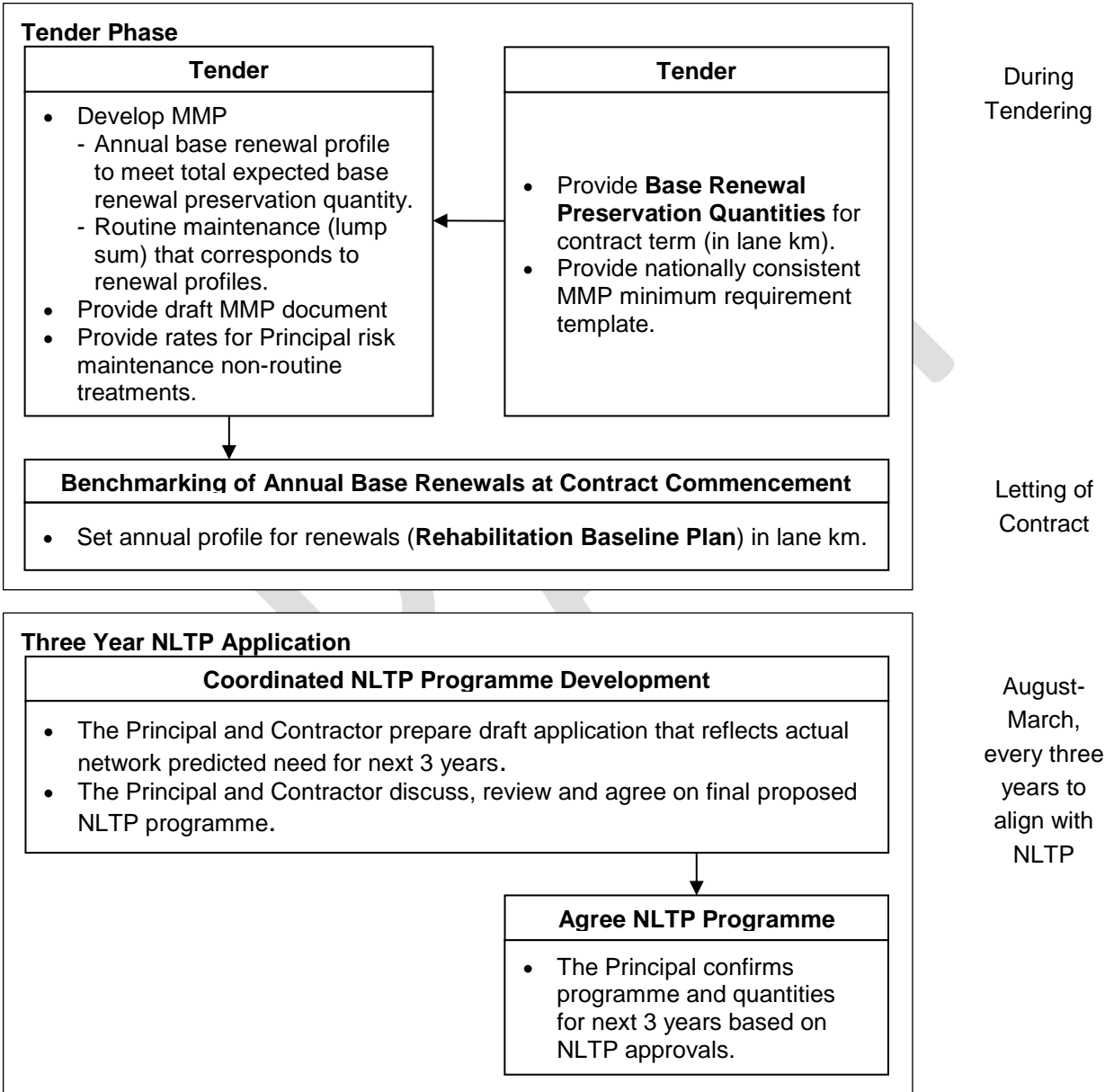
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<b>Management of Annual 3-yearly NLTP Rehabilitation Quantity</b>			<b>Process Map</b>
<b>Specification Section</b>	56.0 Physical Works Network Management	<b>Clause Reference</b>	2.5.4/6.1.2 2.4.4 / 5.2.5

**Contractor**

**Principal**

**Timing**



# Management of Annual 3-Yearly NLTP Rehabilitation Quantity

## Process Map

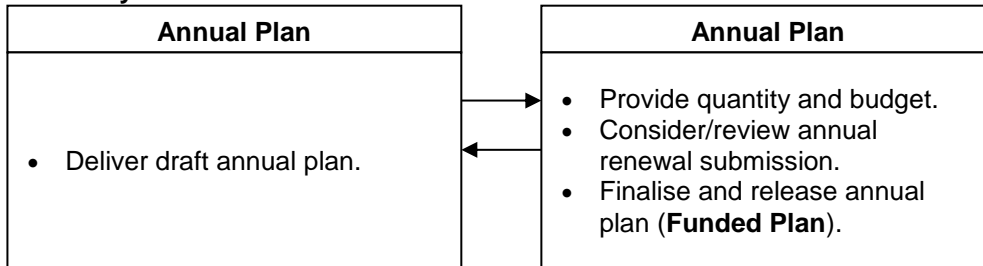
Specification Section	6.0 Physical 5.0 Network Management Works	Clause Reference	2.5.4/6.1.2 2.4.4 / 5.2.5
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### Contractor

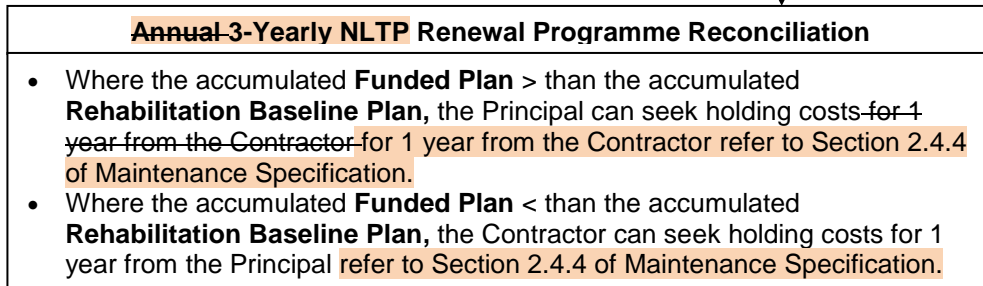
### Principal

### Timing

#### Annual Cycle



September-  
July



On release  
of Funded  
Plan

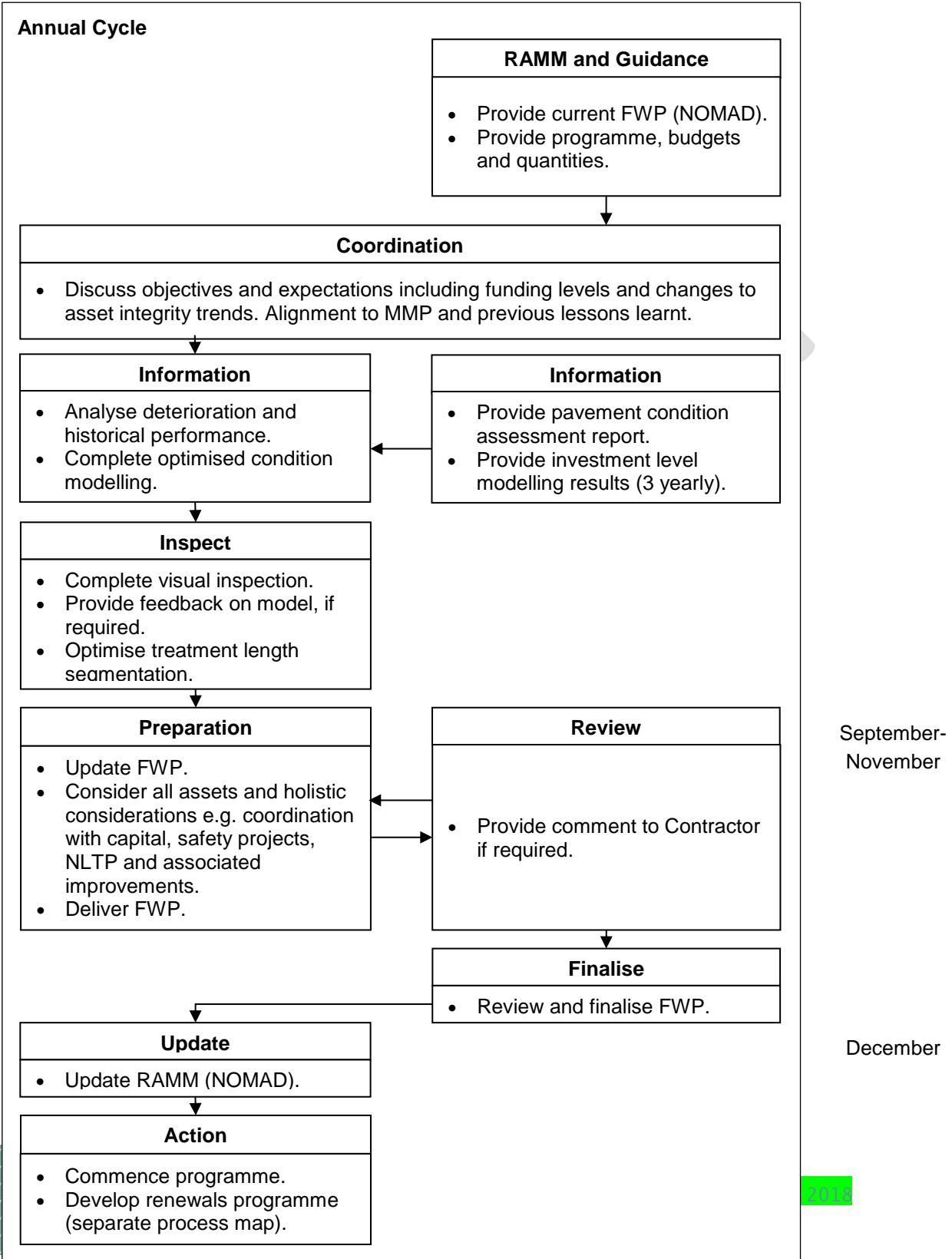


FWP Development			Process Map
Specification Section	5.0 Network Management	Clause Reference	5.2.26-1.3 2.4.4 / 5.2.2

**Contractor**

**Principal**

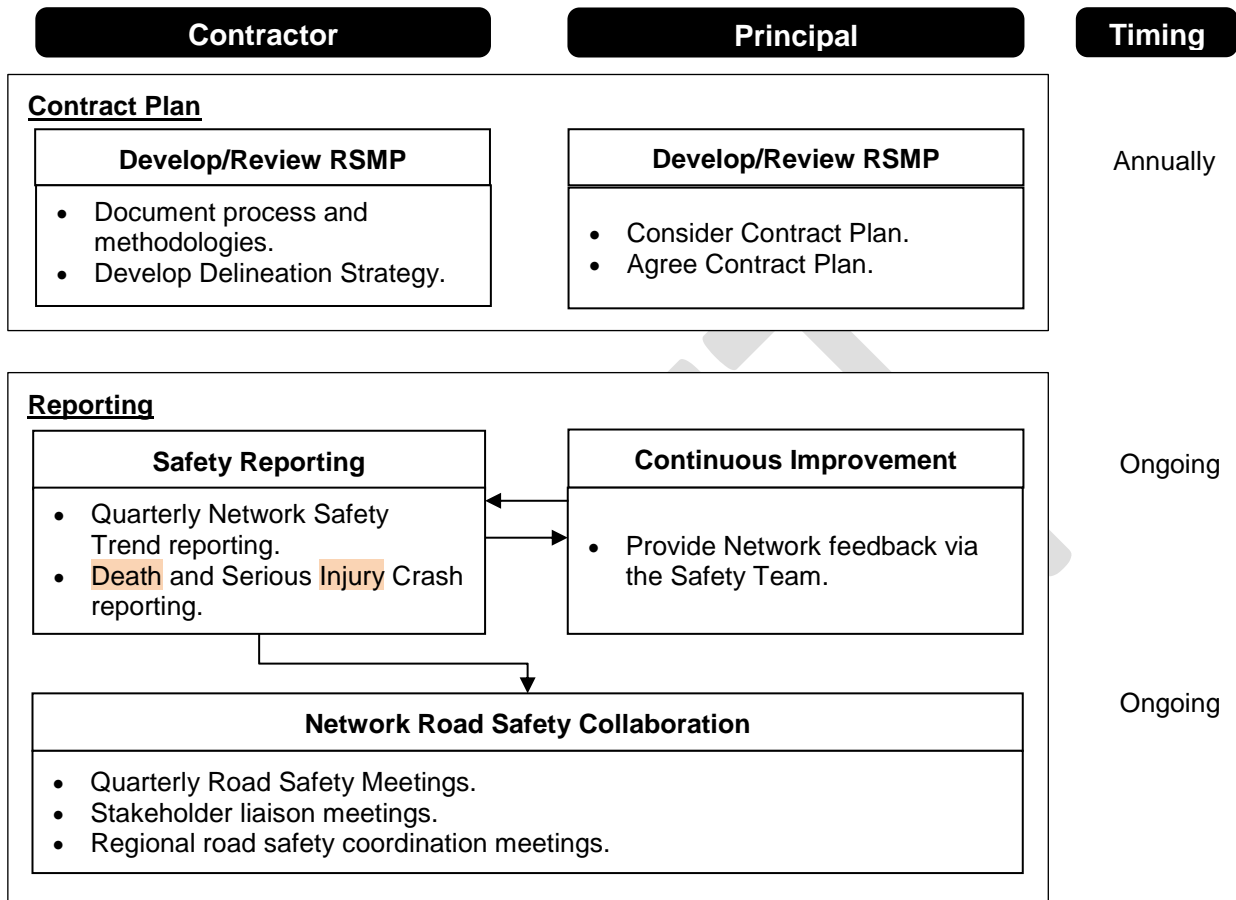
**Timing**



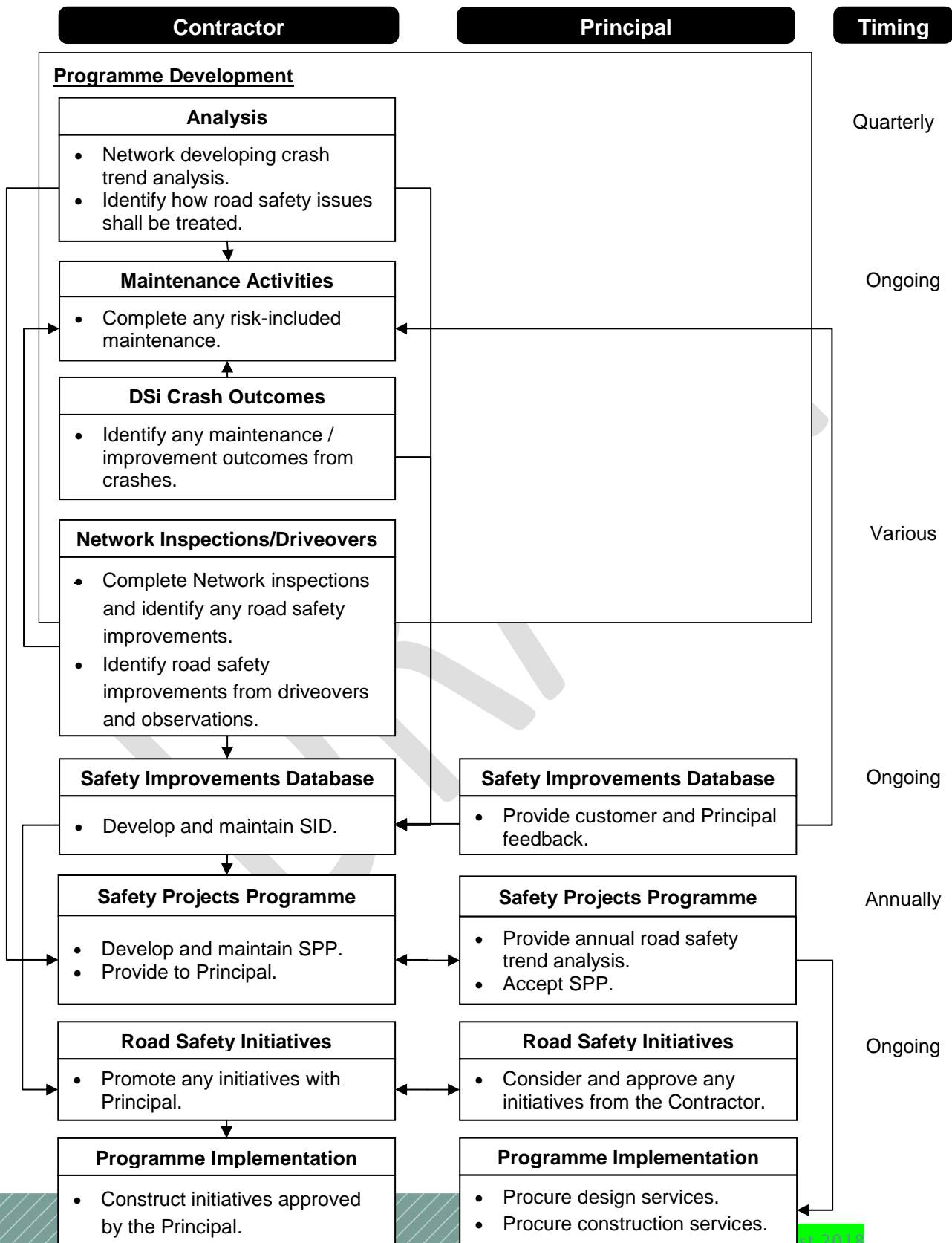




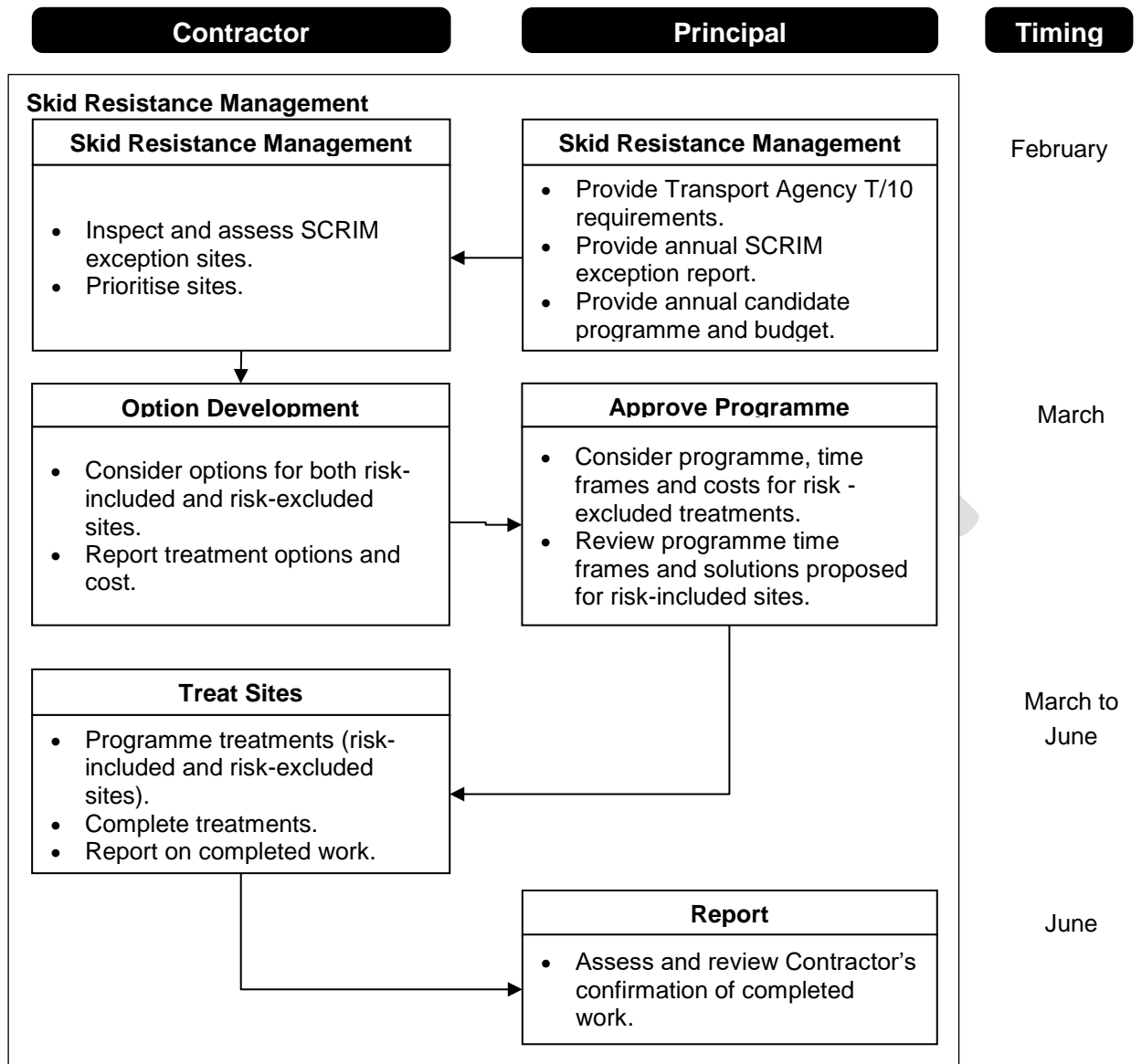
Road Safety Management			Process Map
Specification Section	5.0 Network Management	Clause Reference	5-5 5.8



<b>Road Safety Management</b>		<b>Process Map</b>	
<b>Specification Section</b>	5.0 Network Management	<b>Clause Reference</b>	5.5 5.8



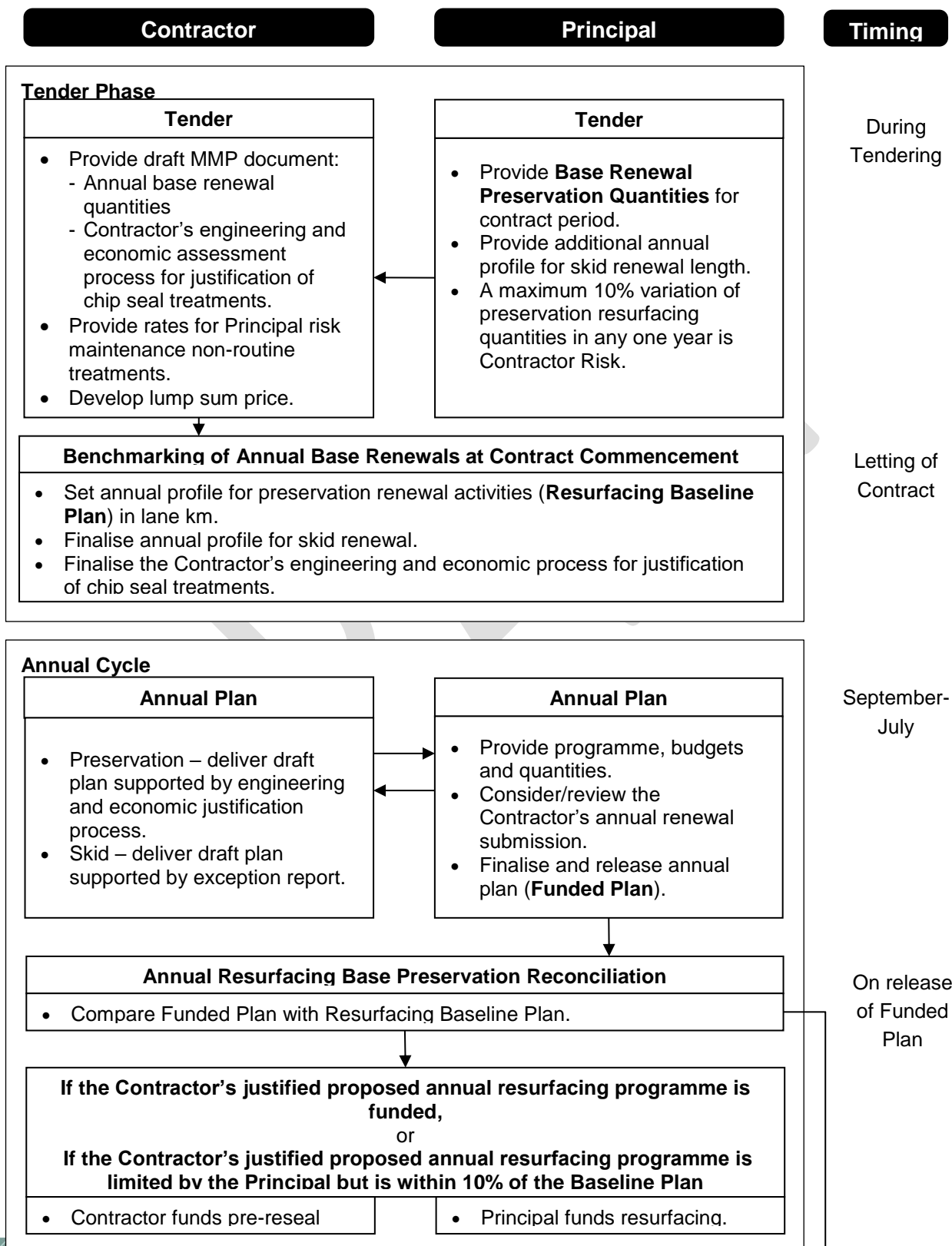
Road Safety Management			Process Map
Specification Section	5.0 Network Management	Clause Reference	5.5 5.8



# Management of Annual Resurfacing Quantity

## Process Map

Specification Section	6.0 Physical Works	Clause Reference	6.1.3 2.5.4 / 5.2.5
-----------------------	--------------------	------------------	---------------------





# Management of Annual Resurfacing Quantity

## Process Map

Specification Section

6.0 Physical Works

Clause Reference

6.1.2 2.5.4 / 5.2.5

**Contractor**

**Principal**

**Timing**

### Annual Cycle (continued)

**If the Contractor's justified proposed annual resurfacing programme is reduced by the Principal > 10% of the Baseline Plan**

For the lengths beyond 10%, a risk transfer occurs:

On deferred sites:

- Contractor still completes pre-reseal repairs that they would normally have done.

On deferred sites, Principal funds:

- any other holding repairs that Contractor would not normally have done, such as crack sealing.
- all other future holding repairs and pre-reseal repairs until surface renewal.

**The skid resistance resurfacing programme is funded equal to or below the predicted annual skid resistance profile**

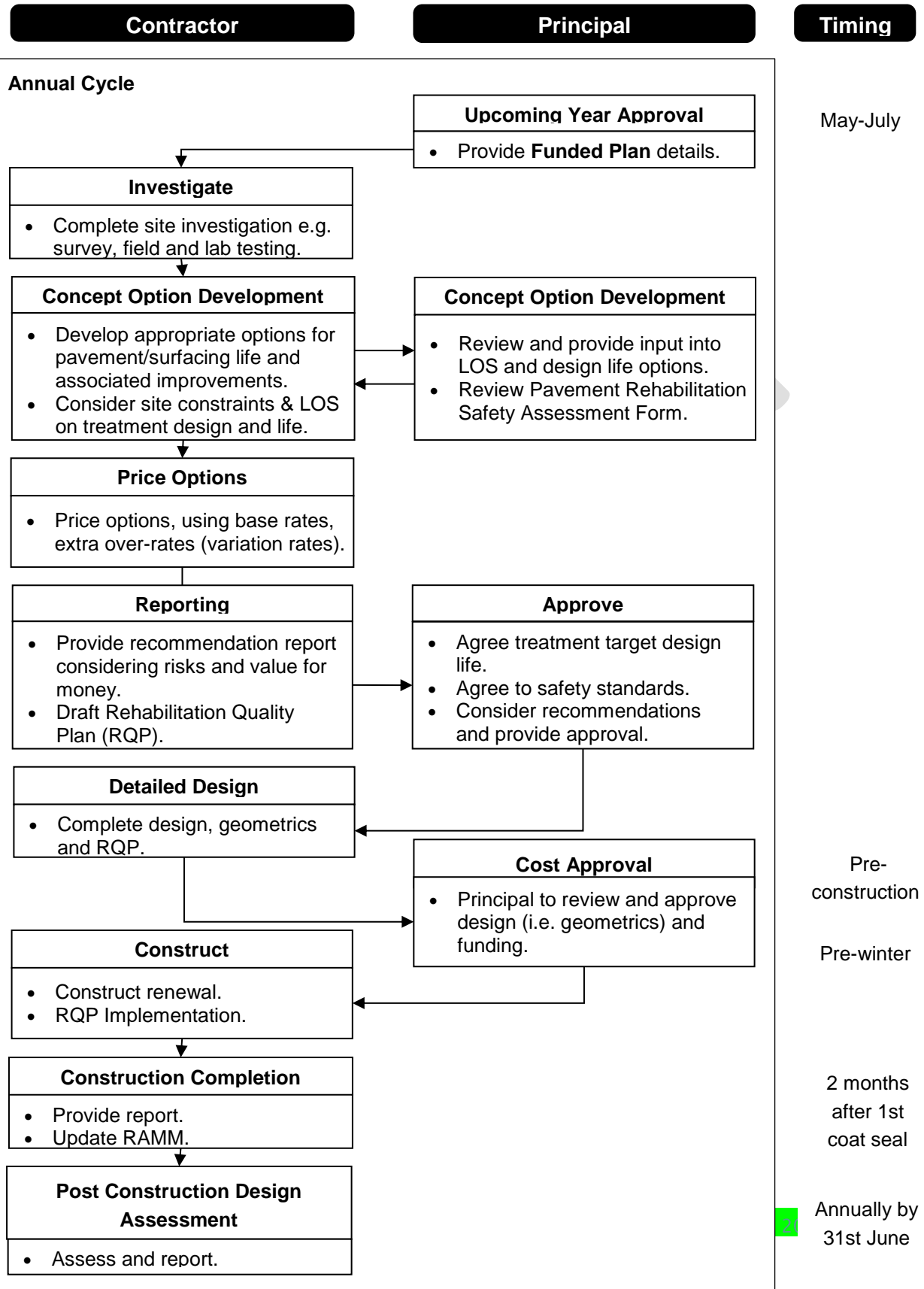
- Contractor funds pre-reseal repairs.

- Principal funds resurfacing.

**The skid resistance resurfacing programme is funded above the predicted annual skid resistance profile**

- Principal funds pre-reseal repairs.
- Principal funds resurfacing.

Annual Renewals Design and Construct			Process Map
Specification Section	6.0 Physical Works	Clause Reference	6.1.2/6.1.3 5.3.1 /5.3.2



## 2.5 OPM MONTHLY EVALUATION EXAMPLE

### Part A: Establishing the at-Risk Payment value for the Contract Period

#### Monthly at-Risk Payment

Payment for Contract Works is done monthly for the Contract Period (e.g. 84 months), minus the establishment and renewal lump sum costs.

Tendered base lump sum derived from Schedule 1 (over 84 months)	\$40M
Establishment cost and renewals from Schedule items 1.1, 6.2 and 6.4	\$19M
Total tendered base lump sum less Establishment	\$40M – \$19M
	= \$21M
Annualised Total Tendered base lump sum:	= \$21M / 7 years
	= \$3M
Monthly tendered base lump sum	(1/12) * \$3M
	= \$250K
Maximum monthly at-risk payment	10% * \$250K
	= \$25K

For further information on payment, see Basis of Payment, Section 1.

The value of the monthly at-Risk Payment is vulnerable to change dependent on the level of non-conformance.

### Calculating the number of audit sections

The number of audit sections is dependent on variable elements, being the size of the network and the sample size; and an invariable element being the length per audit section (km) which has been set at 5km.

Size of network (Km):	500
Number of classes in network (#):	4
Audit size (%):	10%
Measure frequency:	Monthly
Length per audit section (Km):	5

Amount audited (Km):	500Km * 10% = 50
Audit sections (#):	50Km / 5Km = 10

### Number of Audit sections per Road Class

The Principal has pre-determined the number of sections to be audited per month (refer Maintenance Specification, Section 2). A specified number of audit sections are included in the monthly OPM compliance self-auditing regime. Each audit section may cover only one road class.

For this particular example, the Principal has assigned the following number of audits per road class:

Road Class	Km	Audit Sections (#)
NSHVH	150	4
NSH	100	2
RSH	50	1
RDH	200	3
<b>Total</b>	<b>500</b>	<b>10</b>

Road Class	Km	Audit Sections (#)
NatHV(M&E)	0	0
NatHV	150	4
Nat	100	2
Reg	50	1
Art	200	3
PCol	0	0
SCol	0	0
Acc	0	0
AccLV	0	0
<b>Total</b>	<b>500</b>	<b>10</b>

### Summary

For this audit, there will be four audit sections on NSHVH NatHV roads, two audits on NSH Nat roads, one audit on RSH Reg and three on RDH Art roads:

- The network should be divided into 5 km lengths, some audit sections may exceed the 5km to ensure the tails of the network are not omitted and conversely some audit section maybe less.
- Audit sections are to be randomly generated for each road class so that the requirements to meet the total number of audit sections per road class are achieved.
- The Contractor and Principal will agree the appropriateness of the audit sections to be audited each month.
- The Contractor is required to commence the monthly audit within 24 hours of the agreed audit section programme.
- In addition to those OPMs that are measured in the field for each audit section the Contractor is also required to audit office-based OPMs monthly. The number of office-based OPMs will vary monthly dependent on what work has been completed and when an annual OPM is measured for compliance. Office-based OPMs are reported separately to the audit section OPMs. All OPMs measured for that month are aggregated to give the overall month's compliance score.



## Part B: Monthly Network Compliance Evaluation

Ten audit sections have been selected by the Contractor and agreed with by the Principal. All the sections will be audited against all relevant field-related OPMs. Monthly evaluation is determined by assessing the compliance with the standard in that month for both field and office-based OPMs, the duration of non-conformances, the number of occurrences and the applied weightings for selected OPMs leading to the overall audit score.

### Occurrences

The non-compliances for each audit section are summarised. All these OPMs evaluate 10% of the sample size, measured monthly.

Audit Section #	Road Class	Key reporting	Deformations, Heaves and Shoves		Unlined water channels		Barrier and Hand Rail Damage Repairs				
			OPM 1	OPM 2817	OPM 2918	OPM 5345	OPM 5446	OPM 6455	OPM 6556	OPM 6657	OPM 6758
1	NSHVHNat HV		1								
2	NSHVHNat HV					1		1			
3	NSHVHNat HV		1			1		1			
4	NSHVHNat HV										
5	NSHNat		1								
6	NSHNat					1		1			
7	RSHReg										
8	RDHArt					1					
9	RDHArt										
10	RDHArt					1					
A	N/A	1									
<b>Total</b>		<b>1</b>	<b>3</b>		<b>5</b>		<b>2</b>	<b>1</b>			

## Weighting

Depending on the nature and context of each OPM, they may have different weighting consequences for not achieving the standard. The following table lists the weightings by each of the OPM categories as listed in Maintenance Specification, Section 2.

OPM Category	Weighting
Key OPMs Safety	4
Safety-related OPMs Customer Facing	2
All other OPMs Asset Condition	1
OPM Non-conformance identified by Principal or representative and not identified by Contractor	5

### Types of non-compliances and their corresponding weightings

Non-compliance type	All other OPMs Safety OPMs				Safety-related OPMs Customer Facing OPMs			Key OPMs Asset Condition OPMs			
	55	56	57	58	82	83	84	17	18	45	46
OPMs											
Occurrences Sum	2	1						3		5	
Weighting	4	4	4	4	2	2	2	1	1	1	1

## Duration

The duration is the number of consecutive corresponding months where non-compliances have occurred or not been closed out for that OPM.

OPM	Occurrences per OPM each month:						
	1	17	18	45	46	55	56
January	2	0		0			
February	0	1		1			
March	1	3		5		2	1
Non-conformance duration at March audit	1	2		2		1	1

## Total

The Monthly Network Compliance score (MNCS) is calculated using the following equation:

$$MNCS = \sum (\text{Occurrences} * \text{Weighting} * \text{Duration})$$

OPM	Occurrences	Weighting	Duration	MNCS	
1	1	1	1	=1*1*1	1
17	3	1	2	=3*1*2	6
18	0	11	0	=0*1*0	0
45	5	1	2	=5*1*2	10
46	0	1	30	=0*1*0	0
55	1	4	13	=0*4*3	14
56	1	4	1	=1*4*1	4
57	0	4	0	=0*4*0	0
58	0	4	0	=0*4*0	0
					= 1 + 6 + 10 + 14 + 4
					<b>= 35</b>

In this example the MNCS is less than 45; therefore no financial penalty is imposed. If the MNCS was between 45 and 65 a variable financial penalty would result depending on the score. If MNCS was over 65 then 100% financial penalty would be imposed.

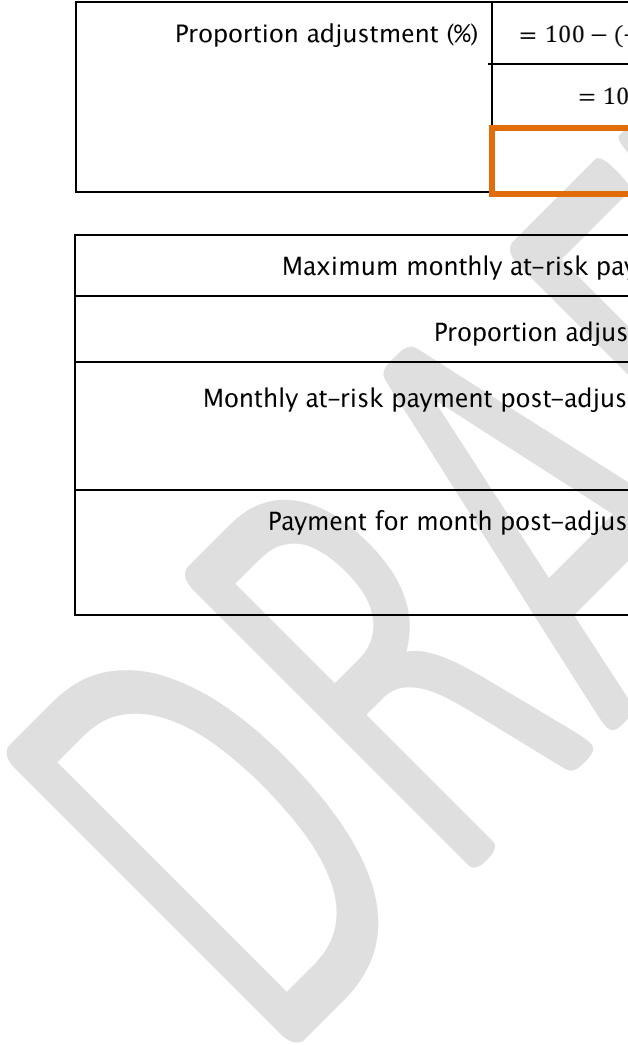
### If the overall monthly score was 57

The following equation determines the proportion of payment that is adjusted, where  $x = 57$ , which is the MNCS:

$$\text{Proportion adjustment} = -0.2336x^2 + 21.188x - 380.78$$

Proportion adjustment (%)	$= 100 - (-0.2336(57)^2 + 21.188(57) - 380.78)$
	$= 100 - (-759.0 + 1207.7 - 380.78)$
	<b>= 32.1</b>

Maximum monthly at-risk payment:	\$25K
Proportion adjustment:	<b>32.1%</b>
Monthly at-risk payment post-adjustment:	$\$25K * 32.1\%$
	$= \$8,025$
Payment for month post-adjustment:	$= \$(250,000 - 8,025)$
	<b>\$241,975</b>



## 2.6 EXAMPLE OF AN ASSET RECONCILIATION REGISTER AND COST CALCULATION

TABLE 2.6: ASSET RECONCILIATION REGISTER AND COST CALCULATION EXAMPLE

PROJECT	YEAR	RECONCILIATION ITEMS, DESCRIPTIONS AND UNITS									
		2.3.1	2.3.2	2.3.3	2.3.4	2.3.5	2.3.6	2.3.7	2.3.8	2.3.9	2.3.10
		STREET LIGHT	GUARD RAIL	PM FULL RTB	PM EL	PM FLUSH MED.	PM NO PASS.	SEALE D PAVE.	HORIZ. SUB DRAIN	VEGE TYPE 7	SIGN <750 MM2
		EA	M	EA	M	EA	M	M <sup>2</sup>	M	M <sup>2</sup>	EA
Project 1	1	2	45		200			100			
Project 2	1	1									
Project 3	2	4	-5		400						
<b>TOTAL</b>		<b>7</b>	<b>40</b>		<b>600</b>			<b>100</b>			
<b>TENDERED RATE</b>		<b>\$20</b>	<b>\$5</b>		<b>\$0.50</b>			<b>\$5</b>			
<b>AMOUNT</b>		<b>1,400</b>	<b>200</b>		<b>300</b>			<b>500</b>			
<b>GRAND TOTAL for Start of Year 3</b>		<b>\$2,400</b>									
<b>Monthly LS</b>		<b>\$200</b>									



**NOTES:**

The YEAR depicts the financial year the project was issued Practical Completion constructed in. The assets are required to have been installed at least within the previous financial year.

The RATES are transferred from the Schedule of Prices for schedule items 2.3.

The AMOUNT is the total number of assets added to the network multiplied by the applicable tendered rate.

The GRAND TOTAL will be paid to the Contractor on a pro-rata basis over the next twelve months (Monthly LS). After that time, the reconciliation process will be recalculated for Year 4 taking into account new assets that have been added/deleted during Year 3.

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## Notes:

1. Check if sign/solar panel has been clipped by a vehicle or damaged by a missile, and that the foundation socket is secure.
2. Check that all attachments holding sign and solar panel to pole are secure.
3. Check sign and pole are clean with no graffiti, and no excessive build-up of bird droppings on solar panel.
4. Estimate sun's arc (winter/summer). Check there is no excessive shading of solar panel from trees, for example.
5. Sign activation is achieved by:
  - **Speed Indication Device (SID)**: Move a calibrated tuning fork slowly in and out 0.5 – 0.7m in front of radar. The tuning fork is normally calibrated to 45 km/h. Check SID displays the correct speed.
  - **Curve Advisory Sign (CAS)**. Either use two calibrated tuning forks to **activate** the upper threshold (displays arrow and "SLOW DOWN") and lower threshold (displays arrow only), *or* drive towards sign *decelerating to a safe speed* whilst activating the upper and lower thresholds.
  - **School**: May not be activated at time of visit. Phone the school prior to visit and confirm sign display and timer operation are satisfactory.
  - **40km/h School**: As for School signs.
  - **Cyclist**: Roll or ride a bicycle over the induction loops. Or open the Rainbird and take the cable marked 'dry contact output' which should be connected to the cable coming from the sign. Remove this connection and touch the two ends of the cable to the sign together. This should short the connection and activate the sign.
  - **Hidden Queue**: Turn 3-way switch in control box to "Simulate" for about 10 seconds.
6. With the display activated, check and record the position of any dead LEDs.
7. Ensure no obstruction is blocking approaching road users from seeing the signs. Check general safety.

### 3.2 LOCAL AUTHORITY MAINTENANCE ACTIVITIES AND LOCATIONS

**TABLE 3.2: LOCAL AUTHORITY MAINTENANCE ACTIVITIES AND LOCATIONS**

LOCATION			DESCRIPTION
LOCAL AUTHORITY	ACTIVITY	GENERAL LOCATION	
<<to complete>>			
<<consider stock control responsibilities, lighting, signals, tunnels>>			

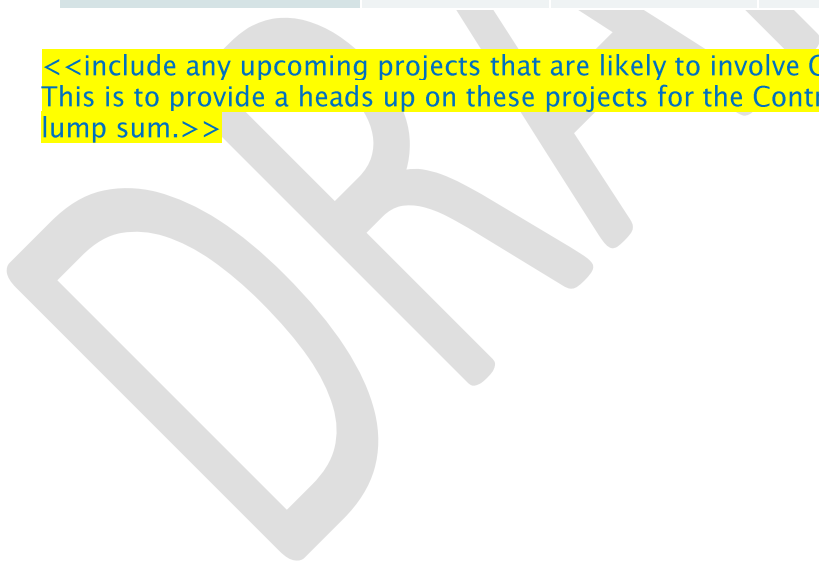
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### 3.3 SECTIONS OF THE NETWORK UNDER THE CURRENT OR FUTURE CONTROL OF SEPARATE CONTRACTORS

**TABLE 3.3: SECTIONS OF THE NETWORK UNDER THE CURRENT OR FUTURE CONTROL OF SEPARATE CONTRACTORS**

TYPE OF WORK	START DATE	COMPLETION DATE AND/OR PERIOD OF DEFECTS LIABILITY NOTIFICATION	CONTACT PERSON AND CONTACT NUMBERS
<<to complete>>			

<<include any upcoming projects that are likely to involve Contractor coordination. This is to provide a heads up on these projects for the Contractor to price into the lump sum.>>





### 3.4 STANDARD SPECIFICATIONS

The following Standard Specifications apply to this contract.

**TABLE 3.4: STANDARD SPECIFICATIONS**

SPECIFICATION REFERENCE	ISSUE	SPECIFICATION DESCRIPTION
Transport Agency B/2	2005	Construction of Unbound Granular Pavement Layers
Transport Agency B/5	2008	In-situ Stabilisation of Modified Pavement Layers
Transport Agency F/ 1	1997	Earthworks Construction
Transport Agency F/ 5	2000	Corrugated Plastic Pipe Subsoil Drain Construction
Transport Agency M/ 4	2006	Basecourse Aggregate
Transport Agency M/ 6	2011	Sealing Chip
Transport Agency M/10	2014	Asphalt Concrete
Transport Agency M/14	2011	Edge Marker Posts
Transport Agency M/17P	1989	W-Section Bridge Guardrail
Transport Agency M/19	1994	Specification for Tubular Steel Lighting Columns
Transport Agency M/23	2014	Road Safety Barrier Systems
Transport Agency M/24	2006	Specification for Audio Tactile Profiled Roadmarkings
Transport Agency M/30	2014	Specification and Guidelines for Road Lighting Design

TABLE 3.4: STANDARD SPECIFICATIONS

SPECIFICATION REFERENCE	ISSUE	SPECIFICATION DESCRIPTION
Transport Agency P/ 9	1975	Construction of Asphaltic Concrete Paving
Transport Agency P/11	2007	Open-Graded Porous Asphalt
Transport Agency P/17	2012	Performance Based Specification for Bituminous Reseals
Transport Agency P/22	2006	Reflectorised Pavement Marking
Transport Agency P/24	2008	Performance Based Specification for Traffic Signs <del>performance-based specification</del>
Transport Agency P/30	2009	High Performance Road Marking
Transport Agency P/39	2013	Highway Landscape Treatments
Transport Agency P/40	2014	Noise Mitigation
Transport Agency P/44	2013	Generic Urban Urban Design
Transport Agency P/45	Draft	Accidental Archaeological Discovery
Transport Agency P/46	2016	State Highway Stormwater Specification
Transport Agency S/ 6	2017	Bridges and Other Significant Highways Structures Inspection Policy
Transport Agency T/ 3	1981	Measurement of Texture by the Sand Circle Method
Transport Agency T/10	2013	Skid Resistance Investigation and Treatment Selection
Transport Agency T/15	2014	Specification for Repeated Load Triaxial (RLT) Testing Pavement Materials

**TABLE 3.4: STANDARD SPECIFICATIONS**

SPECIFICATION REFERENCE	ISSUE	SPECIFICATION DESCRIPTION
Transport Agency Z/ 4	2013	<del>Minimum Standard – Contractor’s Social and Environmental Management Plan</del>
Transport Agency Z/ 5	2017	<del>Minimum Standard – Health and Safety</del> Compliance Notice
Transport Agency Z/1	2017	Quality Management Plan
Transport Agency Z/11	2015	<del>Minimum Standard document – Performance Evaluation</del>
Transport Agency Z/13	03/2009	Incident Management Reporting
Transport Agency Z/15	2016	Asset Owner’s Manual
Transport Agency Z/19	2016	Environmental and Social Responsibility Standard
Transport Agency Z/20	03/2009	<del>Minimum Standard – Project Feasibility Report</del>
Transport Agency Z/44	2013	Risk Management

### 3.5 OTHER PUBLICATIONS

The following publications apply to this contract.

**TABLE 3.5: OTHER PUBLICATIONS**

SPECIFICATION REFERENCE	SPECIFICATION DESCRIPTION
	Austrroads Guide to Pavement Technology: Parts 2 & 5
	Austrroads Guide to Road Design Part 3: Geometric Design
	Chipsealing in New Zealand
	Environmental and Social Responsibility Standard
	Guide on Surfacing in Urban Environments
	Guideline Making roads motorcycle friendly <a href="http://msac.org.nz/assets/Uploads/pdf/Making-Roads-Motorcycle-Friendly-NZ-September-2014-V2.pdf">http://msac.org.nz/assets/Uploads/pdf/Making-Roads-Motorcycle-Friendly-NZ-September-2014-V2.pdf</a>
	Guidelines for CMA
	Guidelines for Performance Based Rehabilitation Contracts (Draft)
	Highway and Network Operations Environmental and Social Responsibility Standard
	Maintenance Intervention Strategy Guideline
	National Code of Practice for Utility Operator's Access to Transport Corridors
	New Zealand Cycle Trail Design Guide
	NZ Transport Agency Brand Manual
	NZTA Cycling Network Guidance
	NZTA Guide to Pavement Evaluation and Treatment Design
	NZTA Guide to Pavement Structural Design
	NZTA National Cycle Network
	NZTA Specification for the Construction and Maintenance of Cycling Facilities
	Road Safety Manufacturers Association (RSMA) Standards for the Manufacture and Maintenance of Traffic Signs, Posts and Fittings

**TABLE 3.5: OTHER PUBLICATIONS**

SPECIFICATION REFERENCE	SPECIFICATION DESCRIPTION
	Safe Network Management Activity Manual
	Safer Journeys for People Who Cycle – Cycling Safety Panel Final Report
	Social, Environmental and Responsibility Standard
	The New Zealand Supplements to the Austroads Guides
	The Transport Agency's Bridge Manual
	The Transport Agency's Structures Design Guide
CoPTTM	Code of Practice for Temporary Traffic Management 2014 : Part 8 of the Traffic Control Devices (TCD) Manual
EEM1	Economic Evaluation Manual
MOTSAM	Manual of Traffic Signs and Markings
PPFM	Planning, Programming and Funding Manual
SM012	State Highway Control Manual
SM018	The Annual Plan Instruction Manual
SM020	State Highway Asset Management Manual
SM030	State Highway Professional Services Contract Proforma Manual
SM032	State Highway Maintenance Contract Proforma Manual
SM050	State Highway Database Operations Manual
SM051	Location Referencing Management System Manual
SP/M/001	Planning Policy Manual
SP/M/002	State Highway Safe Network Management Activity Manual
SP/M/016	Bridge Inspection and Maintenance Manual
	Winter Service Requirements 2013



### 3.6 BENCHMARK AND CALIBRATION SECTIONS

TABLE 3.6: ROAD BENCHMARK AND CALIBRATION SECTION LOCATIONS

ROAD NAME	START LOCATION (M)	END LOCATION (M)	LENGTH (M)	CLASSIFICATION	TLA
<<to complete>>					

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### 3.7 STOCKPILE SITES AND DISPOSAL AREAS

TABLE 3.7.1: STOCKPILE SITES			
LOCATION			NAME
ROAD NAME	DISPL. (M)	SIDE	
<<to complete>>			

TABLE 3.7.2: DISPOSAL SITES				
LOCATION			NAME	NOTES
ROAD NAME	DISPL. (M)	SIDE		
<<to complete>>				

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### 3.8 LAND ENTRY AGREEMENTS

TABLE 3.8: LAND ENTRY AGREEMENTS			
LOCATION			OWNER'S NAME, CONTACT NUMBER AND AGREEMENT REFERENCE
ROAD NAME	DISPL. (M)	SIDE	
<<to complete>>			Contractor to arrange if required

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## 4 Contract Plan

### 4.1 MINIMUM REQUIREMENTS FOR PPE

Work completed to investigate, construct and maintain the Network carries inherent risks. All practical steps should be taken to ensure that the Principal, Contractor (including sub-contractors and suppliers) and all visitors are protected from hazards (by the use of controls that eliminate, isolate or minimise their exposure). Regardless, Personal Protection Equipment (PPE) remains a necessary mitigation measure in most work types, and is designed to complement other controls.

The following table sets out the main situations, by exposure type, where the Principal requires PPE to be provided by employers and used by employees, suppliers and visitors.

If the Contractor has a higher standard of PPE, then that requirement will apply to all personnel on or visiting a Site.

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TABLE 4.1.1: MINIMUM REQUIREMENTS FOR PPE

EXPOSURE TYPE	ACTIVITY / PLACE OF WORK	SAFETY EYEWEAR	SAFETY FOOTWEAR	HIGH VISIBILITY CLOTHING	LONG SLEEVES AND LONG PANTS	SAFETY HELMET	SUNHAT	GLOVES	HEARING PROTECTION	COMMENTS
1	On a construction / repair site on a <b>legal road State Highway</b> .	√	√	√	√	√	-	Carried and worn when manual handling.	Available and used when working in close proximity to noisy equipment and in all underground environments.	Includes significant repair work that involves plant use e.g. re-sealing, rehabilitation, and major drainage activities.
2	Simple maintenance activities on a <b>legal road State Highway</b> .	Carried	√	√	√	R/A	√	Carried and worn when handling cutting / grinding power tools and hazardous materials.	Available and used when working in close proximity to noisy equipment.	Activities such as mowing, marker post cleaning, litter collection, etc.



**TABLE 4.1.1: MINIMUM REQUIREMENTS FOR PPE**

EXPOSURE TYPE	ACTIVITY / PLACE OF WORK	SAFETY EYEWEAR	SAFETY FOOTWEAR	HIGH VISIBILITY CLOTHING	LONG SLEEVES AND LONG PANTS	SAFETY HELMET	SUNHAT	GLOVES	HEARING PROTECTION	COMMENTS
3	In a vehicle or plant equipment on a construction / repair site on a legal road State Highway	Carried	✓	✓	✓	Carried	-	Carried	Carried	

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TABLE 4.1.1: MINIMUM REQUIREMENTS FOR PPE

EXPOSURE TYPE	ACTIVITY / PLACE OF WORK	SAFETY EYEWEAR	SAFETY FOOTWEAR	HIGH VISIBILITY CLOTHING	LONG SLEEVES AND LONG PANTS	SAFETY HELMET	SUNHAT	GLOVES	HEARING PROTECTION	COMMENTS
4	Working outside a vehicle on the State Highway Network.	-	✓	✓	✓	R/A	✓	R/A	R/A	<p>This is for inspection work only, not on a Construction or maintenance site. Includes private property and Crown land where construction of infrastructure is planned.</p> <p>For example, during design of a new Greenfield site, if mobile plant (e.g. excavator) is present or if personnel are within 20m of fixed plant (e.g. drilling rig), then treat as a construction site (exposure type 1).</p>

5	Visitors to a construction site / community open days / Sod Turnings, Ribbon Cuttings, Site Blessings.	R/A	R/A	R/A	R/A	R/A	R/A	R/A	R/A	Risks to be assessed depending on number of visitors and where they will be on site. In general, small groups to be treated as exposure type 1, 2 or 3 but large groups (for example 50 visitors on a bus), could be treated based on a risk assessment. For example, it is not likely to be practical to require large numbers of people to wear PPE so all risks are mitigated by only allowing visitors access to areas where there are no hazards.
6	In a vehicle on the Network. In an office environment.	-	-	-	-	-	-	-	-	This includes being outside vehicle for routine stops whilst travelling. Any inspection / physical work undertaken is

**TABLE 4.1.1: MINIMUM REQUIREMENTS FOR PPE**

EXPOSURE TYPE	ACTIVITY / PLACE OF WORK	SAFETY EYEWEAR	SAFETY FOOTWEAR	HIGH VISIBILITY CLOTHING	LONG SLEEVES AND LONG PANTS	SAFETY HELMET	SUNHAT	GLOVES	HEARING PROTECTION	COMMENTS
										covered by exposure types 3 & 4.  Includes in the site office, public meeting venues, private (landowners) residence etc.

**Key:**

✓ PPE Requirement.

- No PPE requirement.

Carried PPE required to be readily available at all times and used where appropriate.

R/A Risk Assessment to be completed.

**Notes:**

1. These minimum requirements apply to the Principal, Contractor, Sub-contractors, suppliers and visitors when they are on official work-related duties.
2. Any departure from these minimum requirements will need a documented, task specific, risk assessment justifying the exemption and approved by a nominated individual within that employer's organisation.

3. Other types of PPE may be required in certain circumstances in addition, such as waterproofs, restraint harnesses, safety gumboots, sun shade cover for Safety helmet, dust masks, respirators etc.
4. These minimum requirements may be exceeded by the requirements of a particular company, place of work or activity.

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**TABLE 4.1.2: DEFINITION AND RISKS OF PARTICULAR PPE REQUIREMENTS**

<b>Definitions and Risks</b>	<b>Safety Eyewear</b>	<b>Safety Footwear</b>	<b>High Visibility Clothing</b>	<b>Long Sleeves and Long Pants</b>	<b>Safety Helmet</b>	<b>Sunhat</b>	<b>Gloves</b>	<b>Hearing Protection</b>
Definition of particular PPE requirement.	Impact resistance eyewear, tinted if required. Not required when operating plant with closed operator enclosure. Full face shields to be considered for certain activities.	Ankle length lace-up with steel toe, sole and heel, to comply with appropriate standard. Plant operators may use slip on boots to allow ankle flexibility.	Complying with CoPTTM. Consideration should be given to use of 3 part pull apart vests to reduce snagging hazard.	Suitable for operation, cognisance taken of any extreme hot / cold environments. Flameproof overalls to be worn as appropriate.	Complying with appropriate standard, with provision for sun protection as necessary.	Any suitable hat that provides sun protection. Outside in summer on sunny days. Not when driving vehicles, trucks and plant with covered cabs.	Suitable for specific operation.	Earplugs or ear muffs in accordance with industry standards.
Risks that PPE will partially or wholly mitigate.	Physical injury to eye; dust; dazzle causing internal eye injury or failure to see hazards.	Physical Injury through slips, trips, falls; falling materials.	Injury from moving Plant / vehicles.	Some physical injuries, cuts and scrapes. Minimisation of health risks from excessive sun exposure.	Injury from falling objects /moving plant /protruding hazards.	Minimisation of health risks from excessive sun exposure.	Physical injury from sharp or heavy objects. Loss of grip causing fall.	Long term hearing loss.

## 4.2 PRINCIPAL'S ASSET REGISTERS OVERVIEW

**TABLE 4.2.1: TABLES TO BE MAINTAINED IN PRINCIPAL'S ASSET REGISTER BY THE CONTRACTOR**

RAMM TABLE NAME	OVERVIEW OF TABLE CONTENT
Carriageway	Dimensional information on the carriageway asset (excluding surfacing and pavement layers). Only some elements of the carriageway table are permitted to be changed by the Contractor – refer to SM050
Carriageway Surfacing	Information on current and historic surfacing records (including those that have been removed as a result of milling/pavement renewals)
Drainage	Information on all drainage-related assets (excluding lined and unlined water channels)
Features	Inventory information on features such as rest areas, weigh pits, etc.
Footpaths	Information on footpaths and shared pathways (including cycleways) and bridlepaths. <del>ways. To be maintained by the Contractor when defined in the contract scope</del>
Forward Works Programme	This is a module in RAMM called NOMAD and contains the pavement and surfacing future works
ITS	Inventory information on ITS signage such as VMS boards, etc. To be maintained by the Contractor when defined in the contract scope
Maintenance Costs	Contains information on quantities of routine maintenance carried out on the network. Ideally this table is populated from data in the CMMS
Markings	Information on all pavement markings including ATP, RRPMS and long-life markings
Other Structures	Information on all other structure assets (including weigh stations, noise walls, tunnels, crash cushions, high mast arms, gantries and non-retaining walls). Excludes bridges, which are included in a separate database maintained by others

**TABLE 4.2.1: TABLES TO BE MAINTAINED IN PRINCIPAL'S ASSET REGISTER BY THE CONTRACTOR**

RAMM TABLE NAME	OVERVIEW OF TABLE CONTENT
Pavement Layer	Information on current and historic pavement layers (including those that have been removed as a result of milling/pavement renewals, or reconstructed as a result of rehabilitation)
Pavement Test Pits	Information on pavement layers through test pit activities.
Railings	Information on guardrail installations including wire rope, w-section, concrete barriers and sight rails
Retaining Walls	Information on all retaining wall assets (excluding retaining walls associated with bridge structures)
Signs	Information on all <del>road</del> State Highway related signage
Streetlights	Information on streetlights such as pole types, bracket types and luminaries. To be maintained by the Contractor when defined in the contract scope
Surface Water Channel	Information on lined and unlined water channels (excluding flumes)
Traffic Signals	Information on all traffic signal components

The following table outlines the tables in RAMM that are NOT maintained by the Contractor.

**TABLE 4.2.2: TABLES TO BE MAINTAINED IN PRINCIPAL'S ASSET REGISTER BY OTHERS**

RAMM TABLE NAME	SPECIFIC NOTES
All condition-related tables	Condition-related tables such as Condition Rating, Skid Resistance, Rutting, Roughness etc. can be accessed and used by the Contractor but are maintained by others.
Carriageway	Longitudinal dimensional data is maintained by the Principal - refer to SM050.
Crashes	Maintained by the Principal.
Footpaths	Only populated when owned by the Principal and maintained by others.

**TABLE 4.2.2: TABLES TO BE MAINTAINED IN PRINCIPAL'S ASSET REGISTER BY OTHERS**

RAMM TABLE NAME	SPECIFIC NOTES
ITS	Only populated when owned by the Principal and maintained by others.
Road Names	Maintained by the Principal.
Streetlights	Only populated when owned by the Principal and maintained by others.
Traffic and Loading	This table contains traffic volume and traffic loading information and is maintained by the Principal. This data is available for use by the Contractor.
User-defined tables	The need to maintain user-defined tables will be defined in the contract scope.

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## 4.3 OTHER REGISTERS TO BE MAINTAINED BY THE CONTRACTOR

**TABLE 4.3: OTHER REGISTERS TO BE MAINTAINED BY THE CONTRACTOR**

REGISTER	OVERVIEW OF CONTENT
Approved Disposal Sites	Refer Maintenance Specification, Section 3.16
Corridor Access Requests	Refer Maintenance Specification, Section 5.5.3
Cost Recovery Register	Maintained on behalf of the Principal. Refer Maintenance Specification, Section 3.13
CS-VUE	Environmental Consent Condition Monitoring system. Refer Maintenance Specification, Section 5.6.1 [
Deed of Grants	Refer Maintenance Specification, Section 5.5.3
Geological Hazard Register	Refer Maintenance Specification, Section 5.9.1
Slip and Rockfall Register	Refer Maintenance Specification, Section 6.8.1.1
Ice Gritting and Frost Prone Sites	Refer Maintenance Specification, Section 6.6.1.1
KiwiRAP	Refer Maintenance Specification, Section 5.8.7
Land Entry Consents	Refer Maintenance Specification, Section 3.17
Licence to Occupy	Refer Maintenance Specification, Section 5.5.3
Limited Access Roads	Refer Maintenance Specification, Section 5.4.7
No Spray Zones	Refer Maintenance Specification, Section 4.4
No Stopping Bylaws	Refer Maintenance Specification, Section 3.9 and 5.1.1
Parking Restrictions	Refer Maintenance Specification, Section 3.9 and 5.1.1
Pavement Marking Schedules	If not contained in RAMM, a separate road marking schedule may be maintained. Refer Maintenance Specification, Section 6.7.1.7
RAMM CAR Manager	Refer Maintenance Specification, Section 5.5.3
Safety Improvements Register	Refer Maintenance Specification, Section 5.8.3



**TABLE 4.3: OTHER REGISTERS TO BE MAINTAINED BY THE CONTRACTOR**

REGISTER	OVERVIEW OF CONTENT
Side Drains	If not contained in RAMM, a separate side drain schedule may be maintained.
Speed Limits	Refer Maintenance Specification, Section 3.9 and 5.1.1
Temporary Speed Restrictions	Refer Maintenance Specification, Section 5.4.6
Vegetation Control Schedules	Refer Maintenance Specification, Section 6.6.1.2
Vulnerable Flooding Area Register	Refer Maintenance Specification, Section 6.4.1
Works being carried out by other Parties	Refer Maintenance Specification, Section 3.1.1
<<Other tables to be specified>>	

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## MINIMUM STANDARD FOR TEMPORARY TRAFFIC CONTROL

<<Include a TTM Level map>>

**TABLE 4.4: LEVEL OF TEMPORARY TRAFFIC MANAGEMENT**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	TTM LEVEL	NOTES
<<to complete>>				

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## 4.4 MINIMUM SCOPE CONTENT FOR PLANS

### 4.4.1 Quality Management Plan

The Contractor shall, at minimum, cover the following components within their QMP:

- Include provision for document issue and authorisation, including review and acceptance of the QMP by the Principal.
- Describe the Contractor's over-arching quality policy, objectives and systems, and how these align to the Principal's quality objectives for the contract; – Transport Agency Z/1.
- Quality management objectives: Define the quality management objectives the Contractor will apply and measure to realise quality outcomes from the products and services delivered under the Contract to help achieve KRA outcomes.
- Roles and Responsibilities: Outline the names, roles, specific quality management responsibilities and authorities of personnel involved in the contract.
- General Approach to Managing Quality: Outline the Contractor's general approach to management of quality under this contract including outlining the supporting systems for implementing the contract (such as Contractor's QMS, HS&E systems, business and financial systems, Standard Operating Procedures, and NZTA systems RAMM, CRMS etc.).
- Include a schedule of meeting, reporting and deliverable requirements, i.e. both internal and with and/or to the Principal and other key stakeholders.
- Performance Management Framework: Set-out the approach for reporting the achievement or otherwise of the performance framework KRAs, KPIs and OPMs.
- Processes: Detail the systems, processes, procedures, plans, tools, records and methods etc. to be used by the Contractor, their sub-contractors, consultants, designers (as appropriate) and suppliers to deliver the products and services required from the Contract. Where these are detailed in other Contract Plans, the Contractor shall provide sufficient reference and outline of the key quality management assurance and control activities and/or associated hold points and gateways including all necessary quality records and evidence. Typical detail shall include:
  - Checking and verification: Detail the approach for checking and verification of all deliverables
  - Supplier/Sub-contractor Management: Include a list of Sub-contractors, consultants, designers and suppliers including the activities undertaken for ensuring the quality of their products and services and compliance to the contract requirements
  - Information and Records Management: Identify the quality records to be kept as part of the Contract and how the quality management of information and records will be achieved

- Non-conformance Management: Detail the Contractor's internal non-conformance and corrective-action system to be applied. Including details on the Contractor's approach to manage and implement, corrective actions, continuous improvement and lessons learnt in response to opportunities for improvement, non-compliance and/or non-conformance when and whenever this occurs. Include how the Contractor will identify, monitor and report this to the Principal
  - Internal Auditing: Detail the Contractor's auditing and review activities such as internal review, external reviews, management and contract reviews, physical work audits, and management system audits. Include audit programme detailing the timing and frequency of internal reviews and/or audits
  - Programme Management: Details the Contractor's maintenance management system (or equivalent approach) and methodology used to collate all works programmes, monitor progress of works, manage the delivery of programme and manage change when and whenever this occurs
  - Physical work quality: Detail how the quality of physical work activities (including both maintenance and asset renewal works) will be assured and controlled in this contract including but not limited to standards applied to achieve compliance, compliance monitoring activities, linkage to data quality management, quality management surveillance activities such as Inspection and Test Plans (ITPs) used, schedule(s) of site inspection and testing activities, monitoring and/or audits (Contractor and/or 3<sup>rd</sup> party undertaking works), Random Verification Testing (RVT).
  - Network Control Activities, Safety Management, Contract Administration activities: Detail how the quality of all activities will be assured and controlled in this contract, including where applicable linkage to KPIs and OPM inputs/outputs
- Data Quality Management: Refer to data quality plan requirements.
  - Continual Improvement: Detail how continual improvement will be applied to the Contractor's products and services such as use of process improvements, innovation registers, non-compliance and other learnings throughout the contract period.
  - QMP Implementation and Management: Detail the Contractor's approach to QMP implementation and management including provision for training, awareness and competency activities as well as document review and updating activities.
  - Renewal Quality Plans: In addition to the QMP, for pavement rehabilitation and resurfacing activities, Renewal Quality Plans are required to be prepared by the Contractor for site-specific situations. Any lessons learnt as a result of the Renewal Quality Plan(s) implementation will be reflected back into the QMP.

#### 4.4.2 Traffic Control Plan (TCP)

The Contractor shall, at minimum, cover the following components within their TCP:



- Include provision for document issue and authorisation, including review and acceptance of the TCP by the Principal.
- Describe the Contractor's over-arching traffic control policy, objectives and systems, and how these align to the Principal's objectives for the contract.
- Roles and Responsibilities: Outline the names, roles, specific traffic control management responsibilities and authorities of personnel involved in the contract. Include contact details for the Contractor, Sub-contractor(s), Principal, emergency services and other stakeholders.
- General Approach to Managing Traffic Control: Outline the Contractor's general approach to management of traffic control under this contract including outlining the supporting systems for implementing the contract.
- Customer Focus: How the Contractor and its Sub-contractors carry out work with minimal impact on customers and how this supports the CSMP.
- PPE: Outline how the Contractor's and Sub-contractor's personnel will be protected at all times.
- Temporary Traffic Control: Define the minimum requirements for temporary traffic control for all activities within the contract. Details shall include the provision of appropriate transitions, to enable safe and efficient traffic flow into, through and out of work sites. Provide a documented process for preparation, review and approval of TMPs.
- Layout diagrams: Present typical layout diagrams, method statements etc. for the implementation of traffic control while undertaking each aspect of the Services (including proposed methodology to determine when site-specific layout diagrams and method statements are required if the Services require traffic control measures not covered by standard codes of practice).
- TMC Role: Define the processes and procedures to be used to fulfil the Traffic Management Coordinator (TMC) role.
- TMP Approvals; Detail the:
  - document-tracking and control system to ensure that only the latest operative copy of the TMP is in circulation,
  - the process for approval of any temporary speed limits and ongoing variations,
  - A documented systematic approach to coordinating all road-work activities that affect road users, and including coordination with adjacent Network contracts, and
  - Input from the Police, emergency services and other stakeholders to encourage compliance from these parties.
- Auditing: Describe the Contractor's methodology for undertaking Traffic Management Plan audits of the Contractor's and third party works. This shall include the audit frequency, actions to be taken and how lessons learnt are incorporated back into the process.



- Benchmarking: Define the procedures for annual benchmarking of the potential effects of the Contractor's activities on customer travel time and reliability.
- Continual Improvement: Detail how continual improvement will be applied to the Contractor's services such as use of auditing, process improvements, innovation registers, non-compliance and other learnings throughout the contract period.

#### 4.4.3 Customer and Stakeholder Management Plan

The Contractor shall, at minimum, cover the following components within their CSMP:

- Include provision for document issue and authorisation, including review and acceptance of the CSMP by the Principal.
- Describe the Contractor's over-arching customer and stakeholder management policy, objectives and systems, and how these align to the Principal's objectives for the contract, in particular the customer value proposition.
- Roles and Responsibilities: Outline the names, roles, management responsibilities and authorities of personnel involved in the contract. Provide details on the Customer and Stakeholder Manager.
- General Approach to Managing Customers, Stakeholders and Communications: Outline the Contractor's general approach to management of customers, stakeholders and communications under this contract including outlining the supporting systems for implementing the contract. Provide examples of a range of general contract activities and the proposed communications approach for each (including those for low cost/low risk and minor safety works). Discuss the process for the Customer and Stakeholder Manager to be involved in influencing the Contractor's operations to ensure the customer value proposition is upheld.
- Māori Engagement Sub-Plan: Outline the plan on how Māori shall be engaged. Details shall include:
  - Identification of iwi/hapu within the Network, including their contact person(s) and details,
  - Any statutory acknowledgement areas for those iwi/hapu who have completed treaty settlements,
  - Identification of where the marae or other significant Māori interests are located within the Network,
  - Methods and processes to engage with Maori,
  - Identification of what issues Maori are either not informed of or informed of or discussed with e.g. minor works, minor works in the vicinity of a marae or major works,
  - Reference to any iwi management plans relevant to the Network, and
  - Any other relevant matters.
- Unplanned Events: Outline intended communications methodology for managing stakeholders and communications for unplanned events (include immediate emergency response as well as longer term remediation/repair communications).

- **Communication Protocols:** Define the stakeholder communication protocols according to the Principal's requirements.
- **Public Engagement:** Provide linkage to the Principal's Public Engagement Manual and how the Contractor intends to support it.
- **Media Management:** Define communications protocols according to the Principal's requirements.
- **CRM:** Explain the integration of the Principal's CRM system (refer Section 5.4.2 of the Maintenance Specification) into the Contractor's processes and procedures.
- **Records of Communication:** Outline how the Contractor will document contract records and communication management.
- **Network Controls:** Outline the Network controls management systems and procedures.
- **Continual Improvement:** Detail how continual improvement will be applied to the Contractor's services such as use of auditing, process improvements, innovation registers, non-compliance and other learnings throughout the Contract Period.

#### 4.4.4 Maintenance Management Plan

The Contractor shall, at minimum, cover the following components within their MMP:

##### Strategic

- How the Contractor will proactively retain renewal investment levels within the quantities available under the contract, seeking to reduce these where appropriate, and how these quantities together with an appropriate mix of planned, reactive and preventive maintenance will be applied to improve the value for money performance of the existing network.
- How the contractor will manage shared-risk elements of the services.
- How the Contractor will optimise maintenance activities across the different classifications assigned across the network.
- Use of data in decision making and achieving advanced asset management
- Linkage with Quality Management Plan.
- Resource management. Impacts of optimised service level and classification influences on the positioning and allocation of resources.
- Sustainability of Asset Management resource. How competency and capability of Asset Management resources will be maintained to ensure delivery of the MMP.
- Environmental impacts. How the Contractor can demonstrate maintenance and renewals can be optimised to reduce greenhouse gas emissions.
- Critical success factors themes. Focussing on key themes that are critical to achieving the strategic intent of the MMP and the outcomes expected.
- Proposed measures and targets. May be detailed under performance management where there are overlaps.

## Development and Maintenance of Forward Works Programmes

**Note:** Tenderers are expected to provide some linkage between current performance and target outcomes and the processes that will be utilised. This includes Tenderers Drainage and Economic decision-making justification process. Under the heading Drainage Strategies, bullet Forward works programming – Tenderers are expected to provide the methodologies and processes that will be used to integrate the drainage forward works programme with the programme for other asset maintenance and renewals.

- Detailing the process for developing a long term forward view of needs over a 10-year planning period for all assets including:
  - Pavements and surfacing
  - Drainage systems including pavement drainage
  - High value assets (Railings and barriers, minor structures, large signs etc.)
  - Other assets
- The use of performance modelling.
- Optimising against classification.

The following programme management topics overlap with the strategic sections for pavements, surfacing and drainage sections where the focus is more on short-term programming, but the discussion must cover all assets.

- Failure mode analysis
- Programming, risk management and prioritisation
- Periodic treatment justification process
- Methodology used for project level NPV analysis for pavement renewals
- MIS strategy development as per SM020
- Programme delivery and post-review processes

In the strategic sections that follow, discussion on analysis, prioritisation and programming relate to short term programming. The long-term programming needs are covered in the previous section. There is clearly a linkage between these that should be explained in the MMP.

## Pavement Strategies

Management of the short terms renewal programme. How the upcoming and three year programme is drawn from the long-term forward works programme, the validation and

prioritisation process that will be applied, treatment selection etc., and the feedback loop to the long-term programme.

- Short term Forward Works programming
- Detailed treatment selection methodology
- Identification of preventive maintenance opportunities
- The impact of pavement classification
- Pavement preservation strategy delivery to the right level of service to optimise network performance and maximise the life of existing assets
- Pavement design methodologies
- Treatment investigation (binder/stone analysis etc.).

### Surfacing Strategies

Management of the short terms renewal programme. How the upcoming and three year programme is drawn from the long-term forward works programme, the validation and prioritisation process that will be applied, treatment selection etc., and the feedback loop to the long-term programme.

- Surfacing preservation strategy delivery to the right level of service to optimise network performance and maximise the life of existing assets
- Short-term Forward Works programming
- Surfacing treatment selection process
- First coat/second coat sealing strategies
- SCRIM exception report and Skid Assessment Length management including how the preservation programme will be managed to minimise SCRIM exceptions.
- Resurfacing design process
- Material selection (e.g. skid resistance performance)
- Urban treatment including environmental treatment cost minimisation
- Strategies for high traffic demand environments
- Material application, for example intended use of emulsion and PMBs.

### Drainage Strategies

Management of the short terms renewal programme. How the upcoming and three year programme is drawn from the long-term forward works programme, the validation and prioritisation process that will be applied, treatment selection etc., and the feedback loop to the long term programme.

- Condition Monitoring
- Analysis and Prioritisation



- Short term Forward Works programming
- Input into maximising life of pavement and surfacing assets.

### **Maintenance Activity Requirements**

- Integration of maintenance activities
- The impact of classification
- Intervention strategies and thresholds
- Monthly and annual programming procedures
- Cyclic maintenance management
- Inspection and defect management
- Treatment selection process and repair methods
- Programming and management of preventive maintenance work
- Maintenance design process
- Material selection criteria
- Equipment sizing considerations (to minimise pavement effects)
- Standard operating procedures for maintenance activities
- Maintenance activity delivery
- Defect liability management
- Implementation of the MIS.

### **Annual Planning**

- Detailing how the outcomes of the MMP processes will be utilised to create the annual plan submission and network statement. Covering how the requirements for both the renewals programme, routine maintenance and operational activities will be determined, and how the business case will be prepared to substantiate the funding request. The methodology must take account of the Roadway Efficiency Group (REG) initiatives.

### **Maintenance Performance Management**

- Utilising data trend analysis
- Monitoring network performance
- Monitoring the effectiveness of the MMP
- Monitoring maintenance effectiveness
- Monitoring the effectiveness of the MIS



- The use of maintenance cost activity in decision making.

### Continuous Improvement

- How the Contractor will audit the implementation of Asset Management disciplines within their organisation where the MMP is a component and utilise the outcomes of these audits to continuously improve the MMP.
- Demonstrate alignment with the Treasury ICR Asset Management Maturity components.
- How the Contractor will share and manage best practice of Asset Management disciplines across their organisation to align with the context of nationally developed, locally delivered.
- How will consistency be achieved across multiple NOC contracts held by the Contractor.

### Baseline Plans

- The Baseline Pavement Rehabilitation Plan, stating the Contractor's tender planned annual quantities for the contract duration.
- The Baseline Resurfacing Plan, stating the Contractor's tender planned annual quantities for the contract duration clearly itemising chip seal lengths from asphalt concrete lengths.

## 4.4.5 Environmental and Social Management Plan (ESMP)

### 4.4.5.1 Vegetation Management Sub-plan

A key component of the ESMP will be the need for a vegetation management section. The purpose of the vegetation management sub-plan is to set out how the Contractor shall manage landscape assets and improved performance outcomes to meet their statutory requirements and the Principal's expectations. The sub-plan is to be consistent with the relevant regulatory authority and the Principal's national guidelines and specification that are applicable.

Typical detail shall include:

1. Statutory and non-statutory obligations, agreements with regulatory authorities and the Principal.
2. Management of landscape assets in line with national guidelines including methodologies for vegetation management (including vegetation maintenance and control activities).
3. Tree management and arboriculture (including hazardous tree identification).
4. Vegetation and amenity areas within urban areas and stopping places.

5. Protection of indigenous vegetation and identified habitat areas such as Type 8 vegetation control areas.
6. Recognition of cultural landscape values and sites of significance to Iwi.
7. Annual sub-plan review and meeting with the regulatory authority and the Principal.
8. Site inspections, performance monitoring and reporting.

Pest plant management shall be addressed by the Contractor in their Pest Management sub-plan. Guidance on vegetation management may be issued during the contract period. The Principal shall make the Contractor aware of new documentation as it comes to hand.

#### 4.4.5.2 Pest Management Sub-plan

Another key component of the ESMP will be the need for a pest management section. The purpose of the pest management sub-plan is to set out how the Contractor shall manage pest plants to meet their statutory requirements and the Principal's strategic expectations. The sub-plan is to be consistent with the relevant Regional Pest Management Plan and/or agreements with the regulatory authority and the Principal's national strategies that are applicable.

Typical detail shall include:

1. Statutory and non-statutory obligations, agreements with regulatory authorities and the Principal.
2. Pest plant species that shall be targeted.
3. Identification of pest plant risk on neighbouring land.
4. Pest plant management goals and objectives (short, medium, long term)
5. Specific sites of pest management concern such as Type 8 vegetation control areas.
6. Pest control methodologies.
7. Annual pest management plan review and meeting with the regulatory authority and the Principal.
8. Site inspections, performance monitoring and reporting.

Guidance on pest management may be issued during the contract period. The Principal shall make the Contractor aware of new documentation as it comes to hand.

#### 4.4.6 Road Safety Management Plan (RSMP)

##### 4.4.6.1 Safety Management Delineation Sub-plan

A key component of the RSMP will be the need for a safety management delineation strategy Section. The Contractor shall develop and implement a Network Delineation Sub-plan that includes provision for renewals and improvements. The Delineation Sub-plan shall:

- Have the specific objective of using delineation to reduce the incidences of crashes; particularly DSICrashes.
- Include signs, markings, pavement markers, edge marker posts and other delineation devices.
- Identify out of context curves.
- Take into account various factors including but not limited to the needs of specific user groups (e.g. pedestrians, cyclists, motorcyclists, heavy vehicles), signage condition, signage rationalisation, renewals.
- Incorporate delineation aspects of the Principal's applicable road safety strategies.
- Be prepared and updated annually by 1 September.
- Include an Implementation Plan as agreed with the Principal, e.g. what will be implemented, where, timing of implementation.

The safety projects programme shall build on the Delineation Sub-plan.

Note that there are a number of tools available to assist in the development of the Delineation Sub-plan and the safety projects programme, these include:

- Hapai
- Delineation Cost Tool,  
[http://www.ternz.co.nz/Tools%20and%20Products.html#Delineation\\_Cost\\_tool](http://www.ternz.co.nz/Tools%20and%20Products.html#Delineation_Cost_tool)
- Nomographs that illustrate the BCR's for each road classification taking into account the AADT and the type of edge line treatment being installed. These are available on request from National Office.

## 4.5 SENSITIVE ENVIRONMENTAL, SOCIAL AND CULTURAL HERITAGE VEGETATION AREAS

**TABLE 4.5.1: SCHEDULE OF NO SPRAY ZONES**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION
<<to complete>>				

**TABLE 4.5.2: SCHEDULE OF PROTECTED TREES**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION
<<to complete>>				

**TABLE 4.5.3: SCHEDULE OF SENSITIVE SOCIAL AREAS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION
<<to complete>>				

TABLE 4.5.4: SCHEDULE OF CULTURAL HERITAGE AREAS

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION
<<to complete>>				

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## 4.6 SITE SPECIFIC OPERATIONS AND EMERGENCY MANAGEMENT PLANS

**TABLE 4.6: SCHEDULE OF SITE SPECIFIC OPERATIONS AND EMERGENCY MANAGEMENT PLANS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION
<<to complete>>				

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## 4.7 HIGHWAY INCIDENT MANAGEMENT PROTOCOL – MOU

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# Highway incident management protocol

## Memorandum of understanding

between the

**New Zealand Fire Service  
National Rural Fire Authority  
New Zealand Transport Agency  
St John  
Wellington Free Ambulance**

and the

**New Zealand Police**

**This memorandum of understanding** is made

**between** the Chief Executive of the New Zealand Fire Service Commission  
**and** the Chief Executive of the New Zealand Transport Agency  
**and** the Chief Executive of St John  
**and** the Chief Executive of Wellington Free Ambulance  
**and** the Commissioner of the New Zealand Police.

### **Introduction**

1. The New Zealand Fire Service is established and operates under the Fire Service Act 1975. The National Rural Fire Authority operates under the Fire Service Act 1975. The New Zealand Transport Agency is established and operates under the Land Transport Management Act 2003. St John is set up as a charitable organisation. Wellington Free Ambulance is an Incorporated Society, and New Zealand Police is established under and regulated by the Policing Act 2008.
2. The New Zealand Fire Service (NZFS), the National Rural Fire Authority (NRFA), the New Zealand Transport Agency (NZTA), St John, Wellington Free Ambulance and New Zealand Police (Police) (together referred to as '**the parties**') have a current working relationship with one another.
3. The parties wish to enter into this memorandum of understanding to formalise the operational protocols to ensure the effective and efficient management of incidents on New Zealand's Highways.

### **Interpretation**

4. For this memorandum of understanding:
  - 'Incident' means fire, rescue, natural disaster, motor vehicle crash, terrorist act, hazardous substance emergency, highway maintenance, construction or any situation where any of the parties are required to work on or in the vicinity of any of New Zealand's Highways that may impact or distract from the natural flow of traffic.

### **Purpose**

5. The purpose of this memorandum of understanding is to ensure the parties have a common operational protocol to deal with incidents on our highways to ensure the efficient and effective resolution of incidents.
6. The following guidance is based on the philosophy that New Zealand's state highways will not be closed or restricted for any longer than is necessary.

### **Open roads philosophy**

7. Whenever a highway or lane is closed or partially blocked by a crash or incident, the Police, and/or New Zealand Transport Agency will have a prime focus of opening the roadway on an urgent but safe basis that does not put attending staff or the public at risk.
8. Fire and ambulance services will also give this due regard after their prime focus of the protection of life and/or property is dealt with.



9. Responder and public safety are the highest priorities. Highways will be cleared as soon as casualties are removed, appropriate investigative needs are met and hazardous cargo is removed or stabilised.
10. Damage to property may occur as a result of clearing a roadway on an urgent basis. While all parties will make all reasonable efforts to avoid damage to property, clearing a roadway has a higher priority than preventing damage to property.
11. All incidents will be managed under the Co-ordinated Incident Management System (CIMS) model.
12. In general, Police will supply an incident controller, but in instances of fire or chemical spill, the Fire Service will supply the incident controller. The incident controller will be empowered to take whatever decisions are necessary with respect to preservation of evidence for investigations and clearance of vehicles and debris to achieve rapid re-opening of the highway.

### **Agency functions**

#### **Ambulance services**

13. Ambulance Services, as members of Ambulance New Zealand, must:
  - provide timely, appropriate emergency care and where necessary, transport patients to a place of definitive medical care
  - conduct Emergency Ambulance activities (triage, treatment and transport and scene management facilities) in a way that does not put attending staff or the public at risk and minimises the impact on the efficient flow of traffic, and
  - appoint initially, an Ambulance Operations Manager and Triage Officer and depending on incident scale, an Ambulance Commander who will co-ordinate ambulance and medical resources, and fulfil the role of ambulance on-site representative.

#### **New Zealand Fire Service Commission**

14. Fire service must:
  - provide scene protection, extrication and stabilisation of the incident, while having due regard for the environment, the principles as set out in CIMS, and the expedient conclusion of the incident
  - provide an incident controller in cases of fire or hazardous substance incident, and until the arrival of a Police incident controller in other cases
  - understand the need for Police to investigate incidents and consult with Police on actions taken to clear the scene, and
  - conduct fire-fighting or hazardous substance stabilisation activities in a way that does not put attending staff or the public at risk and minimises the impact on the efficient flow of traffic.



**National Rural Fire Authority**

## 15. NRFA must:

- through the audit of Rural Fire Authorities Fire Plan; check that the plans have a requirement to liaise with other emergency service providers (ESP's) in the event of any fire in their area of responsibility to ensure that the management of highway traffic is appropriate given the hazards of the incident.

**New Zealand Transport Agency**

## 16. New Zealand Transport Agency must:

- provide Coordinated Incident Management System (CIMS) - and Site Traffic Management Supervisor (STMS)-trained response teams as rapidly as possible
- prioritise emergency services vehicles through restricted roading, such as road works
- provide containment equipment as required by ESP's for hazardous substances
- provide traffic management at incident sites, and establish and maintain detour routes where available
- provide and keep up-to-date single source contact numbers of New Zealand Transport Agency teams for each Police Communications Centre
- ensure responder/public safety and infrastructure integrity prior to approving the reopening of roads
- provide road clearing and cleaning equipment as necessary, and
- carry out road works and associated activities in a way which minimises the impact on the efficient flow of traffic, and does not put workers or the public at risk.

**New Zealand Police**

## 17. Police must:

- provide scene protection
- provide an incident controller for most incidents. Incidents involving fire or chemical spills will normally be managed by a partner agency as appropriate
- provide an appropriately qualified investigator to complete a thorough examination of the scene, collecting the required evidence to allow the highway to be reopened as soon as possible
- use the most appropriate up-to-date equipment where practicable and best practice training available to collect data at the incident scene, and
- manage crash attendance activities in a way that does not put attending staff or the public at risk and minimises the impact on the efficient flow of traffic.

**All parties**

## 18. All parties must:

- ensure that other ESP's are immediately notified of the incident via national communications centres (**Note:** Police will notify the New Zealand Transport Agency)
- provide up-to-date traffic /delay information (excluding ambulance services) to road users

- clear debris and contribute to making the incident site safe (Ambulance services are not subject to this requirement)
- work with the New Zealand Transport Agency to reopen roads
- attend multi-agency debriefs in a timely manner after serious incidents (which result in a fatality, serious injury, or a significant complete road closure) or where any partner agency recognises the need for improvements in future incident management
- regularly review our performance on incident management, and
- work together to ensure that the needs of motorists on our highways are being met in the most professional and efficient manner.

#### **Effect of this memorandum of understanding**

19. This memorandum of understanding confirms the relationship between the parties based on a spirit of goodwill and co-operation. The parties will work together to achieve the agreed purpose.

#### **Amendment of the memorandum of understanding**

20. The parties agree that from time to time this memorandum of understanding may need to be amended.
21. Reviews, modifications or terminations of this memorandum of understanding may be undertaken by the mutual agreement of the parties representatives listed at paragraph 34 or their delegated staff, so that the master document can be amended.

#### **Training**

22. All agencies must ensure their employees in attendance at highway incidents have received the appropriate level of training as each agency requires.

#### **Sharing information**

23. All agencies must be honest and open in their supply of information and assessment of the incident during any debrief. This ensures incident management standards are maintained and improvements can be identified.

#### **Review of memorandum of understanding**

24. The parties' representatives must meet every three years, to review this memorandum of understanding. Any subsequent amendments may be made pursuant to paragraph 21.
25. The parties' representatives are primarily responsible for ensuring that the intent of this memorandum of understanding is clear, well disseminated and followed.

#### **Issue or dispute resolution**

26. All issues, disputes and differences between the parties about the interpretation or performance of this memorandum of understanding shall, firstly, be attempted to be resolved at the earliest opportunity, locally (by local representatives or managers).



27. Only when matters remain unresolved or require further adjudication should they be referred to the parties representatives listed at paragraph 34.
28. If agreement cannot be reached within 28 days of referral under paragraph 27 above, then the matter must be referred, in writing, to the chief executives of the partner agencies and the Commissioner of Police for final resolution.

#### **Termination**

29. Any party may terminate the memorandum of understanding by giving three months notice in writing to the other parties.

#### **Variation**

30. Except as stated in this memorandum of understanding, it can only be modified by a written agreement duly signed by persons authorised to sign on behalf of the parties hereto.

#### **Conditions**

31. Nothing in this memorandum of understanding makes either party liable for the actions of the other or constitutes any legal relationship between the parties.
32. The provisions in this memorandum of understanding must be read subject to any chief executive, or Cabinet directives, and any enactment.
33. Where there are changes to Government policy which affect the purpose and functions of this memorandum of understanding, each party agrees to inform the other of those changes at the earliest possible time thereafter and agrees to meet to re-negotiate if necessary any aspects of this memorandum of understanding.

#### **Parties' representatives**

34. The parties' specified representatives, addresses, phone and facsimile numbers are:

##### **New Zealand Fire Service**

The Director of Operations and Training and the National Rural Fire Officer  
Level 9  
AXA Building  
80 The Terrace  
PO Box 2133  
Wellington  
Telephone (04) 496 3600  
Facsimile (04) 476 3700

**Signed** by Mike Hall the **Chief Executive of the New Zealand Fire Service Commission**

Signature *BBB*

Name *Paul Baxter*

Date *12/6/12*

**Signed** by Geoff Dangerfield the **Chief Executive of the New Zealand Transport Agency**

Signature *Stephen Town*

Name *STEPHEN TOWN*

Date *20/04/12*

**Signed** by Peter Marshall the **Commissioner of New Zealand Police**

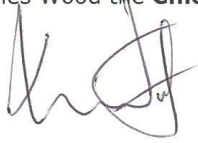
Signature *P Marshall*

Name *MARSHALL*

Date *13/4/12*

**Signed** by Jaimes Wood the **Chief Executive of St John New Zealand**

Signature



Name

Jaimes Wood

Date

18 May 2012

**Signed** by Alan O'Beirne the **Chief Executive of Wellington Free Ambulance**

Signature



Name

ALAN O'BEIRNE

Date

28 May 2012



# 5 Network Management

## 5.1 PAVEMENT REHABILITATION SAFETY ASSESSMENT FORM

### PAVEMENT REHABILITATION: PRE-DESIGN PROJECT SCOPE REVIEW

Region		Network Area	
Road Name		Start Displ.	End Displ.
Road Classification			
Prepared By		Organisation	Date

### GENERAL

Alignment Description			
Typical Lane Width		Typical Shoulder Width	
Part of a Cycle Network?		If Yes, then provide details	
	Death Fatal	Serious	Minor Non-Injury

5-Year Crash Statistics	% Wet	
	General Type	

AADT (vpd)		Speed Limit	
------------	--	-------------	--

Injury Crash Rates / 10 <sup>8</sup> Veh Km	Mid-Block		All	
---	-----------	--	-----	--

KiwiRAP Collective Risk <sup>1</sup>		KiwiRAP Personal Risk <sup>1</sup>		KiwiRAP Star Rating <sup>1</sup>	
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KiwiRAP (KAT) RPS		Head On RPS		Run Off Road RPS		Intersection RPS	
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High Risk Rural Road Guide Treatment Philosophy	
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## DETAILS

	DESIGNER'S RECOMMENDATION	PRINCIPAL'S DECISION
<b>Shoulder Width</b>		
Is widening required along the length? Yes / No		
Is widening required for other transport modes? Yes / No (If yes, refer Appendix 5.2)		
Is widening required on bends? Yes / No		
<b>Feather Edge</b>		

<sup>1</sup> Information can be sourced from the KiwiRAP books or the 5km length ratings from the SafetyNET software.

	DESIGNER'S RECOMMENDATION	PRINCIPAL'S DECISION
Will the finished slope (within the first 2-3m) be less than 4:1? Preferably 5:1 or 6:1. Yes / No Are improvements required?		
<b>Horizontal Alignment</b>		
Are there any substandard / out of context, high risk curves? Yes / No Are improvements required?		
<b>Vertical Alignment</b>		
Are there any substandard vertical curves that create a safety hazard such as restricted sight distances to intersections? Are improvements required?		
<b>Intersections</b>		
Are there any intersections within length? Yes / No Are improvements required such as shoulder widening, channelisation, lighting, RTBs etc.?		
<b>Sight Distance Restrictions</b>		
Are any sight distance improvements required for safety?		
<b>Roadside Hazards</b>		
Are there roadside improvements required? Traversable culvert ends,		

	DESIGNER'S RECOMMENDATION	PRINCIPAL'S DECISION
culvert extensions, tree / pole removals, barrier installations.		

Safety Audits									
Are safety audits warranted?  If not, have exemption forms been completed and attached?	Scheme	Yes / No	Exemption Completed	Design	Yes / No	Exemption Completed	Post Construction	Yes / No	Exemption Completed

**SUMMARY**

Summary of Issues and Improvements	Designer's Recommendation	Principal Decision

**Cost and Funding Implications**

<<insert Network Name>>

Network Outcomes Contract

Contract No: <<insert no>>

NZ Transport Agency

Appendices

<b>Actions Required</b>

<b>Contractor's Safety Representative</b>

<b>Principal's Contract Manager</b>

<b>Date</b>

<b>Date</b>

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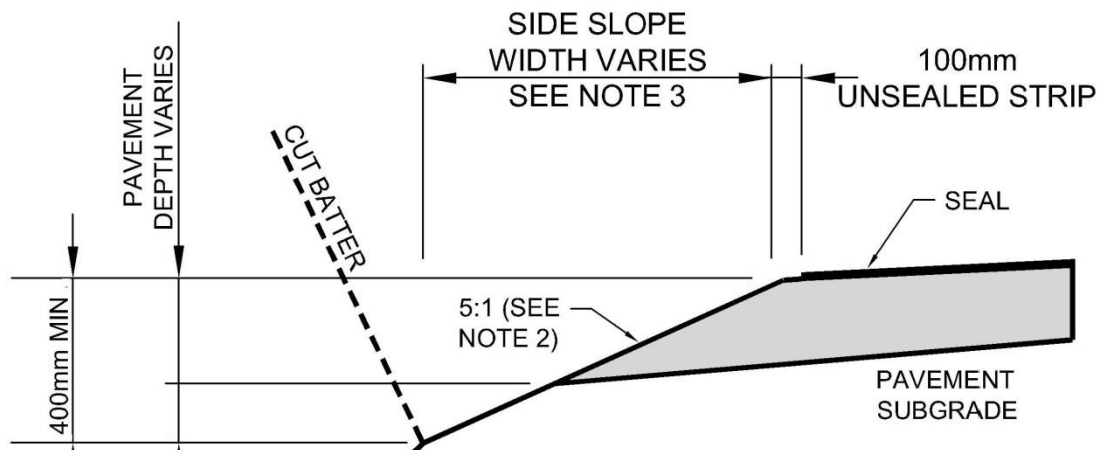


## 5.2 PAVEMENT REHABILITATION AND RESURFACING WIDENING CONSIDERATIONS

WIDENING CONSIDERATION FOR ALTERNATIVE TRANSPORT MODES			
ASPECT	POST SPEED LIMIT		
	50 KM/HR	70 KM/HR	100 KM/HR
Minimum adjacent traffic lane width	3.0 m	3.3 m	3.5 m
Desirable Width	2.0 m	2.0 m	2.2 m
Desirable Minimum Width	1.5 m	1.8 m	2.0 m
Absolute Minimum Width	1.2 m	1.5 m	1.5 m

### 5.3 TYPICAL SHOULDER SLOPE DETAILS FOR PAVEMENT REHABILITATION

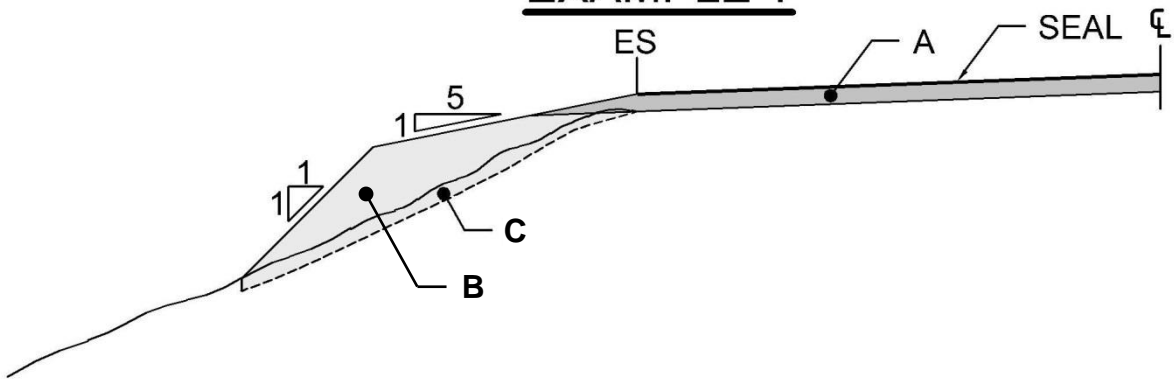
The following diagrams define the extent of shoulder treatment required within the unit rate applicable for each of the base pavement rehabilitations.



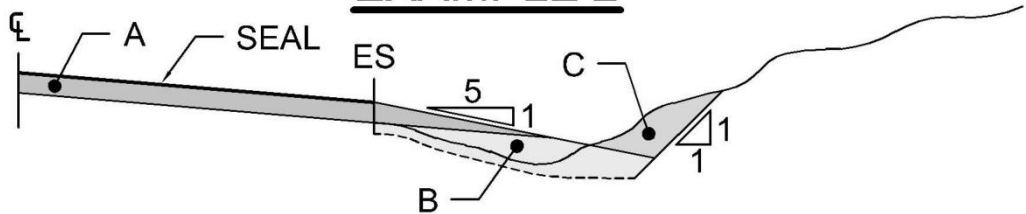
NOTES:

- 1. ADOPT WHICHEVER PROVIDES THE GREATER DEPTH:  
A: 400mm BELOW THE SEAL EDGE, OR  
B: 150mm BELOW THE PAVEMENT-SUBGRADE INTERFACE
- 2. 5:1 SIDE SLOPE MAY BE REDUCED TO AN ABSOLUTE MINIMUM OF 4:1 IN CONSTRAINED LOCATIONS
- 3. THE SIDE SLOPE WIDTH IS DETERMINED BY THE CRITICAL DIMENSIONS GIVEN IN NOTE 1 ABOVE

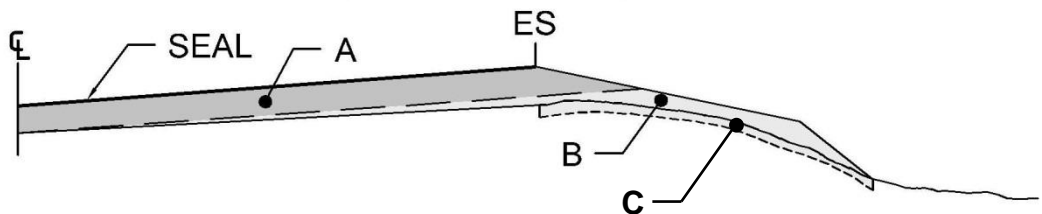
### EXAMPLE 1



### EXAMPLE 2



### EXAMPLE 3



#### KEY:

A

BASECOURSE

B

SOLID FILL

C

CUT TO WASTE or FILL

## NOTES

The solid measure of basecourse to be allowed in the scheduled rate is Area A (as shown in the typical cross-sections) and shall be based on the nominal overlay depth as defined in the Maintenance Specification, Tables 6.1.2 to 6.1.3 within the existing cross-section. This volume shall include the first 0.5m of unsealed shoulder (i.e. to the point where the bottom of the overlay layer meets the new shoulder surface).

For clarity, the tendered base rates shall also allow for the removal of all high lip, shoulder vegetation and all earthworks required to form a 1:5 shoulder slope that extends 2.0m beyond the new edge of seal (thus providing a surface water channel at least 0.4m deep); refer to the areas marked B and/or C on the typical cross-sections.

Area B represents the quantity of materials in excess of that allowed for in the Area A base rate as defined above. Area B therefore provides for additional material to address deep ruts, uneven surface shape, camber or superelevation, filling of dips in the longitudinal profile, additional seal width and /or shoulder fill where it is agreed these improvements are necessary. (i.e. Area B equals (Total volume of basecourse + Total volume of sub-basecourse + Total volume of solid fill) minus (Total volume of Area A Basecourse))

The Area B quantity shall be paid for at the appropriate rates for additional basecourse/sub basecourse or solid fill material.

It is recognised that the typical profiles indicated in examples 1 to 3 are not always achievable or cost effective due to site specific issues or constraints. Amendments will often be required in order to provide a more cost-effective solution. These issues shall be discussed and the outcomes agreed with the Principal prior to completing final design. Examples might include the use of steeper and /or narrower unsealed shoulder slopes in order to best fit the existing formation width, the use of gabion baskets to widen the formation, the use of subsoil drains to avoid extensive earthworks in cuttings and the likes.

Such changes shall be reflected when determining the final quantity associated with Area B. Other agreed solutions shall be at scheduled contract rates or by negotiation where none exist.

## 5.4 SELECTION OF SEALING TREATMENTS

### INTRODUCTION

This document is intended as a guideline to aid the Principal when reviewing the Contractor's submitted Annual Renewals Programme (Annual Plan). The basis of this guide is that there is agreement between the Contractor and the Principal that:

- A chip seal is appropriate
- A chip seal can deliver the desired skid resistance
- Pre-reseal repairs are (or will be) completed prior to sealing in accordance with the requirements of the Maintenance Specification.

### Basic Philosophy

The contract emphasises a consultative and collaborative approach and thus the following guidelines should contribute to this goal.

### THE GUIDE

#### Single Coat Seals

It is the Principal's intention to promote the use of single-coat seals wherever possible; therefore, a single-coat seal should be used unless the traffic stresses are such that the risk is unacceptable. See the risk and stress tables for guidance.

#### Risk Management

It is important that the risks associated with surface treatment are considered. Table 6.4.1 provides a ranking based on an estimate of risk. Those surfacings with three ticks are considered to have a low risk of failure for the particular seal coat, two ticks are higher risk and one tick is the highest risk. Chip seals have been successfully constructed in the areas designated with one tick but care must be applied. Positive traffic control as described in *Chip Sealing in New Zealand: Chapter 11 Practice Note 1* should be considered for all chip seals, but is particularly important in areas where the risks are higher or where a polymer modified binder (PMB) is used.

If a PMB is being considered, then discussion with the Contractor on the type, concentration and performance expectation need to be agreed.

Table 6.4.1 sets a numeric stress factor (1 to 6) for each seal type and Table 6.4.2 relates the numeric stress factor to on-road conditions. Table 6.4.1 does not make a distinction between a raked-in and a two-coat seal. This is to reflect that there is no clear distinction between the amount of stress these seals will accept. Table 6.4.1 should be considered as a guide. It is suggested that local experience be used in the first instance, but it is important not to be overly conservative. For example, if a two-coat seal has been successful previously, it does not mean that a single coat would not also be successful.



**TABLE 5.4.1: RISK TABLE**

SEAL TYPE	STRESS FACTORS					
	1	2	3	4	5	6
Single coat	√√√	√√	√	x	x	x
Single coat + active traffic control	√√√	√√√	√√	x	x	x
Single coat + active traffic control + PMB	√√√	√√√	√√√	√√	x	x
Racked-in	√√√	√√√	√√√	√√	x	x
Racked-in + active traffic control	√√√	√√√	√√√	√√√	√√	x
Racked-in + active traffic control + PMB	√√√	√√√	√√√	√√√	√√√	x
Two Coat	√√√	√√√	√√√	√√	x	x
Two coat + active traffic control	√√√	√√√	√√√	√√√	√√	x
Two coat + active traffic control +PMB	√√√	√√√	√√√	√√√	√√√	x

X Not recommended unless traffic volume and speed is low.

√√√ Should perform satisfactorily

√√ Should be considered, especially at lower traffic volumes

√ Marginal

Table 6.4.1 is presented in order of preference, i.e. the Principal should be applying tension towards the single-coat seals and only selecting more expensive seals if they are justified.

Racked-in seals are preferred to two-coat seals:

- Better customer care can be delivered during seal construction
- Racked-in seals may be marginally less expensive than two-coat seals.

### Stress Table

Table 6.4.2 relates the on-road conditions to numeric stress factors 1 to 6. Thus, there should not be a problem when selecting a single-coat seal for a stress factor of 1. However, it is not recommended that a single coat is used where the stress factor is 4 and above.

**TABLE 5.4.2: CURVE AND GRADIENT STRESS****STRESS FACTORS**

1	2	3	4	5	6
Gradient <5%	Gradient 5–10%	Gradient >10%	Trucks braking (intersections including traffic signals, stop and give way) >50 HCV/l/day	Rural curves 250–400m radius and >10% gradient	Rural and urban curves <250m radius and >10% gradient
One-lane bridge decks (Note: One-lane bridges have <4000 vpd)	Curvature (advisory speed >70km/h)	Curvature (advisory speed >70km/h) and >10% gradient	Approaches to Railway level crossings (high volume roads)	Rural and urban curves (advisory speed 50 – 70 km/h) and >10% gradient	Rural and urban curves (advisory speed 0 – 50 km/h) and >10% gradient
Undivided carriage-ways (event-free).	Rural curves >400m radius	Rural curves 250–400m radius	Railway Crossing 20 – 50 HCV/l/day	Rural and urban curves <250m radius	Approaches to and the circular section of roundabouts >50 HCV/l/day
Divided carriage-ways (event-free).		Rural curves 400m – 800m radius and >10% gradient	Trucks turning (intersection) 20 – 50 HCV/l/day	Rural and urban curves (advisory speed 0 – 50km/h)	
		Rural and urban curves (advisory speed 50 – 70 km/h)	Pedestrian Crossing 20 – 50 HCV/l/day	Approaches to and circular section of roundabouts <50 HCV/l/day	
		Trucks braking (intersections including traffic signals, stop and give way) <50 HCV/l/day		Trucks braking (Pedestrian and Railway Crossings) >50 HCV/l/day	

**TABLE 5.4.2: CURVE AND GRADIENT STRESS**

STRESS FACTORS					
1	2	3	4	5	6
		Approaches to one-lane bridges (Note: One-lane bridges have < 4000 vpd)		Trucks turning (intersection) >50 HCV/l/day	
		Approaches to intersections and on ramps with ramp metering.			
		Trucks braking (Pedestrian and Railway Crossings) <20 HCV/l/day			
		Trucks turning (intersections, commercial driveways) <20 HCV/l/day			
		Motorway junction area (including on/off ramps)			

## Other Considerations

There may be reasons in addition to high stresses for selecting various seal types these include:

- Snow, ice and frost-prone roads – consider a multi-coat seal
- Large macrotexture – consider a void fill
- Large variation in texture – consider a texturiser
- Flushing or smooth-textured pavement surfaces – consider a sandwich seal
- Customer care where there are concerns with traffic delays and to reduce loose chip, pick-up of binder on tyres and tracking – consider using Same Day Sealing as described in *Chip Sealing in New Zealand Chapter 11 Practice Note 2: Racked-in seal to minimise traffic delays during resealing*
- Noise – follow the advice in Guide to state highway road surface noise, Draft v0.6, NZ Transport Agency, January 2013 January 2014.

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## 5.5 STANDARD FORMAT FOR PLANNING ASSESSMENT REPORT

Prior to completing a Planning Assessment Report, discuss the requirements with the Principal's Consents and Approvals Group representative to confirm the level of assessment required.

<i>NTC/ Ref No</i>		<i>Date Received</i>		<i>Due Date</i>	
<i>Case Manager/ Contact Name</i>					
<i>Applicant</i>			<i>Applicant's Consultant</i>		
<i>Brief description of proposal</i>					
<i>Site Location</i>			<i>Displacement</i>		<i>Posted Speed</i>
<i>Road Name</i>		<i>Limited Access Road- CP details</i>		<i>Lane Width (Shoulder Width)</i>	
<i>Local Authority</i>		<i>Crash History</i>			
<i>M &amp; O/ Capital future works in vicinity</i>					
<i>Sight Distances (m) - inc / dec</i>			<i>AADT (vpd)</i>		
<i>Access Standard (existing)</i>			<i>Additional Traffic Generated (vpd) by proposal</i>		
<i>Carriageway Characteristics - (kerb/ channel/ no passing lines etc.)</i>					



<i>Road/ surrounding environment characteristics - alignment etc.</i>	
<i>Any other comments - distance to intersection/ other accesses/ lamp-posts/ electricity poles etc.</i>	
<i>Recommendatio n</i>	
<i>Contractor's Signature</i>	

Appendix – Photos of site

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## 5.6 STATUTORY APPROVALS – RESOURCE CONSENTS AND DESIGNATIONS

An up to date list of current consents and designations is contained within CS-VUE. Please liaise with the Principal’s Consents and Approvals Group to obtain this data.

**TABLE 5.6.1: RESOURCE CONSENTS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	CONSENT NUMBER AND DESCRIPTION
<<to complete>>			

**TABLE 5.6.2: DESIGNATIONS**

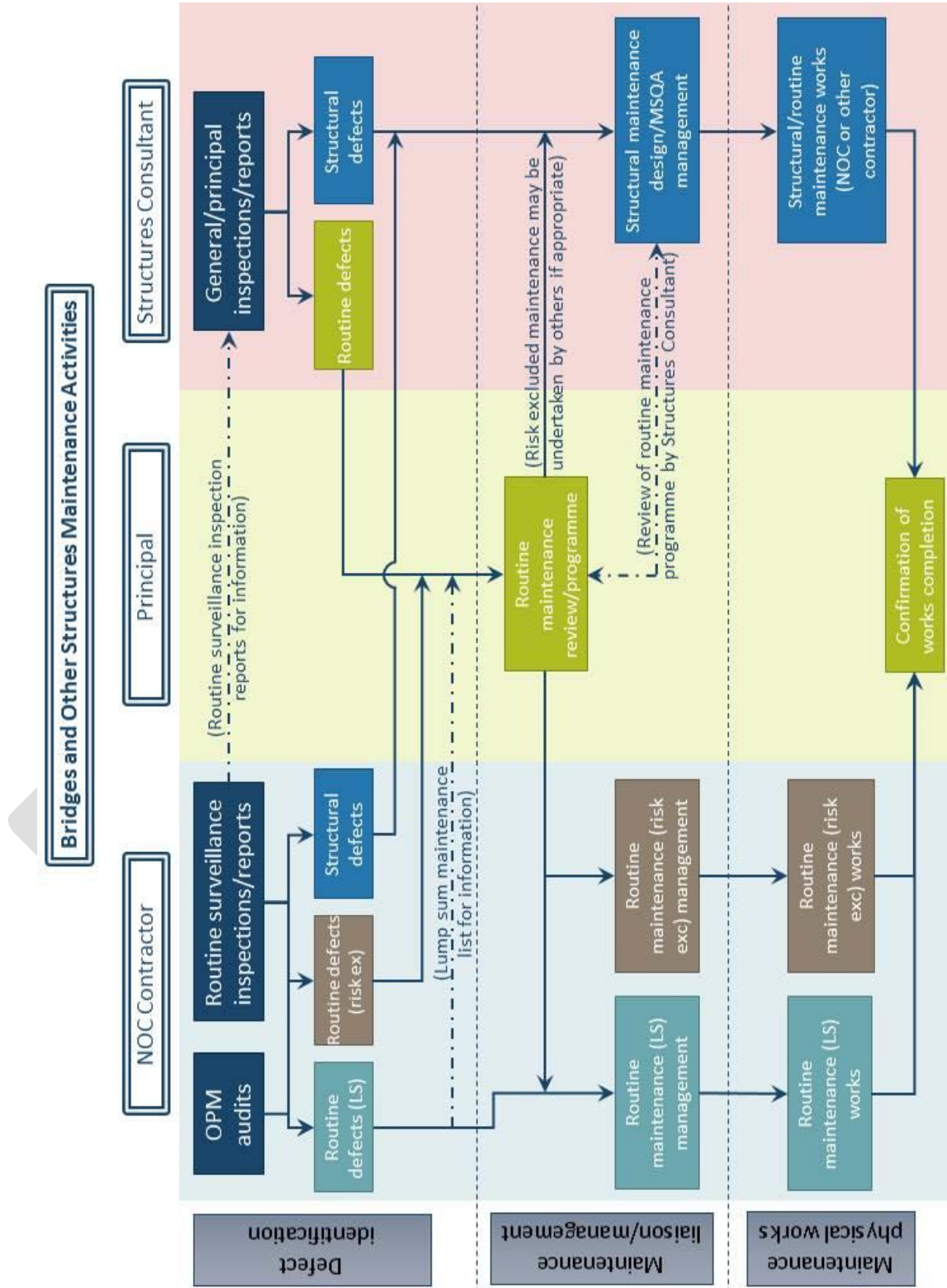
ROAD NAME	START DISPL. (M)	END DISPL. (M)	REFERENCE AND DESCRIPTION
<<to complete>>			

## 5.7 INVENTORY OF BRIDGES AND OTHER STRUCTURES

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## 5.8 BRIDGE AND OTHER STRUCTURE MAINTENANCE ACTIVITIES FLOWCHART



## 5.9 DEATH FATAL AND SERIOUS INJURY CRASH REPORTS

The following table is an example of the content for a death fatal and or serious injury crash report.

<i>Reference Number</i>	<b>XXX</b>			
<i>Type of Crash</i>	<b>Death Fatal or Serious Injury</b>			
<i>Advice to Principal</i>	Maintenance Contract Manager of Principal and Location was notified on day/date at time by Contractor Name			
<i>Road Name</i>	State Highway XX			
<i>Crash Location</i>	Location of crash in terms of LRMS and local names			
<i>Date of Crash</i>	Date of crash	<i>Notified Date</i>	Notified date of crash	
<i>Time of Crash</i>	Time of crash	<i>Notified Time</i>	Notified time of crash	
<i>Direction of Travel</i>	Explanation of vehicles and movements			
<i>Injury Severity</i>	Number of deaths fatal and serious injuries			
<i>Number of Vehicles involved</i>	Number of vehicles involved			
<i>Vehicle Type and Driver Details</i>	Vehicle make, model, registration number(s) and driver details such as name and age for all vehicles involved			
<i>Description of Crash</i>	Description of apparent sequence of events			
<i>Possible Causes</i>	Possible causes			
<i>Incident Management</i>	<i>Authority</i>	<i>Closure Type</i>	<i>Time Implemented</i>	<i>Actual Duration</i>
	Police etc.	Full / Partial	Time closure was implemented	Duration of closure
<i>Detour Implemented</i>	Details of roads/streets utilised and any signage e.g. speed and direction			
<i>Damage to assets</i>	Explanation of damage to any of the Principal's assets			
<i>Repair Work Required</i>	Explanation of any repair work required and likely costs			



<i>Weather Conditions</i>	Weather conditions at time of crash		
<i>Road Condition</i>	Condition of road at time of crash		
<i>Cross-section at Point of Impact</i>	Explanation of the road lane and shoulder widths		
<i>Vertical Geometry</i>	Explanation of the road vertical geometry		
<i>Horizontal Geometry</i>	Explanation of the road horizontal geometry		
<i>Junction Control</i>	Explanation of any junction layouts and control		
<i>Speed Limit</i>	Speed limit and operating speeds	<i>Was Speed a Factor?</i>	Yes or No
<i>Road Factors Involved</i>	Explanation of the road factors involved		
<i>Environmental Factors Involved</i>	Explanation of the environmental factors involved		
<i>Pavement Marking</i>	Explanation of the pavement marking	<i>Condition?</i>	Good, Poor
<i>Signage</i>	Explanation of the signage	<i>Condition?</i>	Good, Poor
<i>Surface</i>	Explanation of the road surface	<i>Condition?</i>	Good, Poor
<i>Lighting</i>	Explanation of any lighting in the vicinity	<i>Condition?</i>	Good, Poor
<i>Hazards</i>	Explanation of any hazards such as culverts within the vicinity	<i>Condition?</i>	Good, Poor
<i>Crash History</i>	A record of crashes that have occurred historically near this location  Only to be completed for death fatal and serious injury crashes		
<i>Completed and Proposed Works</i>	Explanation of historical works such as resealing and what is proposed in accordance with the forward works programme		
<i>Discussion</i>	Discussion resulting from the crash and information available		
<i>Conclusions</i>	Conclusions made from the crash		

*Recommendations*

Recommendations for the Principal

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<i>Prepared By</i>	Name of person who prepared report
<i>Reviewed By</i>	Name of person who reviewed report
<i>Approved for issue By</i>	Name of person who can approve the report to be issued to the Principal

APPENDIX A – PHOTOGRAPHS

APPENDIX B – MAP or AERIAL PHOTOGRAPHY (at 1:10,000 or similar)

APPENDIX C – POLICE **DEATH** ~~FATAL~~ TRAFFIC INCIDENT REPORT (if available)

APPENDIX D – CRASH HISTORY

APPENDIX E – SKID RESISTANCE ANALYSIS GRAPHS (if appropriate)

APPENDIX F – FORWARD WORKS PROGRAMME (if appropriate)

APPENDIX G – MEDIA ARTICLES (if available)

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## 5.10 GEOLOGICAL HAZARD SITE INSPECTION REGISTER

TABLE 5.3: REGISTER OF GEOLOGICAL HAZARD SITES

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION	REPORTING INTERVAL INSPECTION INTERVAL AND SCOPE
<<to complete>>					

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## 6 Physical Works

### 6.1 GUIDE TO AUDITING PAVEMENT AND SURFACING RENEWALS

#### Introduction

This document has a number of purposes:

- To be an internal guideline for the Principal
- To give the Contractor transparency and insight into the Principal's involvement in auditing pavement and surfacing renewals
- To aid the Contractor in working collaboratively with the Principal in developing appropriate quality plans for pavement and surfacing renewals in order to ensure that an appropriate level of quality is assured.

The guide amplifies that the Principal will audit the Contractor's physical works processes, both on site and off site, and the Principal will also be involved in the Contractor's own quality auditing processes. The level of Principal auditing is related to the confidence that the Principal has in obtaining a quality outcome. Therefore, it would be expected that the level of auditing at the beginning of the Contract Period will be more intense until the Principal is satisfied that a quality product is being delivered by the Contractor in their own right.

The Contract Document emphasises a consultative and collaborative approach and thus the guidelines in this document contribute to this goal.

#### Basic Philosophy

The delivery of pavement and surfacing renewals within this contract involves a collaborative design process, measure and value payment for works undertaken, followed by measurable post-construction outcome expectations. The outcome expectations are supported by potential penalties for non-performance. This places a level of risk and ownership on the Contractor.

It should not be expected that these measured renewal outcome expectations alone will deliver the textbook required result for the Principal. The development and adherence to appropriate quality assurance procedures based on best practice will be required to complement the outcome renewal elements of the contract. The Principal has a desire to be involved in the Contractor's renewal quality management process for development and implementation.

For each pavement rehabilitation site, the Contractor is required to develop a Rehabilitation Quality Plan (RQP) as in Section 6 of the Maintenance Specification. For each surfacing renewal programme the Contractor is required to develop a Resurfacing Quality Plan in accordance with Section 6 of the Maintenance Specification. The Principal will seek every opportunity to work with the Contractor to collaboratively develop these plans for each site/programme. The RQPs will set out the auditing, inspection, testing and hold points within the Contractor's construction process to



ensure that the required quality is obtained. The contract permits a coordinated development process for these plans, and the Principal will therefore proactively take this opportunity to ensure these plans:

- Follow current best practice
- Will deliver the necessary end product quality confidence levels
- Have appropriate reporting provisions
- Are achievable (believable/realistic)
- Match the designed treatment requirements and project risks
- Enable active participation of the Principal on Site, at critical stages during construction
- Provide the Principal with visibility of key information off Site, at critical stages prior to and during construction.

Typically, construction quality plans consist of a mixture of **hold** and **inspection** points. The Principal can be actively involved on Site and included in key information flows by being stated as a hold or inspection point party within the RQPs.

The Principal needs to adopt a collaborative approach when working with the Contractor, particularly being mindful of the risk that the Contractor is required to manage within their lump sum responsibilities.

For guidance, the following definitions are provided, which can be expected to be contained within the structure of the Contractor's RQPs.

### 1. **Hold Points**

A hold point is applicable where there is vulnerability in the process and it is vital that a particular stage of the production and/or construction of road materials meet specification/contract requirements. Hold points shall be carried out by a nominated person. This person should have authority to stop the process if deemed necessary.

### 2. **Inspection Points**

An Inspection point is applicable where there is vulnerability in the process and it is vital that a particular stage of the production and/or construction of road materials meet specification/contract requirements. Inspections shall be carried out by a qualified person representing the Principal. This person should have authority to stop the process if deemed necessary.

### 3. **Frequency of Inspection**

As already indicated, once confidence has been gained in the quality of the Contractor's product, the audit rate may be decreased. Alternatively, if there is reason to believe risk of non-compliance is greater than acceptable, then the audit rate should be increased. The decision on the audit rate lies with the Principal.

## **Process Outline**

The generic process is depicted in Figure 6.1.1.

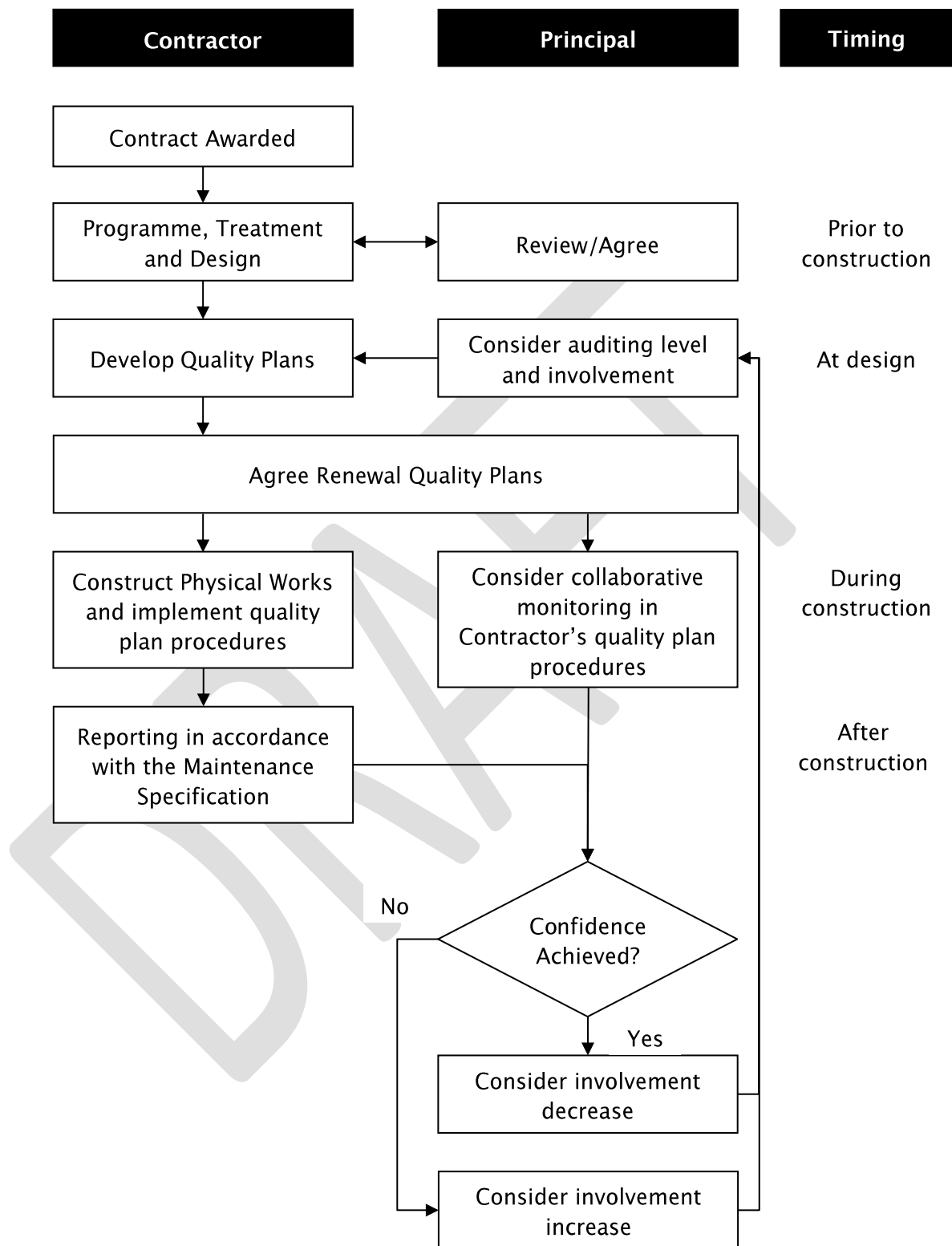


Figure 6.1.1: Inspection Flow Chart

## Hold and Inspection Points

Based on the information in the following pages, local knowledge and previous experience with the Contractor, the Principal will develop a list of hold and inspection points for a sample of the renewals.

The Principal will discuss these with the Contractor so that there is understanding between the parties of the important elements in the project and how they are to be addressed.

The Principal has the authority in extreme cases to stop any operation.

*For example, if the Contractor's Quality Plan had a minimum lay down paving temperature of say 130C and the mix was 100C, then the Principal could insist that the material should not be laid as the probability of achieving the specified density would be low. It would be expected that the Contractor would also issue an explanation of why the mix had been delivered outside the accepted temperature limit.*

*This situation should be covered by the Contractor's own quality plan.*

It is expected that there will be very few occasions where the Principal would need to stop operations.

There are contentious situations such as the sealing of a basecourse when the weather conditions are changeable. The basecourse may not have dried back to the agreed percentage saturation, but the Contractor wishes to seal the surface to protect it from expected rain. These types of issue should be identified in the Site-specific plan and agreement reached with the Principal.

## Feedback and Improvement

The Contractor and Principal should be communicating regularly on quality aspects; therefore, a feedback loop is required to ensure that lessons learnt are incorporated in future jobs.

## Example Process Details

The tables below provide examples of typical quality process steps that can be expected to be included within the Contractor's Rehabilitation and Resurfacing Quality Plans.

The quality plan processes will cover the design, material selection and the construction phases. These should be considered as an initial guide and the Principal has the opportunity to work collaboratively with the Contractor to develop project-specific audit criteria including Principal participation.

**TABLE 6.1.1: CHIP SEALS**

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
Design	Type of seal and site acceptance	Hold point	Principal agrees with Contractor on the seal type and performance requirements for the site.	
Material	Binder	Hold point	Q/C agree for PMB	
	Chip	Hold point	ALD of stockpile PSV complying with Transport Agency M/6 and seal design	
Construction	longitudinal overlap of spray runs	Inspection point		
	Chip application rates	Inspection point		
Clean up	Loose chip	Inspection point		Important for "Customer First"
Post Construction	Traffic speeds	Inspection point		Seal protection

**TABLE 6.1.2: DENSE ASPHALT CONCRETE**

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
Design	Mix type and maximum aggregate size, minimum thickness and binder type	Hold point	Principal agrees with the mix type and size, minimum thickness and binder type taking into account macrotexture requirements. Is consistent with the pavement design	

**TABLE 6.1.2: DENSE ASPHALT CONCRETE**

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
	Mix design	Hold point	Confirmation that the design is current and complies with Transport Agency M/10	
Material	Binder	Hold point	Q/C agree for PMB	PMBs are not covered by a Transport Agency specification and the Q/C properties must be agreed
	Aggregate	Hold point	PSV complying with Transport Agency M/6	
Production		Hold point	Confirmation of Q/C testing that will be performed	In addition to binder content and grading, close attention should be paid to air voids on production sample compacted in the laboratory to the same level of compaction used in design.
Construction	Paving plan	Hold point		Ensure joints are located to optimise ride quality and to avoid wheelpaths.
	Segregation	Inspection point		
	Delivery Temperatures	Inspection point		
	Roller size	Inspection point		
	Rolling pattern	Inspection point	Ensure pattern is in conformance of Quality Plan for thin layers	In Transport Agency M/10 thin layers are not cored and thus inspection is required to ensure sufficient rolling is obtained
	Joint construction	Inspection point	Ensure construction is in accordance with Quality Plan	



**TABLE 6.1.2: DENSE ASPHALT CONCRETE**

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
	Thickness	Inspection point		
	Random sampling plan for cores	Hold point	Random sampling locations for cores must be developed before paving commences	Ensure joint cores are also taken

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TABLE 6.1.3: OGPA

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
Design	Mix type, maximum aggregate size, minimum thickness and binder	Hold point	Principal agrees with the mix type, size, minimum thickness and whether PMB is to be used	
	Mix design	Hold point	Confirmation that the design is current and complies with Transport Agency P/11	
Material	Binder	Hold point	Q/C agree for PMB	PMBs are not covered by a Transport Agency specification and the Q/C properties must be agreed
	Aggregate	Hold point	PSV complying with Transport Agency M/6	
Production		Hold point	Confirmation of Q/C testing that will be performed	
Construction	Segregation	Inspection point		Visually check for excessive binder drain down in bottom of trucks
	Delivery Temperatures	Inspection point		
	Paving plan	Inspection point	Ensure pattern is in conformance of Quality Plan for thin layers	
	Rolling pattern	Inspection point	Ensure construction is in accordance with Quality Plan	In Transport Agency P/11 layers are not cored and thus inspection is required to ensure sufficient rolling is obtained
	Joint construction	Inspection point		

TABLE 6.1.3: OGPA

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
	Thickness	Inspection point	Confirm minimum thickness is being achieved	OGPA is not normally cored, so thickness needs to be observed between paving runs or thickness measured by probing prior to compaction.
	Finish	Inspection point	Finish in terms of shape, even texture etc.	

TABLE 6.1.4: SMA

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
Design	Mix type, maximum aggregate size, thickness, and binder	Hold point	Principal agrees with the mix type and size, minimum mix thickness and whether PMB is to be used	
	Mix design	Hold point	Confirmation that the design is current and complies with Transport Agency M/10	
Material	Binder	Hold point	Q/C agree for PMB	PMBs are not covered by a Transport Agency specification and the Q/C properties must be agreed
	Aggregate	Hold point	PSV complying with Transport Agency M/6	

TABLE 6.1.4: SMA

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
Production		Inspection point	Confirmation of Q/C testing that will be performed	In addition to binder content and grading, close attention should be paid to air voids on production sample compacted in the laboratory to the same level of compaction used in design. Also consider binder drain down test on production samples.
Construction	Segregation	Inspection point		
	Delivery Temperatures	Inspection point	as per Quality Plan	
	Roller size	Inspection point	as per Quality Plan	
	Paving plan	Inspection point	as per Quality Plan	
	Rolling pattern	Inspection point	as per Quality Plan	
	Joint construction	Inspection point	as per Quality Plan	
	Random sampling cores	Hold point	Random sampling locations for cores must be developed before paving commences	Ensure joint cores are also taken
	Thickness	Inspection point	Confirm that in situ density and thickness is being achieved	
	Finish	Inspection point	Finish in terms of shape, even texture etc.	

**TABLE 6.1.5: GRANULAR BASECOURSE AND SUB-BASECOURSE**

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
Quality Plan		Hold Point		
Material	Crushing resistance fines properties	Hold point	Source properties meet Transport Agency M/4 or Transport Agency M/3	
	Grading, broken faces, fines properties	Hold point	Production properties meet Transport Agency M/4	
	MDD and optimum Moisture content	Hold point	Ensure test results are consistent and are based on a grading similar to current production	Ensure solid density is current
Construction	Density and degree of saturation	Hold point	Meet specification requirements	
	Surface finish	Inspection point	Swept, tight surface	

**TABLE 6.1.6: MODIFIED BASECOURSE AND SUB-BASECOURSE**

Stage	Area	Inspection / Hold point	Action	Comment
Design		Hold Point	The test results and rationale for the additive and its percentage	
Quality Plan		Hold Point	Include any specific details for the seal	
Daily Production Plan		Hold Point		
Material	Aggregate source properties	Hold point	Only for imported aggregates not in situ	



**TABLE 6.1.6: MODIFIED BASECOURSE AND SUB-BASECOURSE**

Stage	Area	Inspection / Hold point	Action	Comment
	Grading, broken faces, fines properties	Hold point	For imported materials	
Construction	Additive concentration	Inspection point	Testing for ensuring correct additive concentration	
	Mixing	Inspection point	Ensure adequate in situ mixing and depth	
	Roller	Inspection point	Roller size is as per Quality Plan	
	Density and degree of saturation	Inspection point	Meets specification requirements	
	Surface finish	Inspection point	Swept, tight surface	

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**TABLE 6.1.7: BOUND SUB-BASECOURSE**

STAGE	AREA	INSPECTION / HOLD POINT	ACTION	COMMENT
Design		Hold point	The assumptions in the pavement design are known	
Quality Plan		Hold point		
Material	Material design	Hold Point	The test results and rationale for the additive and its percentage. The test results are consistent with the pavement design	
Production	Additive concentration	Inspection point	Testing for ensuring correct additive concentration	
	Mixing	Inspection point	Ensure adequate in situ mixing and depth	
Construction	Roller	Inspection point	Roller size is as per Quality Plan	
	Density and degree of saturation	Inspection point	Meets specification requirements	

**Other Areas**

Any surfacings, materials and/or construction processes proposed by the Contractor that do not have a Transport Agency specification should be accompanied by:

- Evidence from the Contractor of reliability
- A proposed performance specification
- Proposed quality measures.

These shall be agreed with the Principal prior to finalisation of the Site-specific Quality Plan.

## 6.2 VULNERABLE FLOODING AREAS AND DRAINAGE ASSETS

For vulnerable flooding areas, the stated levels of service in Maintenance Specification, Section 6.4 shall apply for all assets within the vulnerable flooding areas extents.

**TABLE 6.2.1: VULNERABLE FLOODING AREAS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	DESCRIPTION
<<to complete>>			

**TABLE 6.2.2: VULNERABLE DRAINAGE ASSETS**

ROAD NAME	DISPL. (M)	ASSET	DESCRIPTION
<<to complete>>			

### 6.3 CULVERTS, SUBSOIL, AND HORIZONTAL DRAINS AND OUTFALL CONTROL DEVICES MAINTENANCE SCHEDULE

**TABLE 6.3: CULVERTS, SUBSOIL, AND HORIZONTAL DRAINS AND OUTFALL CONTROL DEVICES MAINTENANCE SCHEDULE**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	MAINTENANCE REQUIREMENTS
<<to complete>>			

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## 6.4 WATER QUALITY AND RETENTION ASSETS MAINTENANCE SCHEDULE

TABLE 6.4 WATER QUALITY AND RETENTION ASSETS MAINTENANCE SCHEDULE

ROAD NAME	DISPL. (M)	LOCATION	MAINTENANCE REQUIREMENTS
<<to complete>>			

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## 6.5 DEBRIS CATCH FENCE SCHEDULE

TABLE 6.5: DEBRIS CATCH FENCE SCHEDULE

ROAD NAME	START DISPL. (M)	END DISPL. (M)	ASSET DESCRIPTION
<<to complete>>			

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## 6.6 GRAFFITI VISIBLE FROM THE RAILWAY

Listed below are structures adjacent or visible from the railway. The list also indicates those structures that have been vandalised with graffiti in the last two years.

TABLE 6.6: DEBRIS CATCH FENCE SCHEDULE

STRUCTURE NAME / REFERENCE	VANDALISED WITHIN THE LAST TWO YEARS (YES/NO)
<<to complete>>	

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## 6.7 WINTER SERVICES REQUIREMENTS

<<Attach Winter Services Requirements>>

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## 6.8 WINTER SERVICE TARGETS AND INDICATIVE QUANTITIES

<<Attach Winter Services Targets and Indicative Quantities>>

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## 6.9 TYPE OF VEGETATION CONTROL

**TABLE 6.9.1: VEGETATION CONTROL - GENERAL**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	CONTROL TYPES	COMMENTS
<<to complete>>					

**TABLE 6.9.2: VEGETATION CONTROL - STOPPING PLACES/REST AREAS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	CONTROL TYPES	COMMENTS
<<to complete>>					

**TABLE 6.9.3: VEGETATION CONTROL - LOCAL MANAGEMENT PLAN AREAS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	CONTROL TYPES	COMMENTS
<<to complete and include relevant local management plans >>					



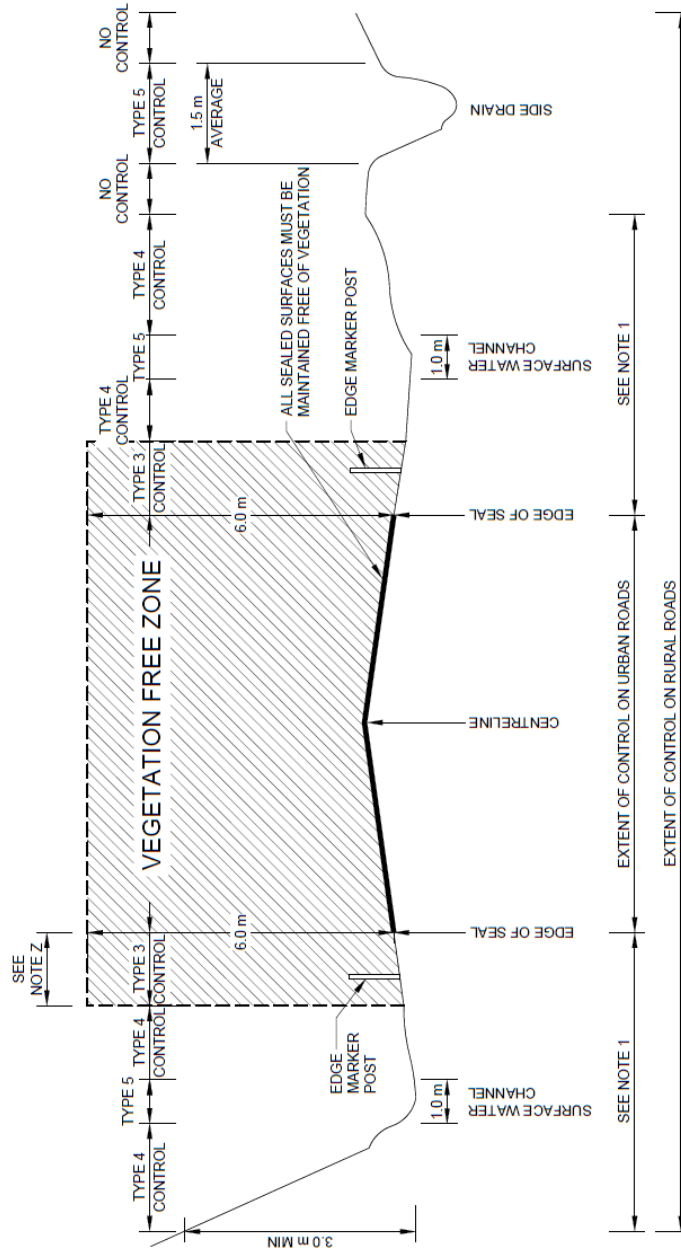
**TABLE 6.9.4: VEGETATION CONTROL - MISCELLANEOUS AREAS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	CONTROL TYPES	COMMENTS
<<to complete>>					

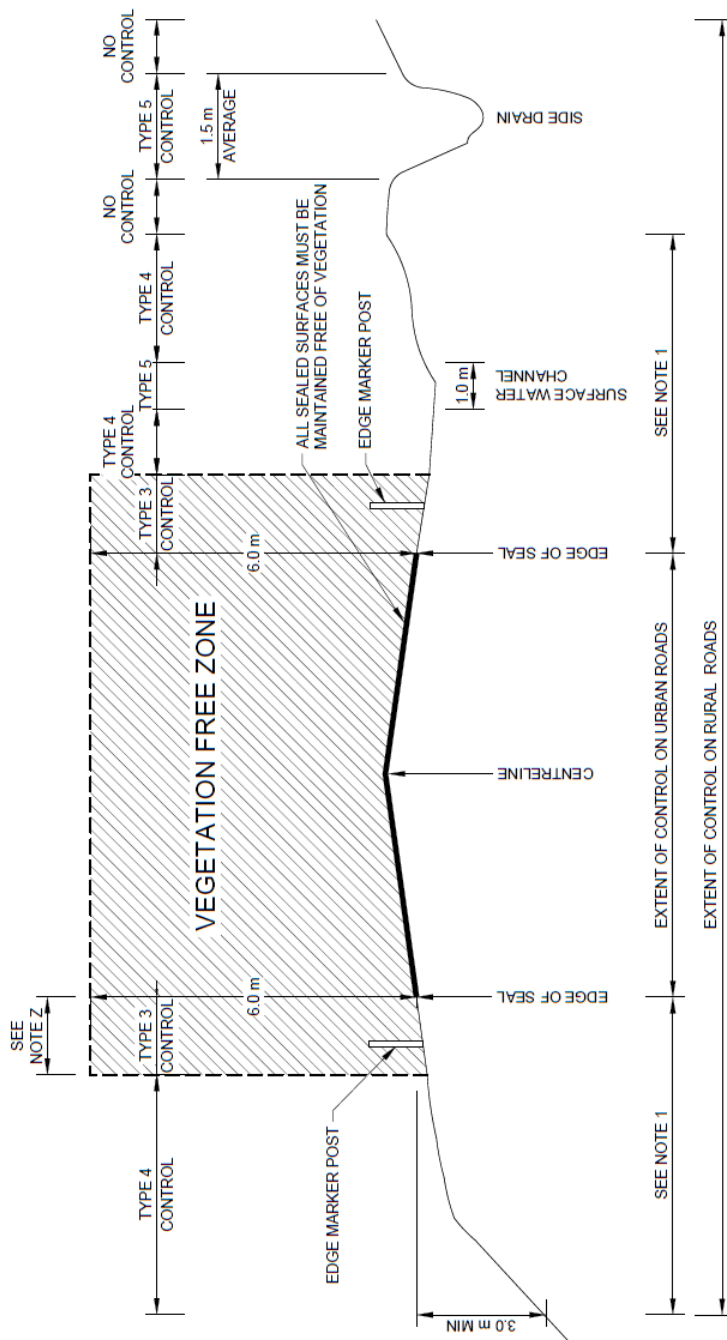
**TABLE 6.9.5: VEGETATION CONTROL - OMISSIONS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	CONTROL TYPES	COMMENTS
<<to complete>>					

# 6.10 EXTENT OF VEGETATION CONTROL AND VEGETATION MANAGEMENT



## EXTENT AND TYPE OF VEGETATION CONTROL FOR ROADS WITHOUT KERB AND CHANNEL

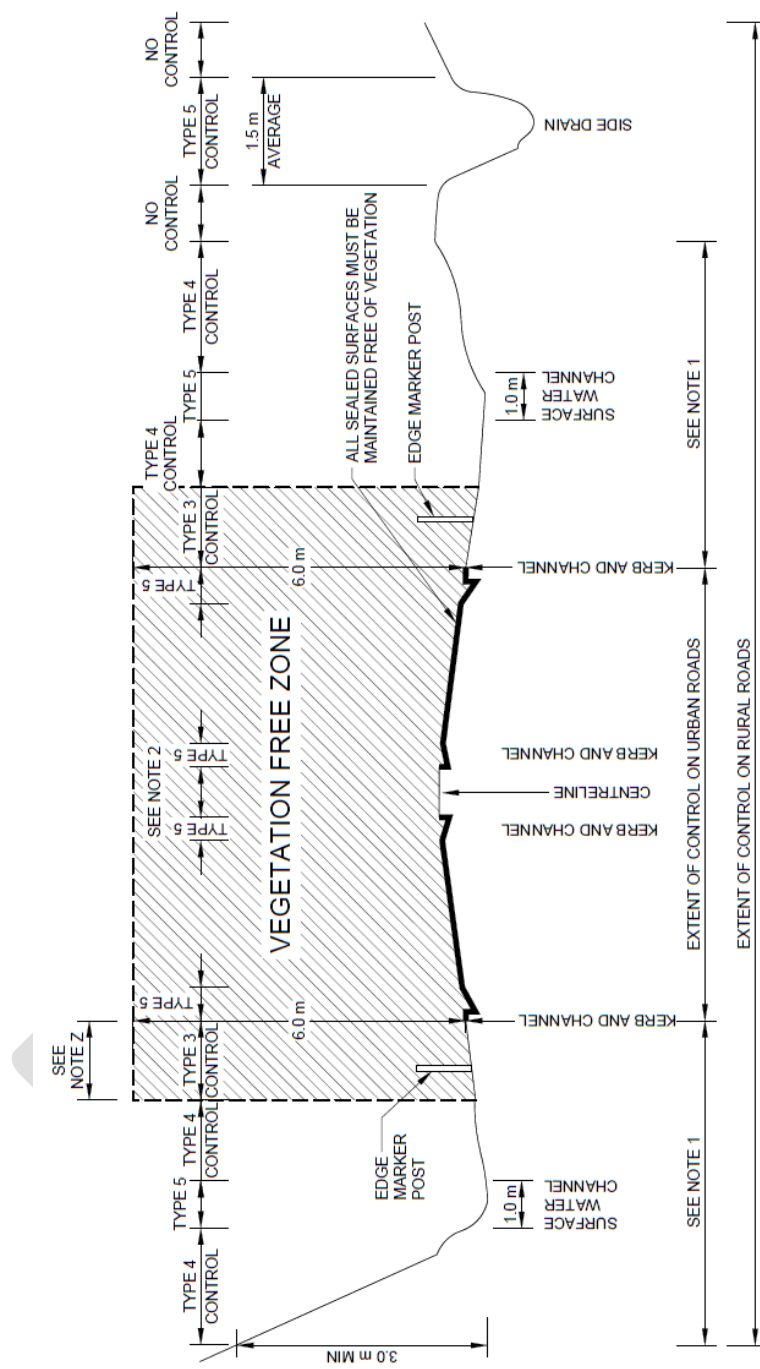


NOTE 2: TYPE 3 CONTROL SHALL EXTEND A MINIMUM OF 0.5 m BEHIND MARKER POSTS ON STRAIGHTS AND 5 m FROM EDGE OF SEAL ON INSIDE OF CURVES.

NOTE 1: TYPE 4 CONTROL SHALL EXTEND TO THE ROAD BOUNDARY FENCE WHERE ONE EXISTS, OTHERWISE TO THE EXTENT DESCRIBED IN SECTION 1.7.

NOTE 2: VEGETATION FREE ZONE MUST BE MAINTAINED FREE OF ALL VEGETATION EXCEPT WHERE SPECIFIED IN THE VEGETATION CONTROL SCHEDULE.

**EXTENT AND TYPE OF VEGETATION CONTROL FOR ROADS WITHOUT KERB AND CHANNEL**



NOTE 2: TYPE 3 CONTROL SHALL EXTEND A MINIMUM OF 0.5 m BEHIND MARKER POSTS ON STRAIGHTS AND 5 m FROM EDGE OF SEAL ON INSIDE OF CURVES.

NOTE 3: VEGETATION CONTROL FOR KERB AND CHANNEL, AND ALL OTHER LINED CHANNELS MUST INCLUDE THE TREATMENT OF VEGETATION AT THE KERB AND CHANNEL/PAVEMENT INTERFACE.

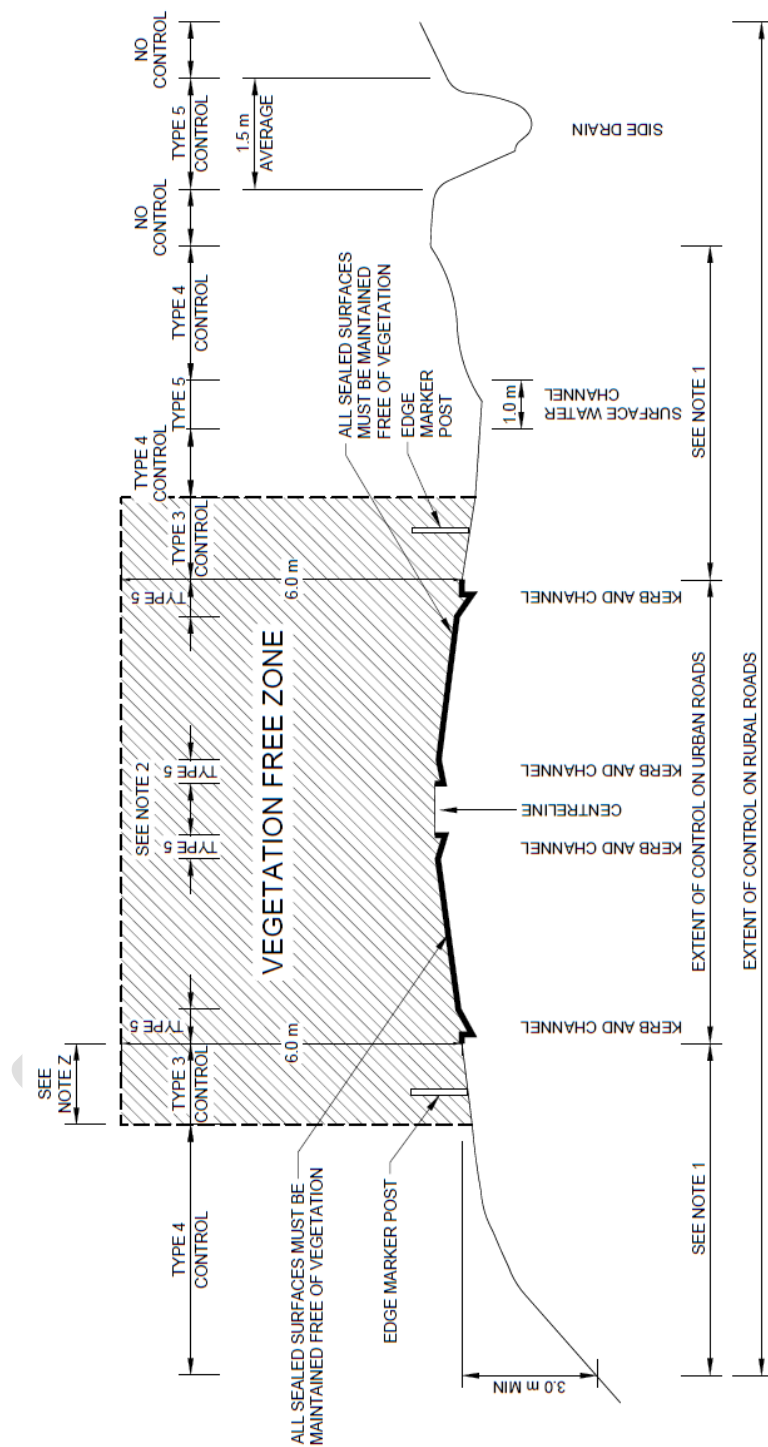
NOTE 4: VEGETATION FREE ZONE MUST BE MAINTAINED FREE OF ALL VEGETATION EXCEPT WHERE SPECIFIED IN THE VEGETATION CONTROL SCHEDULE.

NOTE 1: TYPE 4 CONTROL SHALL EXTEND TO THE ROAD BOUNDARY FENCE WHERE ONE EXISTS, OTHERWISE TO THE EXTENT DESCRIBED IN SECTION 1.7.

NOTE 2: CONTROL OF GRASSED AREAS ON ISLANDS MUST BE TYPE 1 FOR URBAN ROADS AND TYPE 3/3A FOR RURAL ROADS.

**EXTENT AND TYPE OF VEGETATION CONTROL FOR ROADS WITH KERB AND CHANNEL**





NOTE 3: VEGETATION CONTROL FOR KERB AND CHANNEL, AND ALL OTHER LINED CHANNELS MUST INCLUDE THE TREATMENT OF VEGETATION AT THE KERB AND CHANNEL/PAVEMENT INTERFACE.

NOTE 4: VEGETATION FREE ZONE MUST BE MAINTAINED FREE OF ALL VEGETATION EXCEPT WHERE SPECIFIED IN THE VEGETATION CONTROL SCHEDULE.

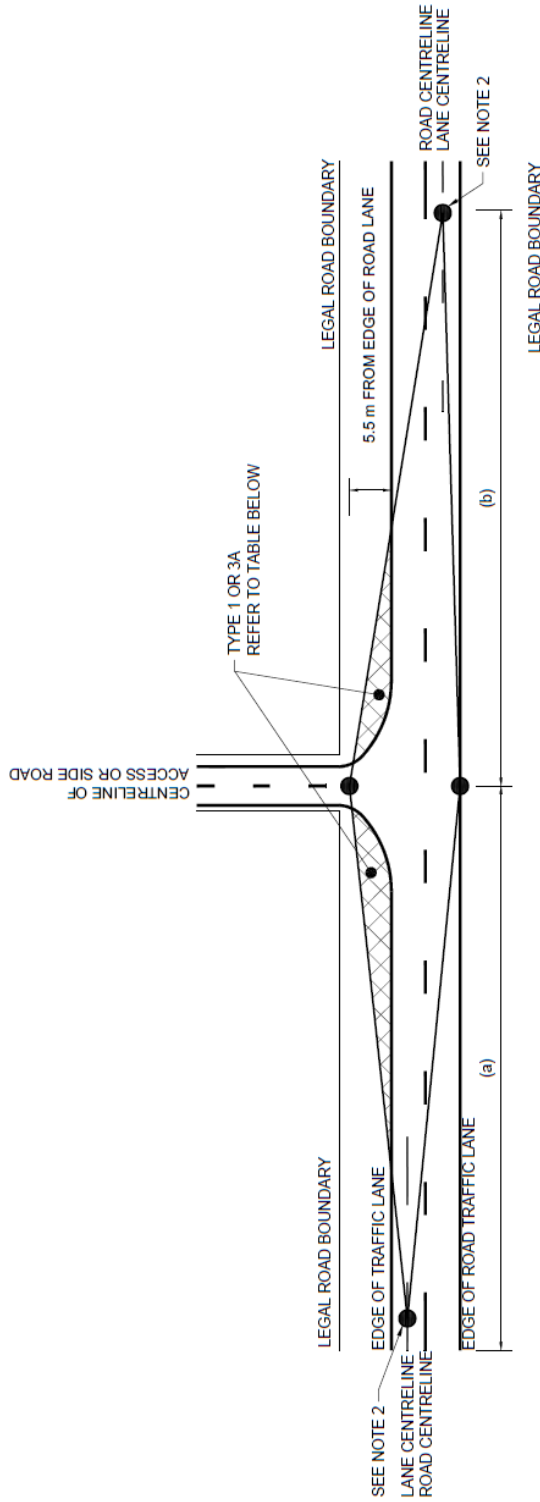
NOTE Z: TYPE 3 CONTROL SHALL EXTEND A MINIMUM OF 0.5 m BEHIND MARKER POSTS ON STRAIGHTS AND 5 m FROM EDGE OF SEAL ON INSIDE OF CURVES.

NOTE 1: TYPE 4 CONTROL SHALL EXTEND TO THE ROAD BOUNDARY FENCE WHERE ONE EXISTS, OTHERWISE TO THE EXTENT DESCRIBED IN SECTION 1.7.

NOTE 2: CONTROL OF GRASSED AREAS ON ISLANDS MUST BE TYPE 1 FOR URBAN ROADS AND TYPE 3/3A FOR RURAL ROADS.

**EXTENT AND TYPE OF VEGETATION CONTROL FOR ROADS WITH KERB AND CHANNEL**





NOTE 1. SITE DISTANCES SHALL BE MEASURED TO AND FROM A HEIGHT OF 1.15 METRES ABOVE THE EXISTING ROAD SURFACE AND THE PROPOSED SURFACE LEVEL OF THE SIDE ROAD OR ACCESS.

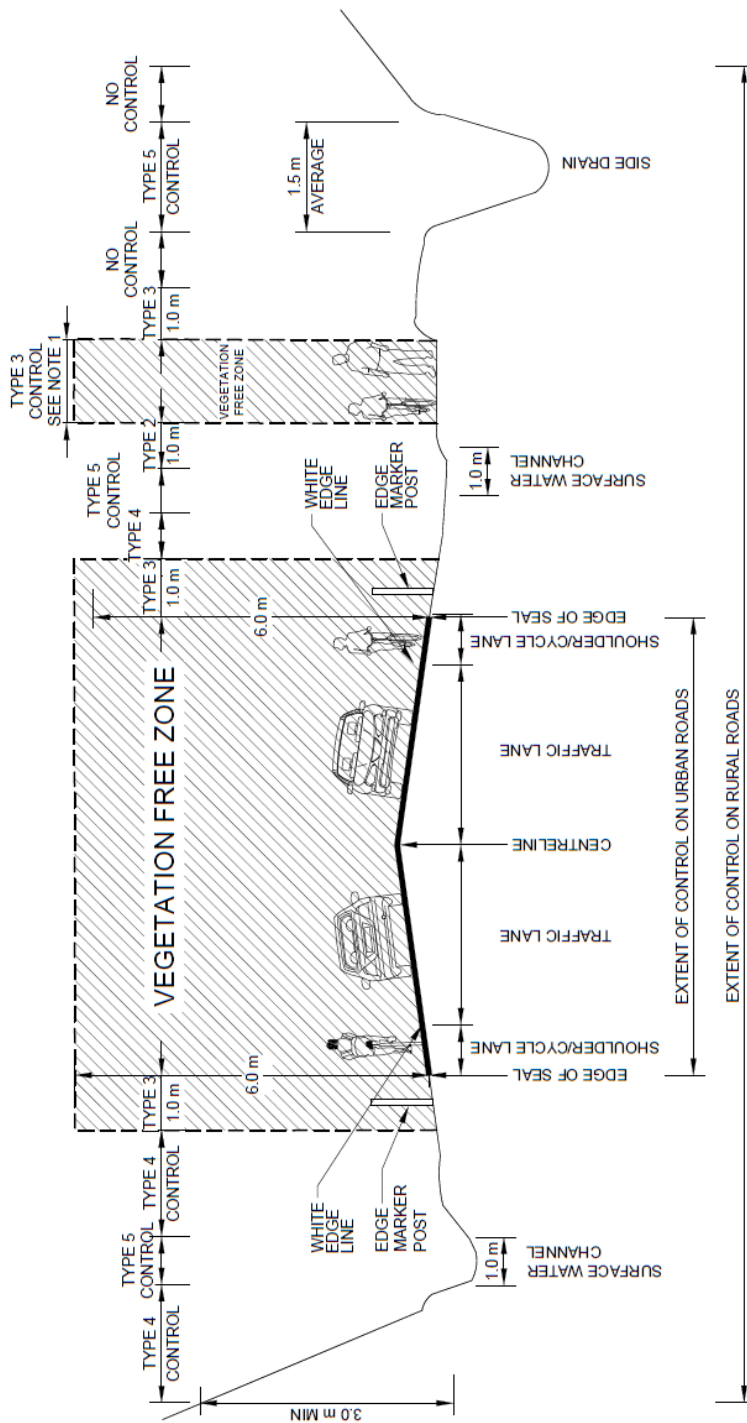
NOTE 2. SITE DISTANCE IS TO THE MIDDLE OF THE TRAFFIC LANE. IF A MULTILANED ROAD SITE DISTANCE IS TO THE MIDDLE OF THE LEFT HAND LANE.

NOTE 3. VEGETATION CONTROL TO MAINTAIN A MINIMUM SIGHT DISTANCE AT INTERSECTIONS AND OTHER DESIGNATED AREAS MUST BE ACCORDING TO THE FOLLOWING TABLE:

ROAD ENVIRONMENT	MINIMUM SIGHT DISTANCE (a)	TYPE OF VEGETATION CONTROL
RURAL	250m OR AS AGREED WITH THE PRINCIPAL	3A
URBAN	130m OR AS AGREED WITH THE PRINCIPAL	1

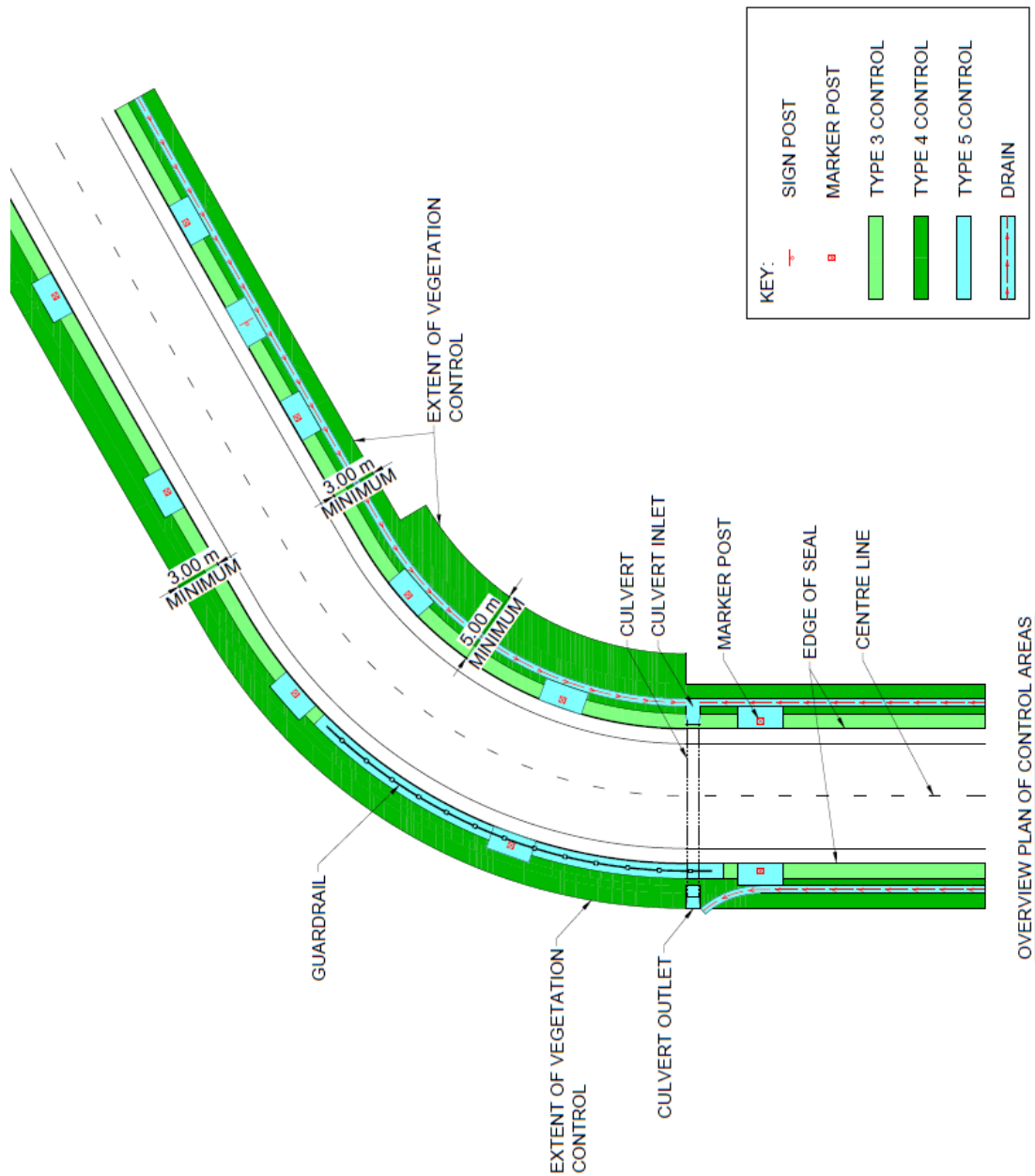
**VEGETATION CONTROL AT INTERSECTIONS**

The vegetation free zone required for cycling facilities is provided below.



NOTE 1: HEIGHT OF VEGETATION FREE ZONE CAN BE REDUCED TO 3 m ON SEPARATED CYCLEWAY AND SHARED PATH FACILITIES.

**EXTENT AND TYPE OF VEGETATION CONTROL FOR CYCLING FACILITIES**



<<For Type 7 planted areas maps should be provided>>

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## 6.11 LITTER CONTROL - HIGH PROFILE AREAS

TABLE 6.11.1: LITTER CONTROL - HIGH PROFILE AREAS

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	CONTROL-TYPES COMMENTS
<<to complete>>				

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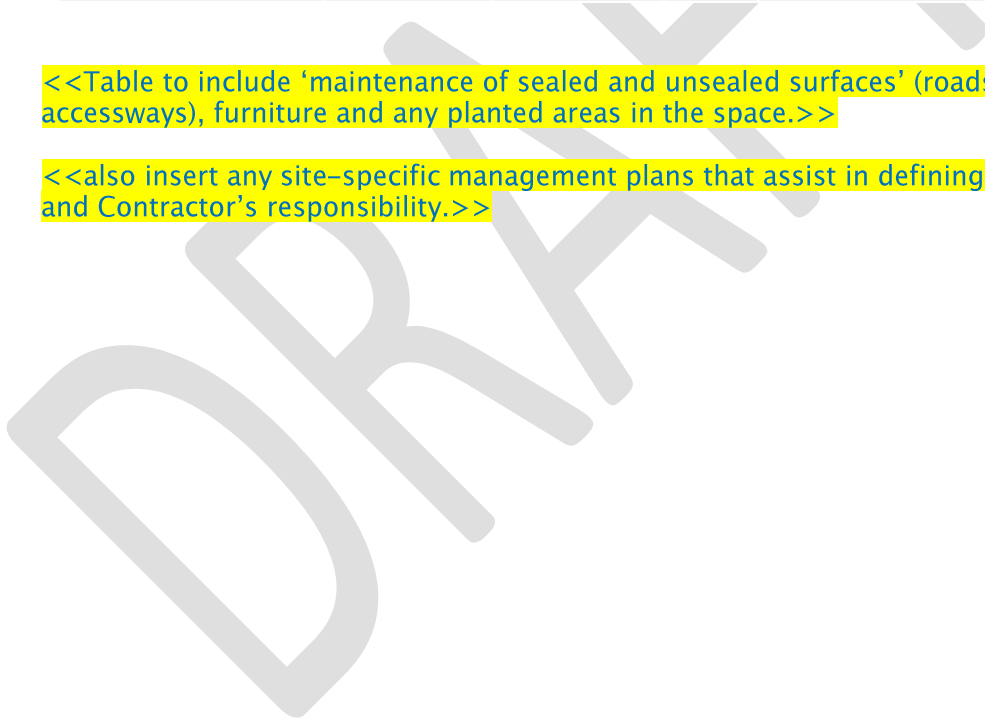
## 6.12 REST AREA, AND HEAVY COMMERCIAL VEHICLE FACILITY AND FORMED STOPPING AREA MAINTENANCE

**TABLE 6.12: REST AREA, AND HCV FACILITY AND FORMED STOPPING AREA MAINTENANCE REQUIREMENTS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	MAINTENANCE REQUIREMENTS
<<to complete>>				

<<Table to include 'maintenance of sealed and unsealed surfaces' (roads or accessways), furniture and any planted areas in the space.>>

<<also insert any site-specific management plans that assist in defining the Principal's and Contractor's responsibility.>>



## 6.13 ELECTRONIC SIGN SCOPE AND RESPONSIBILITY

**TABLE 6.13.1: ELECTRONIC SIGN SCOPE AND RESPONSIBILITY SCHEDULE**

SIGN TYPE	CLEANLINESS AND OBSCURITY (LUMP SUM ACTIVITY)	MAINTENANCE AND REPAIR (PROVISIONAL SUM ACTIVITY)	COMPLETE BASIC MAINTENANCE INSPECTION (LUMP SUM ACTIVITY)
Auckland Region ITS Assets (excludes regional VMS)	x	x	x
Automatic Number Plate Recognition (ANPR)	x	x	x
CCTV	x	x	✓
Changeable Message Signs (CMS)	x	x	x
Curve Advisory Signs (CAS)	✓	✓	✓
Cycle Warning Signs (CWS)	✓	✓	✓
Emergency Phones	x	x	x
Flood Warning Signs (FWS)	✓	✓	✓
Ice Warning Signs (IWS)	✓	✓	✓
Journey Time Devices	x	x	x
Lane Signal Units (LSUs)	x	x	x
Loops and Radars	x	x	x
Mobile VMS (MVMS)	✓	✓	✓
Principal-owned Weather Stations (excludes Metservice AWS)	✓	✓	✓
Over-Height Detection Systems (OHDS)	✓	✓	✓
Queue Warning Signs (QWS)	✓	✓	✓
Ramp Signalling	x	x	✓

**TABLE 6.13.1: ELECTRONIC SIGN SCOPE AND RESPONSIBILITY SCHEDULE**

SIGN TYPE	CLEANLINESS AND OBSCURITY (LUMP SUM ACTIVITY)	MAINTENANCE AND REPAIR (PROVISIONAL SUM ACTIVITY)	COMPLETE BASIC MAINTENANCE INSPECTION (LUMP SUM ACTIVITY)
Regional Variable Message Signs (VMS)	x	x	✓
Rural Intersection Advanced Warning Signs (RIAWS)	x	x	✓
Rural School Signs (RSS)	✓	✓	✓
School Variable Speed Signs (SVSS)	✓	✓	✓
SH94 Milford Road ITS	x	x	✓
Slip Monitoring Signs (SMS)	✓	✓	✓
Solar Traffic Lights	✓	✓	✓
Speed Indicator Devices (SID)	✓	✓	✓
T2 VMS installed by HMI	x	x	✓
Tolling	x	x	x
Traffic Monitoring System (TMS)	x	x	x
Traffic Signals	x	x	x
Truck Weighbridge Signs (TWS)	✓	✓	✓
Tunnel ITS assets	x	x	x
Variable Mandatory Speed Signs (VMSS)	x	x	✓
Weigh in Motion (WIM)	x	x	x
Wellington Region ITS Assets (excludes regional VMS)	x	x	x



**Notes:**

8. Check if sign/solar panel has been clipped by a vehicle or damaged by a missile, and that the foundation socket is secure.
9. Check that all attachments holding sign and solar panel to pole are secure.
10. Check sign and pole are clean with no graffiti, and no excessive build-up of bird droppings on solar panel.
11. Estimate sun's arc (winter/summer). Check there is no excessive shading of solar panel from trees, for example.
12. Sign activation is achieved by:
  - Speed Indication Device (SID): Move a calibrated tuning fork slowly in and out 0.5 – 0.7m in front of radar. The tuning fork is normally calibrated to 45 km/h. Check SID displays the correct speed.
  - Curve Advisory Sign (CAS). Either use two calibrated tuning forks to active the upper threshold (displays arrow and "SLOW DOWN") and lower threshold (displays arrow only), *or* drive towards sign *decelerating to a safe speed* whilst activating the upper and lower thresholds
  - School: May not be activated at time of visit. Phone the school prior to visit and confirm sign display and timer operation are satisfactory.
  - 40km/h School: As for School signs.
  - Cyclist: Roll or ride a bicycle over the induction loops. Or open the Rainbird and take the cable marked 'dry contact output' which should be connected to the cable coming from the sign. Remove this connection and touch the two ends of the cable to the sign together. This should short the connection and activate the sign.
  - Hidden Queue: Turn 3-way switch in control box to "Simulate" for about 10 seconds.
13. With the display activated, check and record the position of any dead LEDs.
14. Ensure no obstruction is blocking approaching road users from seeing the signs. Check general safety.



## 6.14 LOCATION OF VARIABLE MESSAGE SIGNS

ROAD NAME	DISPL. (M)	SIDE	SITE DESCRIPTION
<<to complete>>			

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## 6.15 LOCATIONS WITH NO RAISED PAVEMENT MARKERS

TABLE 6.15: LOCATIONS WITH NO RAISED PAVEMENT MARKERS

ROAD NAME	START DISPL. (M)	END DISPL. (M)	ROAD LOCATION
<<to complete>>			

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## 6.16 LOCATIONS OF STREETLIGHTS TO MAINTAIN

TABLE 6.16: LOCATIONS OF STREETLIGHTS TO MAINTAIN

ROAD NAME	START DISPL. (M)	END DISPL. (M)	ROAD LOCATION
<<to complete>>			

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## 6.17 RECURRING HAZARDS

TABLE 6.17: SCHEDULE OF RECURRING HAZARDS

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION	HAZARD
<<description of specific hazard must be included in this table i.e. rockfall, under-slip, over-slip etc>>					

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## 6.18 SITE-SPECIFIC WARNING SYSTEM

The following table includes the locations of any site-specific warning systems on the network.

**TABLE 6.18.1: SCHEDULE OF SITE-SPECIFIC WARNING SYSTEM LOCATIONS**

ROAD NAME	START DISPL. (M)	END DISPL. (M)	SIDE	DESCRIPTION
<<to complete>>				Refer to Management Plan xx below.

### Management Plan XXX

An automated monitoring system has been installed at this site to provide early warning of slip movement. The system involves a trip wire stretched across a section of the slip to detect ground movement. The trip wire is connected to a detection switch which detects either increased or decreased tension in the wire and triggers an alarm that is sent by a text message to pre-programmed cellular phones. The site is powered by solar panels and batteries. The Contractor will be required to monitor the integrity of the system and provide an answering service for when calls are triggered by storm events.

The maintenance requirements in Table 6.16.2 are to be carried out within the Contractor's lump sum for general maintenance.

**TABLE 6.18.2: SPECIFIC WARNING SYSTEM MAINTENANCE REQUIREMENTS FOR MANAGEMENT PLAN XXX**

ITEM	DESCRIPTION	MAINTENANCE REQUIREMENTS
1	Check equipment for any signs of damage particularly loss of sealing of lid or conduit entry.	Monthly
2	Remove build-up of debris, vegetation or silt from trip wire and associated wiring.	Monthly or as required



**TABLE 6.18.2: SPECIFIC WARNING SYSTEM MAINTENANCE REQUIREMENTS FOR MANAGEMENT PLAN XXX**

ITEM	DESCRIPTION	MAINTENANCE REQUIREMENTS
3	Send a Status Check text message to the system	Monthly
4	Check operation by manual tripping of trip wire	2 monthly
5	Clean solar panel surface using glass cleaner and soft cloth	2 monthly or as required
6	Adjust trip wire tension in accordance with manufacturer's instructions	6 monthly or after activation
7	Replace batteries	2 yearly (i.e. Dec 2019, 2021, 2023)
8	After automatic triggering of alarm	Visit site to reset switch and relocate trip wires

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# 7 Network Specific Information and Requirements Contract Works

## 7.1 WINTER REMARK LOCATIONS

TABLE 7.1: WINTER REMARK LOCATIONS

ROAD NAME	START DISPL. (M)	END DISPL. (M)	LENGTH (M)	SPECIFIC REQUIREMENTS
<<to complete>>				

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## 7.2 MANUAL OPERATED ROAD SIGN LOCATIONS

TABLE 7.2: MANUAL OPERATED ROAD SIGN LOCATIONS

ROAD NAME	DISPL. (M)	DESCRIPTION
<<to complete>>		

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## 8 Local Roads

<<Define any appendices required for local roads.>>

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# 9 Tunnels

## 9.1 TUNNEL SPECIFIC MANAGEMENT, OPERATIONS AND MAINTENANCE

<<Define the plan for tunnel management>>

### 9.1.1 Deluge System (Terrace and Mount Victoria Tunnels)

Item No	Item	Action require and pass/fail requirement	Frequency					Records		
			1-3 months	3-6 months	6-12 months	1-3 years	3+ yearly	Result	Pass / Fail	Comments
1.0	Inspection and Records									
1.1	Pressure Gauges	Check that all pressure gauges are within ranges indicated on the pressure gauge schedule	<	<	<	<		Pilot line kpa Diaphragm line kpa Below stop kpa		
1.2	Electrical detection		<	<	<	<				
2.0	Test and Records									
2.1	Pressure Gauge readings	Record reading from each pressure gauge prior to Items 2.2 – 2.3		<	<	<		Pilot line .....kpa Diaphragm .....kpa Below main stop valve.....kpa		
2.2	Deluge valve alarm gong and Fire Brigade alarm test	Where test-isolating valve is provided immediately above the deluge valve (a) Close test-isolating valve open system drain valve and operate each deluge valve by		<	<	<				



		opening manual valve							
		(b) Record time(s) to operation of alarm gongs and verify that this does not exceed 30s.		✓	✓	✓			
		(c) Verify correct operation of the fire brigade alarm from each deluge valve set and verify receipt of the alarm signal by the monitoring facility in accordance with the local fire brigade requirements		✓	✓	✓			
2.3	Deluge valve resetting	Close main stop valve. Open and secure test-isolating valve in open position, close drain and reset manual operating valve		✓	✓	✓			
2.4	Detector sprinkler line pressure	Reset deluge valve and restore detector sprinkler line pressure. Open and secure main stop valve		✓	✓	✓			
3.0	Preventative Maintenance and Records Schedule								
3.1	Deluge valves	Fit new deluge valve seats and seals. Check and clean operating mechanism. Fit new faceplate gasket.					✓		
3.2	Diaphragm valve	Fit a new diaphragm					✓		

**Notes:**

1. It may not be possible to carry out all of the works required for quarterly, 6-monthly and yearly frequencies within the limited time slot available in a monthly tunnel closure. The Contractor is to sequence their work so that quarterly, 6 monthly and yearly works can be accommodated within the available working time.
2. The contractor carrying out maintenance work on the deluge system shall have current certification from a sprinkler system certifier (SSC) in accordance with NZS 4541:2007.
3. See drawing list (Terrace Tunnel) for deluge system drawings.
4. For Mt Victoria Tunnel deluge system drawings see drawing list (pdf file) at bottom of drawing file.

**9.1.2 Fire Hydrant**

Item No.	Item	Action require and pass/fail requirement	Frequency					Records		
			Quarterly	6-monthly	Yearly	5-yearly	Result	Pass/Fail	Comments	
1.0	Inspection and Records									
1.1	Water Supply stop valves and isolating valves	(a) Check all isolating valves including underground key operated valves are in their correct operating positions.				✓	✓			
		(b) Check all above ground valves are secured or monitored.				✓	✓			
1.2	Hydrant valves above ground	Check all hydrant valves				✓	✓			
		(a) are accessible				✓	✓			
		(b) Hand-wheels are securely fitted.				✓	✓			
1.3	Hydrant valves below ground	(c) Blanking caps where fitted are in good condition.				✓	✓			
		Check all hydrant valves				✓	✓			
		(a) are accessible.				✓	✓			
		(b) Blanking caps where fitted are in good condition.				✓	✓			

		(c) Check cover plate for ease of opening				✓	✓			
1.4	Booster assembly (where fitted)	Check all hydrant valves (a) are accessible				✓	✓			
		(b) Hand-wheels are securely fitted				✓	✓			
		(c) Pressure gauges and blanking caps where fitted are in good condition				✓	✓			
		(d) For condition of washers on booster assembly connection inlets and replace if signs of deterioration				✓	✓			
		(e) For legible labelling indicating maximum system working pressure				✓	✓			
1.5	Hydrant and booster connections - compatibility	Check that all hydrant and booster connection points are compatible with local brigade requirements				✓	✓			
1.6	All valves	Check all valves for leaks				✓	✓			
1.7	Hydrant hose (where fitted)	Check all branch pipes, nozzles and hose couplings are in good condition, compatible with the hydrant valves and properly stowed				✓	✓			
1.8	Cabinets	Check that all hydrant and booster cabinets are accessible, clear of extraneous materials, clearly and correctly marked and in good condition				✓	✓			
1.9	Pressure reducing/pressure limiting valves	Check pressure readings on the low side of pressure - reducing and pressure - limiting valves for deviations from designed operating pressure				✓	✓			

		Note: Gauges or facilities for gauges should be installed immediately upstream and downstream of the valve(s).									
2.0	Test and Records										
2.1	Hydrant valves above ground	Open partially all hydrant valves in the system and prove the presence of water at each point.					✓	✓			
2.2	Hydrant valves below ground	(a) Operate all underground key-operated valves and subsidiary stop valves. Ensure they are fully open and where applicable secured in the open position.					✓	✓			
		(b) Verify that the valve position indicators are securely mounted and indicate correctly.					✓	✓			
		(c) Test each valve anti-tamper switch by closing and re-opening the valve. Verify correct indication at the CIE.					✓	✓			
2.3	Non-return valves	Verify that all non-return valves are operating freely and are seating correctly.					✓				
2.4	Hydrant hose	Verify all branch pipes, nozzles and hose couplings waterways are unobstructed.					✓	✓			
2.5	Pressure reducing station test	(a) Operate all pressure-reducing valves and verify correct operation under flow conditions.					✓	✓			
		(b) Verify that pressure readings on the low-pressure side of the valves are within the range stated at the					✓	✓			

		pressure-reducing station							
		(c) Operate pressure-relief valve and note operating pressure. If necessary, adjust the setting to relieve at 50kpa above the operating pressure of the pressure-reducing valve. Replace the tamper seal if necessary.					✓	✓	
2.6	Water supply proving test	Conduct a water supply proving test for each water supply verifying that the system flow and pressure requirements meet the design criteria, using either: (a) a fixed flow meter test facility; or (b) a portable test apparatus at the most hydraulically disadvantaged hydrant valve(s).					✓	✓	
							✓	✓	
3.0	Preventative Maintenance and Records Schedule								
3.1	Branch pipes, nozzles and hose couplings	Clean all branch pipes nozzles and hose couplings and ensure they are in good condition.					✓	✓	
3.2	Pressure Switches	Clean all branch pipes nozzles and hose couplings and ensure they are in good condition.					✓	✓	
3.3	Booster assembly	(a) Change all washers on booster assembly connection inlets.						✓	
		(b) Lubricate internal non-return spring check						✓	



		valves on a 10 yearly basis								
3.4	Drain and test valve washers	For screw-down style valves, examine seating and fit new washers. For packed gland variants, fit new gland packing.								
3.5	Stop Valves	Fit new gland packing and lubricate spindle								
3.6	Hydrant valves	Fit new seatings to all hydrant valves and lubricate spindles. Note : This activity should be completed prior to conducting the hydrostatic pressure test.								
3.7	Water supply - non return valves	Renew water supply non-return valve seatings and gasket								
3.8	Gauges	Check all pressure gauges against calibrated gauge								

**Notes:**

- It may not be possible to carry out all of the works required for the yearly inspections and testing within the limited time slot available in a monthly tunnel closure. The contractor is to sequence their work so that yearly works can be accommodated within the available working time
- Routine tests and inspections shall be undertaken by a licensed building practitioner (LBP) or independently qualified person (IQP) in accordance with NZS 4510:2008
- See drawings for hydrant system.

**9.1.3 Fire Detection System (Terrace and Mount Victoria Tunnels)**

Item No.	Item	Action require and pass/fail requirement	Frequency					Records		
			1-yearly	2-yearly	3-yearly	4-yearly	5-yearly	Result	Pass/Fail	Comments
1.0	Inspection and Records									

1.1	Control and indicating equipment (CIE)	Inspect the fire indicator panel, sub-indicator panel, repeater panel or mimic panel to ensure that they are clearly visible, readily accessible and free from dust and contaminants. Where the panel is obscured by a door, check that the door is correctly labelled. Note: Inspect the CIE keypad or membrane for any condition including damage that is likely to adversely affect its operation.	✓	✓	✓	✓	✓			
1.2	External alarm indicator	Inspect the external alarm indicator (bell or strobe light) to ensure it clearly indicates the designated entry point.			✓	✓	✓			
1.3	Battery enclosure	Where vented batteries are used, inspect the battery enclosure for evidence of corrosion.			✓	✓	✓			
1.4	Actuating devices	Inspect all actuating devices and remote indicators for any condition that is likely to adversely affect their operation, such as excessive deposition of dust or coating of paint.				✓	✓			
1.5	Manual call point glass	Where manual call points use replaceable frangible elements, ensure that at least one replaceable element and a tool for replacing such elements is available.				✓	✓			
1.6	Alarm sounders	Ensure all alarm sounders for any condition including damage that is likely to adversely affect their function, and ensure that they are clearly and				✓	✓			

		correctly labelled where labelling is required and where bells are used. inspect to ensure that the bell label is legible with the word FIRE in characters not less than 25mm in height								
1.7	Visual warning devices	Where visual warning devices (VWDs) are used as the alarm indicating devices, inspect all devices for any condition or damage that is likely to adversely affect their operation				✓	✓			
1.8	Other warning devices	Where other warning devices are installed, inspect all devices for any condition, including damage that is likely to adversely affect their function, and ensure that they are clearly and correctly labelled where labelling is required				✓	✓			
1.9	Block plan	Inspect block plans and zone drawings to ensure the plan is legible and current.				✓	✓			
1.10	Monitoring connection	Where the system is monitored, inspect records of monitoring reliability.				✓	✓			
2.0	Test and Records									
2.1	Fire alarm	Simulate an alarm condition via an alarm zone, and confirm that all required common, visual and audible indications and output controls activate. Where the CIE is monitored, ensure the alarm is processed by the	✓	✓	✓	✓	✓			

		monitoring service (ADT) provider. Where the CIE is a sub CIE confirm that the fault condition is indicated at the main CIE.								
2.2	Fault	Simulate a fault condition at the fire indicator panel (FIP) and where the CIE is monitored, ensure the fault is processed by the monitoring service provider. Where the CIE is a sub CIE confirm that the fault is indicated at the fire CIE.	✓	✓	✓	✓	✓			
2.3	Power supply supervision	Where the CIE is monitored reduce the CIE operating voltage to trigger a power supply supervision fault and confirm that it is processed by the monitoring service provider. Where the CIE is a sub CIE confirm that the power supply supervision fault condition is indicated at the fire CIE.						✓		
2.4	Isolate	Initiate an isolate/disable condition at the fire indicator panel and where the CIE is monitored, ensure the isolate is processed by the monitoring service provider. Where the CIE is a sub CIE confirm that the isolate/ disable condition is indicated at the fire CIE as either a fault or isolate/disable.	✓	✓	✓	✓	✓			
2.5	Reset	Test the operation of the reset function.	✓	✓	✓	✓	✓			
2.6	Visual indicators	Test the operation of all filament type visual indicators.	✓	✓	✓	✓	✓			

2.7	Aural indicator	Test the operation of the aural indicator	✓	✓	✓	✓	✓			
2.8	External alarm indicator	Test the operation of the local external alarm.	✓	✓	✓	✓	✓			
2.9	Controls	Ensure all controls are returned to their normal position.	✓	✓	✓	✓	✓			
2.10	CIE controls and indicator	Test the operation of sub-indicator panel, repeater panel or mimic panel controls and indicators.	✓	✓	✓	✓	✓			
2.11	CIE alarm condition	Simulate an alarm and confirm the alarm initiates the warning system.			✓	✓	✓			
2.12	Panel switches and keypads	Test the operation of all required controls.			✓	✓	✓			
2.13	Visual indicator	Test the operation of CIE LED and alphanumeric indicators.				✓	✓			
2.14	Warning system	Test the operation of the warning system.				✓	✓			
2.15	Battery	When the battery has not been replaced in the previous two years, ensure the battery capacity is at least equal to the capacity required for quiescent current and alarm current conditions by carrying out a discharge test in accordance with the manufacturers recommendations.					✓	✓		
2.16	Ancillary controls	Test the operation of ancillary control functions and ensure that each controlled device can be correctly initiated.					✓	✓		





		with the system interface schematic											
2.24	Occupant warning system	Undertake sound pressure level tests and ensure that the results obtained throughout the structures meet the requirements of the standard to which the system was installed											
2.25	Smoke and CO detectors	Check the sensitivity of all detectors to ensure each is within the required sensitivity range											
2.26	Monitoring connection Smoke alarms and heat alarms	Where the system is monitored, test that the loss of each of the monitoring links is indicated at the monitored site											
3.0	Preventative Maintenance and Records Schedule												
3.1	Battery	Replace any battery older than 2 years unless it satisfactorily passes a battery capacity test											
3.2	Smoke alarms and heat alarms	Carry out maintenance in accordance with manuals											
4.0	Survey and Records Schedule												
4.1	Actuating devices	Inspect all actuating devices to ensure spacing and location requirements in accordance with AS 1670.1 and NZS 4512											

**Notes**

1. It may not be possible to carry out all of the works required for monthly, quarterly, 6-monthly and yearly frequencies within the limited time slot available in a monthly tunnel closure. The contractor is to sequence their work so that quarterly 6 monthly and yearly works can be accommodated within the available working time.
2. The contractor carrying out testing and maintenance work on the fire detection system shall have approved certification in accordance with NZS 4512.
3. See drawings for fire detection system.

**9.1.4 Sound System (Terrace Tunnel)**

Re m No.	Item	Action require and pass/fail requirement	Frequency			Records				
			Monthly	Quarterly	Six-monthly	Yearly	5-yearly	2-5	Pass / fail	Comment
1.0	Inspection and Records									
1.1	Sound equipment for emergency purposes	Inspect the warning panel to ensure that they are clearly visible, readily accessible and free from dust and contaminants. Where the panel is obscured by a door, check that the door is correctly labelled.		✓	✓	✓	✓			
1.2	Emergency call points	Where emergency call points are installed, inspect all devices for any condition, including damage that is likely to adversely affect their function, and ensure that they are clearly and correctly labelled where labelling is required. Where an emergency call point is obscured by a door, check that the door is correctly labelled.				✓	✓			
1.3	Visual warning devices	Where visual warning devices are installed, inspect all devices for any condition, including damage that is likely to adversely affect their function, and ensure that they are clearly				✓	✓			

		and correctly labelled where labelling is required.								
1.4	Other warning devices	Where other warning devices are installed, inspect all devices for any condition, including damage that is likely to adversely affect their function, and ensure that they are clearly and correctly labelled where labelling is required.				✓	✓			
1.5	Block Plan	Inspect block plans and zone drawings to ensure the plan is legible and current.				✓	✓			
1.6	Battery enclosure	Where vented batteries are used, inspect the battery enclosure for evidence of corrosion.				✓	✓			
2.0	Test and Records									
2.1	Fire alarm	Simulate an alarm condition and confirm the alert and evacuate tones sound.	✓	✓	✓	✓				
2.2	Controls	Ensure all controls are returned to their normal position.	✓	✓	✓	✓				
2.3	Warning system initiation	Simulate an alarm condition via the fire system in automatic mode.			✓	✓	✓			
2.4	Fault	Simulate a speaker circuit fault, emergency call point circuit fault and visual warning device circuit fault for every circuit and confirm that the fault is indicated at the fire CIE and any corresponding sub CIE.				✓	✓			
2.5	Reset	Test the operation of the reset function.			✓	✓	✓			
2.6	Aural indicators	Test the operation of the aural indicator.			✓	✓	✓			
2.7	Controls	Ensure all controls are returned to their normal position.			✓	✓	✓			
2.8	Fault	Simulate a fault between the fire system and the warning system and confirm the fault				✓	✓			

		condition is indicted at the warning panel								
2.9	Visual indicators	Test the operation of LED and alphanumeric indicators				✓	✓			
2.1	Battery	When the battery has not been replaced in the previous two years, ensure the battery capacity is at least equal to the capacity required for quiescent current and alarm current conditions by carrying out a discharge test in accordance with the manufacturers recommendations				✓	✓			
2.1	Ancillary controls	Test the operation of ancillary control functions and ensure that each controlled device can be correctly initiated.				✓	✓			
2.1	Emergency call points	Test the operation of all installed emergency call points				✓	✓			
2.1	Visual warning devices	Test the operation of the visual warning devices				✓	✓			
2.1	Unprotected areas	Test all areas of the tunnel to ensure the system is installed in accordance with the Standard to which the system was installed.				✓	✓			
2.1	Warning signals	Confirm the sound system warning signals are distinctly audible in all areas of the tunnel				✓	✓			
2.1	Override test	Confirm the alarm signal overrides non- emergency audible signals.				✓	✓			
2.1	Interface and control test	Conduct a functional system test with other interfaced fire systems (e.g. Deluge, PA system, as set out in the relevant standards				✓	✓			
		Verify the interface functions in accordance with the system interface schematic for the tunnel.				✓	✓			





1. It may not be possible to carry out all of the works required for quarterly, 6-monthly and yearly frequencies within the limited time slot available in a monthly tunnel closure. The Contractor is to sequence their work so that quarterly, 6-monthly and yearly works can be accommodated within the available working time.
2. The contractor carrying out testing and maintenance work on the fire detection system shall have approved certification in accordance with NZS 4512.
3. See drawings for fire detection system.

### 9.1.5 Gaseous Fire Extinguishing System (North and South Control Buildings)

DRAFT

Item No.	Item	Action require and pass/fail requirement	Frequency					Records		
			Monthly	Quarterly	Six-monthly	Yearly	3-yearly	Result	Pass/ fail	Comments
1.0	Inspection and Records									
1.1	Fire indicator panel	Inspect the fire indicator panel, sub-indicator panel, repeater panel or mimic panel to ensure that they are clearly visible, readily accessible and free from dust and contaminants. Where the panel is obscured by a door, check that the door is correctly labelled	✓		✓	✓				
1.2	Visual warning device (VWDs)	Check that all VWDs such as "system inoperative", etc are in accordance with AS4214.	✓		✓	✓				
1.3	Other warning devices	Where other warning devices are used as the Alarm indicating devices, check that all such devices are in place	✓		✓	✓				
1.4	Warning signs	Check that all warning signs are fitted in compliance with AS 4214	✓		✓	✓				
1.5	Lock off valve (where fitted)	Check that the lock off valve is correctly labelled and accessible	✓		✓	✓				
1.6	Gas storage containers	Check that all gas containers are secure, accessible, free from damage and mounted to allow free passage of air around the base	✓		✓	✓				
1.7	Local control	Check that all LCSs are readily accessible	✓		✓	✓				

	station (ICS)								
1.8	Gas storage pressure	Inspect each container pressure indicator to check that any loss in pressure is not greater than 10% of the nominal charge pressure. Where there is no container pressure indicator check that the system discharge indicator has not operated.	✓		✓	✓			
1.9	Mechanical release (including gas container valves and actuators)	Check that all release mechanisms, including drop weights, are undamaged, accessible and unimpeded.	✓		✓	✓			
1.10	Gas container enclosure	Check the gas container enclosure is accessible, adequately illuminate, ventilated and secured against unauthorised entry.	✓		✓	✓			
1.11	Automatic pneumatic controls	Check the integrity of all pneumatic piping and fittings.			✓	✓			
1.12	External alarm indication	Check that the local alarm indicator (bell or strobe light) clearly indicates the designated building entry point.			✓	✓			
1.13	Battery enclosure	Where vented batteries are used, check the battery enclosure for evidence of corrosion.			✓	✓			
1.14	Protected areas	Check that all of the protected areas enclosure complies with the original design.				✓			
1.15	Alarm sounders	Where bells are used as alarm-indicating			✓	✓			

		devices, check that they are marked in accordance with AS 1603.6							
1.16	Discharge nozzles	Check that all discharge nozzles are clear and unobstructed, correctly aimed and secure.			✓	✓			
1.17	Actuating devices (detectors and manual releases eg break glass)	Check all actuating devices and remote indicators for any condition that is likely to adversely affect their operation, such as excessive deposition of dust or coating of paint.			✓	✓			
1.18	Actuating devices	Check that all actuating devices are spaced and located in accordance with AS 4214.				✓			
1.19	Manual call point frangible element	Where manual call points use replaceable frangible elements, check that at least one replaceable element is available.			✓	✓			
1.20	Adjacent areas	Inspect all areas adjacent to the protected area to ensure that migration of gas does not create a hazard to personnel.				✓			
1.21	Change of use (survey)	Inspect the protected area to check that the risk has not changed from the original design ( eg combustible storage and equipment.)					✓		
1.22	Pipework	Check that all pipework, flexible connectors and manifolds are free from damage and adequately secured.			✓	✓			



1.23	Pressure-relief devices and vent valves	Check that the discharge from all pressure – relief devices and vent valves does not create a hazard to personnel.			✓	✓				
1.24	Check valves and directional valves	Check that all directional valves and check valves are correctly orientated.			✓	✓				
2.0	Test and Records									
2.1	Fire alarm	Simulate an alarm condition via an alarm zone, at the CIE, to the monitoring service (ADT) provider.	✓	✓	✓	✓	✓			
2.2	Fault	Simulate a fault condition at CIE to the monitoring service provider.	✓	✓	✓	✓	✓			
2.3	Isolate	Simulate an isolate/disable condition at the CIE to the monitoring service provider.	✓	✓	✓	✓	✓			
2.4	Reset	Test the operation of the reset function.	✓	✓	✓	✓	✓			
2.5	Visual indicators	Test the operation of all filament type visual indicators.	✓	✓	✓	✓	✓			
2.6	Aural indicators	Test the operation of the aural indicator.	✓	✓	✓	✓	✓			
2.7	External alarm indication	Test the operation of the local external alarm.	✓	✓	✓	✓	✓			
2.8	Control and indicating equipment (CIE)	Simulate an alarm (both zones for dual systems) and confirm the alarm activates the warning system and is capable of initiating a gas discharge.			✓	✓	✓			
2.9	"Do not enter" and	Simulate a system discharge and confirm the "do not enter" and			✓	✓	✓			

	"evacuate" VWDs	"evacuate" VWDs operate								
2.10	Discharge actuators and directional valves	Simulate a system operation and confirm that discharge actuators and directional valves operate correctly			✓	✓	✓			
2.11	Mechanical /manual discharge	Test operations of all manual release systems.			✓	✓	✓			
2.12	Mechanical automatic discharge e.g. Fusible links	Test operation of automatic discharge release systems.			✓	✓	✓			
2.13	Lock-off valve	Operate the system lock-off valve and confirm that the system inoperative VWD operates.			✓	✓	✓			
2.14	Cylinder contents liquefiable gases	Confirm by weighing, or using liquid level determination, that each gas container is discharged with the correct quantity of extinguishing agent, that is, any mass loss is not greater than 5% of the nominal charge mass in the case of hydrocarbons, and not greater than 10% of the nominal charge mass in the case of carbon dioxide.			✓	✓	✓			
2.15	HVAC shutdown	Simulate a discharge and ensure the HVAC shutdown function operates.			✓	✓	✓			
2.16	Local control station (LCS)	Operate the inhibit switch and confirm it prevents the electrical operation of the gas discharge valve			✓	✓	✓			

	Inhibit switch	actuators and illuminates the gas isolated indicator on the LCS and at the system control panel								
2.17	Local control station (LCS) manual operation	Operate the manual release and confirm that it operates the aural and the visual discharge alarms as well as the gas discharge valve actuators.			✓	✓	✓			
2.18	Automatic pneumatic controls	Test to ensure correct operation of all pneumatic controls.			✓	✓	✓			
2.19	Fire panel visual indicators	Test the operation of LED and alphanumeric indicators.				✓	✓			
2.20	Fire alarm systems	Where the fire alarm system is not part of an emergency warning system (EWS), test the operation of each warning device including visual alarm devices e.g. Strobes.				✓	✓			
2.21	Battery	When the battery has not been replaced in the previous two years, test the battery capacity.				✓	✓			
2.22	Ancillary controls	Test the operation of ancillary control functions and ensure that each controlled device can be correctly initiated.				✓	✓			
2.23	Actuating devices	For collective fire detection systems circuits, remove the last detector on the zone wiring from each alarm zone and confirm that a fault signal is registered at the CIE.				✓	✓			

2.24	Point-type heat detectors	Test the operation, including sensitivity, of all installed point type heat detectors				✓	✓		
2.25	Linear heat detectors	Test the operation, including sensitivity, of all installed linear heat detectors				✓	✓		
2.26	Point-type smoke detectors	Test the operation, including sensitivity, of all point type smoke detectors				✓	✓		
2.27	Linear smoke detectors	Test the operation, including sensitivity, of all linear smoke detectors				✓	✓		
2.28	Aspirating smoke detectors	Test sensitivity of all sampling points in aspirating smoke detectors				✓	✓		
2.29	Flame detectors	Test the operation, including sensitivity, of all flame detectors				✓	✓		
2.30	CO detectors	Test the operation, including sensitivity, of all CO detectors				✓	✓		
2.31	Manual call point	Test the operation of all installed manual call points				✓	✓		
2.32	System inoperative VWD	Confirm the system inoperative VWD operates for:				✓	✓		
		(a) A protected area detector circuit fault							
		(b) A protected area zone isolation				✓	✓		
		(c) Operation of the system inhibit switch				✓	✓		
		(d) A gas discharge circuit fault				✓	✓		
2.33	Agent release indicator	Simulate the operation of agent release detection device and confirm indication of agent release at the system control panel				✓	✓		





		(b) Record pressure at which pressure-relief vent operates.				✓	✓			
2.39	Gaseous system (interface test ( fire trip) see clause 11.2.4	(a) Conduct a functional system test with other interfaced fire systems (e.g. HVAC, EWS). (b) Verify that the interface functions in accordance with the building's systems interface schematic. Note It is recommended that the building owner coordinate testing the interfaced fire protection systems.				✓	✓			
3.0	Preventative Maintenance and Records Schedule									
3.1	Mechanical container actuator	Check operation and lubricate as necessary				✓	✓			
3.2	Remote mechanical release system	Check operation and lubricate as necessary				✓	✓			
3.3	Automatic mechanical release system	Check operation and lubricate as necessary				✓	✓			
3.4	Detector-sensing device with limited life time	Replace any actuator that will exceed its lifetime prior to the next scheduled maintenance.				✓	✓			
3.5	Pyrotechnic container actuator	Replace any detector-sensing element that will exceed its lifetime prior to the next scheduled maintenance.				✓	✓	✓		

3.6	Dampers	Clean dampers that are subject to the deposit of contaminants such as cooking oil, hot wax etc.				✓	✓		
3.7	Nozzles	Clean nozzles that are subject to the deposit of contaminants such as cooking oil, hot wax etc.				✓	✓		
3.8	Cylinder valve overhaul	Overhaul valve and replace seats and seals.				✓	✓		
3.9	Cylinder pressure test	Hydrostatically pressure test cylinders in accordance with AS 2030.1				✓	✓		
4.0	Survey and Records Schedule								
4.1	Inadvertent discharge	Check for enclosure alterations, changes in occupancy or operating environment, or other factors that could cause inadvertent discharge of the extinguishing agent.				✓	✓		
4.2	Leakage of agent	Check for enclosure alterations, changes in occupancy or operating environment, or other factors that could allow leakage of extinguishing agent from the protected area.				✓	✓		
4.3	System modification	Check for enclosure alterations, changes in occupancy or operating environment, or other factors that could require modification to the system.				✓	✓		
4.4	Enclosure alteration	When the enclosure has been altered, conduct				✓	✓		

		an additional check for compliance with design concentration and, if necessary, conduct an investigation									
--	--	--	--	--	--	--	--	--	--	--	--

**Notes:**

1. The contractor carrying out

**Notes:**

1. The Contractor carrying out maintenance work on the gaseous fire suppression system shall have current certification from a sprinkler system certifier (SSC) in accordance with NZS 4541:2007.
2. See drawings for hydrant system.

**9.1.6 AC Systems North and South Control Buildings Schedule of Maintenance – Three-Monthly Visit Split Systems**

- Plant –
  - a) Stop / start plant;
  - b) Check operating sequence
- Filter –
  - a) Clean or replace as necessary

- Indoor Unit –
  - a) Check fan bearings and lubricate as required;
  - b) Check condensate tray and lines;
  - c) Record D/B temperatures air On/Off coil.

- Outdoor Unit
  - a) Check On/Off switch;
  - b) Check crankcase heater;
  - c) Check refrigerant charge and leak test;
  - d) Check pressure and switch settings;
  - e) Check reversing valve operation

- Controls –
  - a) Check setting and calibration of controls;
  - b) Record zone temperatures

**Fans**

- Stop/ Start fan motor
- Check bearing temperatures
- Lubricate bearings if required
- Clean fan blades or impellor
- Check mounting brackets are secure

**Report on any corrosion present**

**Electrical –**

- a) Check starter & relay contacts;
- b) Check all connections for damage/ tightness;
- c) Check and record run amps & overload settings;
- d) Megger test 3 phase motors

**Visual / Filters**

Clean and replace filters as required

Carry out visual inspection of plant

**9.1.7 Cardax Security System for Control Buildings (Terrace and Mount Victoria Tunnels) – Three-Monthly Maintenance**

**Resettable Breakglass**

Trigger to ensure mechanism has not seized and alarm generated

**Power Supply Units**

Switch to battery backup and test battery recover rate

**Sealed Lead Battery**

Visual inspection; mains fail and battery low reporting  
10 sec load test (ensure after load voltage is >11.5v)

**Electromagnetic locks**

Check for secure mounting and alignment  
Bond sense operation and reporting  
DPS monitoring and reporting.

**Electric Mortice Locks**

Correct operation: REX; LCBM; Deadlatch  
Correct Reporting

**Physical mounting and spring return of handles.**

**T11 Readers**

Correct Operation  
Read range

**FT6000 Controllers/Cabinets**

**Power Supply inputs**

Controller operation

Terminal tightness

Tamper

Clean and tidy

Documentation

After scheduled maintenance checks have been carried out a detailed report is to be sent to the Tunnels Manager identifying any rectification work that was carried out.

### 9.1.8 Terrace Tunnel Vortechs Chamber



#### OPERATION AND MAINTENANCE GUIDELINES

Vortechs

Prepared by: Stormwater360

Auckland Office: 3/10 Canaveral Dr., Albany Auckland New Zealand

Telephone: (09) 476 5586 Facsimile: (09) 476 5582 [www.stormwater360.co.nz](http://www.stormwater360.co.nz)

#### Operation

##### Basic Operation

The Vortechs® System is a hydrodynamic separator designed to enhance gravitational separation of floating and settling materials from stormwater flows. Stormwater flows enter the unit tangentially to the grit (swirl) chamber, which promotes a gentle swirling motion. As polluted water circles within the grit chamber, pollutants migrate toward the center of the unit where velocities are the lowest. The majority of settleable solids are left behind as stormwater exits the grit chamber through two apertures on the perimeter of the chamber. Next, buoyant debris and oil and grease are separated from water flowing under the baffle wall due to their relatively low specific gravity. As stormwater exits the System through the flow control wall and ultimately through the outlet pipe, it is relatively free of floating and settling pollutants.

Over time a conical pile tends to accumulate in the center of the unit containing sediment and associated metals, nutrients, hydrocarbons and other pollutants.



Floating debris and oil and grease form a floating layer trapped in front of the baffle wall. Accumulation of these pollutants can easily be accessed through manholes over each chamber. Maintenance is typically performed through the manhole over the grit chamber.

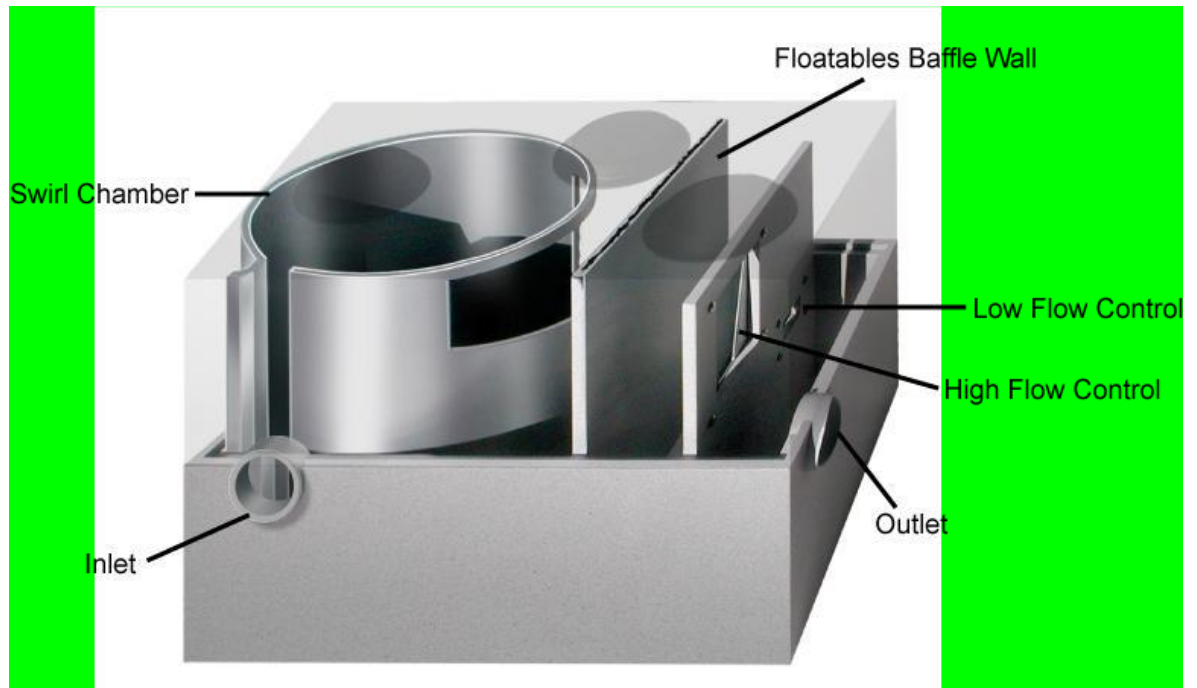


Figure 1. Components of the Vortechs

## Maintenance

The Vortechs System should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on-site activities than the size of the unit, e.g., unstable soils (construction sites) will cause the grit chamber to fill more quickly but regular sweeping will slow accumulation.

## Inspection

Inspection is the key to effective maintenance and is easily performed. Stormwater360 recommends ongoing quarterly inspections of the accumulated sediment. Pollutant deposition and transport may vary from year to year and quarterly inspections will help insure that systems are cleaned out at the appropriate time. It is very useful to keep a record of each inspection. A simple form for doing so is provided.

The Vortechs System should be cleaned when inspection reveals that the sediment depth has accumulated to within 150mm of the dry-weather water surface elevation. This determination can be made by taking 2 measurements with a stadia rod or similar measuring device; one measurement from the manhole opening to the top of the

sediment pile and the other from the manhole opening to the water surface. The System should be cleaned out if the difference between the two measurements is 150mm or less. Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.

**Cleaning**

Maintaining the Vortechs system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather. Cleanout of the Vortechs system with a vacuum truck is generally the most effective and convenient method of excavating pollutants from the system. If such a truck is not available, a "clamshell" grab may be used, but it is difficult to remove all accumulated pollutants with such devices.

In installations where the risk of large petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use adsorbent pads since they are usually cheaper to dispose of than the oil water emulsion that may be created by vacuuming the oily layer. Trash can be netted out if you wish to separate it from the other pollutants.

Accumulated sediment is typically evacuated through the manhole over the grit chamber. Simply remove the cover and insert the vacuum hose into the grit chamber. As water is evacuated, the water level outside of the grit chamber will drop to the same level as the crest of the lower aperture of the grit chamber. It will not drop below this level due to the fact that the bottom and sides of the grit chamber are sealed to the tank floor and walls. This

"Water Lock" feature prevents water from migrating into the grit chamber, exposing the bottom of the baffle wall. Floating pollutants will decant into the grit chamber as the water level there is drawn down. This allows most floating material to be withdrawn from the same access point above the grit chamber.

If maintenance is not performed as recommended, sediment may accumulate outside the grit chamber. If this is the case, it may be necessary to pump out all chambers. It is a good idea to check for accumulation in all chambers during each maintenance event to prevent sediment build up there.

Manhole covers should be securely seated following cleaning activities, to ensure that surface runoff does not leak into the unit from above.

**Vortechs System Inspection & Maintenance Log - Sample**

Model: 5000	Location: Smith Superstores, Sydney
-------------	-------------------------------------

Date	Water Depth to Sediment <sup>1</sup>	Floatable Layer Thickness <sup>2</sup>	Maintenance Performed	Maintenance Personnel	Comments
12/1/01	900	0	N/A	B. Johnson	Installed
3/1/02	700	Sheen	None	B. Johnson	Swept parking lot
6/1/02	600	Heavy Sheen	None		
9/1/02	500	25	Sorbent pads deployed to remove captured oil	S. Riley	Oil spill
12/1/02	300	Sheen	None	S. Riley	
4/1/03	150	10	Clean-out scheduled	S. Riley	Heavy floating debris
4/15/03	900	0	Grit Chamber evacuated	ACE Environmental Services	Cleanout completed
	SAMPLE SHEET				

The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. When the difference between the two measurements is 150mm or less, the system should be cleaned out.

For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of a spill, the system should be cleaned immediately.

### Vortechs System Inspection & Maintenance Log

<b>Model:</b>	<b>Location:</b>





