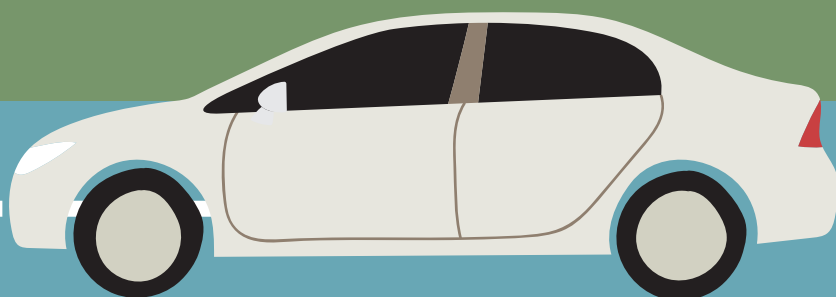


# One Network Road Classification (ONRC) Performance Measures



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# Introduction

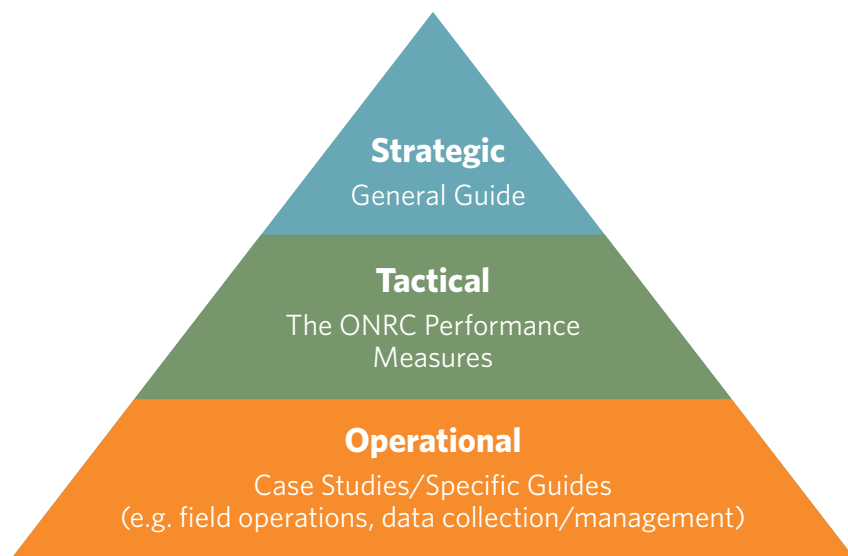
The One Network Road Classification (ONRC) was designed to standardise the performance of our roads throughout New Zealand, aiming to address historical inconsistencies, and promote economic growth.

This can only be achieved if all Road Controlling Authorities (RCAs) are monitoring and measuring their roads with the same tools and standards consistently over time.

These performance measures support that consistency. They have been developed by subject experts from the Road Efficiency Group (REG) – a collaboration between Local Government New Zealand and the New Zealand Transport Agency. When used with the ONRC Performance Measures online reporting tool, they are a significant resource to help asset managers better understand their network and tell their investment story.

Asset managers must use the performance measures when developing their business cases for the Regional Land Transport Plan. Regional Champions and experts from REG are available to support you. Asset managers should also read the ONRC Performance Measures General Guide, which provides strategic overview and context. Further guidance in the form of case studies will be provided for operational use of the ONRC, specific to the field operations and data management. Please visit [www.roadefficiency.govt.nz](http://www.roadefficiency.govt.nz) for more information.

When using the performance measures, it is important to remember that while there is an element of compliance, they are intended to form the backbone of a thinking process. The measures complement and interact with each other – you will find your investment story by considering the data across your network and in the national context, rather than focusing on individual performance measures in isolation. We have provided seed questions with each measure to assist.





## Safety

### Customer Outcome Performance Measures

#### **Customer Outcome 1: the number of fatal and serious injuries on the network**

**Aim:**

The road and roadside are becoming safer for road users.

**Measure:**

The total number of fatal and serious injuries each year on your network.

**Generate Report:**

The CAS system provides a file of crashes on each network each year to RAMM. This file can be loaded into your Asset Register (RAMM) to enable reporting by classification. As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The reporting tool provides calculation of a five-year trend.

**Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group. Are your fatal and serious injury crash rates trending up or down? Are crash rates trending differently within any classification?
2. Review your technical performance measures to establish contributing factors, for example do you have high numbers of night time crashes?
3. Is your crash data correctly recorded (crash location, contributing causes)?
4. What routes/locations are better or worse than the network as a whole?
5. Are your crash rates for the last 2 to 3 years reducing, or are they increasing?
6. If increasing, review alongside other safety data to determine the root cause.
7. If the injury rate has gone down, has anything your authority has done influenced this?
8. What are the learnings? Have you shared your learnings with others?

**Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## **Customer Outcome 2: collective risk (fatal and serious injury rate per kilometre)**

### **Aim:**

The roads and roadside are becoming safer for road users.

### **Measure:**

The total number of fatal and serious injuries per kilometre each year on the network.

### **Generate Report:**

As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The reporting tool calculates a risk rating for each classification on the network.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group. Are your risk ratings at the low or high end of the scale? Do you have a rating on an individual classification which is different to other networks?
2. Review your technical performance measures to establish contributing factors, for example do you have high numbers of night time crashes?
3. Is your crash data correctly recorded (crash location, contributing causes)?
4. What routes/locations are better or worse than the network as a whole?
5. Identify any actions required to address contributing factors.
6. If the collective rate has improved has anything the authority done influenced this?
7. What are the learnings? Have you shared your learnings with others?

### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## **Customer Outcome 3: personal risk (fatal and serious injury rate by traffic volume)**

### **Aim:**

The roads and roadside are becoming safer for road users.

### **Measure:**

The total number of fatal and serious injuries by traffic volume each year on the network.

### **Generate Report:**

As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The reporting tool calculates a risk rating for each classification on the network.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - Are your risk ratings at the low or high end of the scale?
  - Do you have a rating on an individual classification which is different to other networks?
  - Is there a disproportionate result in some classifications?
  - Is traffic count estimated data inaccuracy affecting the result?
2. Review your technical performance measures to establish contributing factors, for example high numbers of night time crashes.
3. Identify any actions required to address contributing factors.
4. Is your crash data correctly recorded (crash location, contributing causes)?
5. What routes/locations are better or worse than the network as a whole?
6. If the personal risk rating has improved has anything the authority done influenced this?
7. What are the learnings? Have you shared your learnings with others?

### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



# Safety

## Technical Output Performance Measures

### Technical Output 1: permanent hazards

#### **Aim:**

Permanent hazards are marked consistently across New Zealand.

#### **Measure:**

The number of permanent hazards that are not marked in accordance with national standards RTS-5 and MOTSAM. Inspect at least a 10% sample of each classification and record the number of non-compliances per ten kilometres for rural roads; per one kilometre for urban roads.

This audit is against the standards, not the condition the contractor is maintaining the hazard marking to.

#### **Generate Report:**

Input the number of faults and the length inspected per classification into the ONRC reporting tool; the ONRC reporting tool will generate the result.

#### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - Do your roads largely comply, or were there a number of instances where hazards were not appropriately marked?
  - Do you think the sample provided a true reflection of the wider network, or should you look at a larger sample area?
2. Review your safety outcome measures. Are your crash numbers trending upwards, or higher than your peers?
3. Could poorly marked hazards be contributing to crash rates on your network?
4. What routes/locations are better or worse than the network as a whole?
5. If there is an issue, is this related to implementing the appropriate standard or maintaining it?

#### **Action:**

Review your contract requirements for marking hazards on the network.

Translate problem, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



## Technical Output 2: temporary hazards

### **Aim:**

Workers and people participating in events on roads are kept safe.

### **Measure:**

The number of sites inspected and the number of audits compliant with COPTTM.

Audit temporary traffic management at work sites, event sites and temporary hazards.

### **Generate Report:**

Input the number of sites inspected and the number of audits compliant with COPTTM per classification into the ONRC reporting tool; the ONRC reporting tool will generate the result.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - Do your work sites, event sites and temporary hazard sites largely comply, or were there a number of sites which were non-compliant?
  - Do you think the sample provided a true reflection of the wider network and different times of the year, or should you look at a larger sample?
2. Review your safety outcome measures. Are your crash numbers trending upwards, or higher than your peers?
3. Could crashes associated with work sites be contributing to crash rates on your network?

### **Action:**

Review your traffic management approval and audit processes; as well as contract requirements for marking temporary hazards on the network.

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## Technical Output 3: sight distances

### Aim:

Drivers are able to navigate safely because they can see hazards, warning signs or delineation in time to respond.

### Measure:

The number of locations where sight distance or signs are obstructed by vegetation, unauthorised signs or other items placed within the road reserve. Inspect at least a 10% sample of each classification and record the number of instances per ten kilometres for rural roads; per one kilometre for urban roads.

The Road Maintenance Visual Guide provides examples of complying and non-complying situations.

### Generate Report:

Input the number of sites inspected and the number of audits compliant with COPTTM per classification into the ONRC reporting tool; the ONRC reporting tool will generate the result.

### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group.
  - Do your roads largely comply, or were there issues over a large percentage of your sample length?
  - Do you think the sample provided a true reflection of the wider network, or should you look at a larger sample area?
2. Review your safety outcome measures. Are your crash numbers trending upwards, or higher than your peers?
3. What routes/locations are better or worse than the network as a whole?
4. Could poor sight distances be contributing to crash rates on your network?
5. Do you need to undertake public education and/or enforcement to reduce unauthorised signs and other obstructions?

### Action:

Review your contract requirements for vegetation control on the network. Review your policy/bylaw requirements and enforcement processes.

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## Technical Output 4: loss of control on wet roads

### **Aim:**

Reduce the number of fatal and serious injuries through loss of driver control.

### **Measure:**

The number of fatal and serious injuries attributable to loss of driver control (including on wet roads), each year on your network.

### **Generate Report:**

As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The reporting tool calculates a five year trend.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - Do wet weather crashes represent a significant proportion of all crashes?
  - Are your loss of control in wet weather crash rates trending up or down?
  - Are crash rates trending differently within any classification?
  - Are your crash rates for the last five years reducing, or are they increasing?
  - What routes/locations are better or worse than the network as a whole?
2. Identify any actions to address contributing factors.
3. Do you have a skid resistance issue to address?
4. If the incidence of loss of control crashes has gone down, has anything the authority done influenced this?
5. What are the learnings? Have you shared your learnings with others?

### **Action:**

Assess your skid resistance data to ascertain if you understand the issue adequately.

Develop a targeted strategy to address problem sites/routes.

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## Technical Output 5: loss of driver control at night

### **Aim:**

Reduce the number of fatal and serious injuries in night time crashes.

### **Measure:**

The number of fatal and serious injuries which occur in crashes at night, each year on your network.

### **Generate Report:**

As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The ONRC reporting tool calculates a five year trend.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - Do night time crashes represent a significant proportion of all crashes?
  - Are your crash rates for the last five years reducing, or are they increasing?
  - Are crash rates trending differently within any classification?
  - Are night time crashes more prevalent in rural or urban areas?
  - Do you have a lighting policy? If so, what are the compliance levels like?
  - What routes/locations are better or worse than the network as a whole?
2. Identify any actions to address contributing factors.
3. If the night crash rate has gone down, has anything the authority done influenced this?
4. What are the learnings? Have you shared your learnings with others?

### **Action:**

Review your lighting policy and street light maintenance activities, check that delineation on your network complies with RTS 5.

Translate problem, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## Technical Output 6: intersections

### **Aim:**

Reduce the number of fatal and serious injuries at intersections.

### **Measure:**

The number of fatal and serious injuries at intersections each year on your network.

### **Generate Report:**

As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The ONRC reporting tool calculates a five-year trend.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - Do intersection crashes represent a significant proportion of all crashes?
  - Are your intersection crash rates trending up or down?
  - Are crash rates trending differently within/across any classifications?
  - Are intersection crashes more prevalent in rural or urban areas?
  - What routes/locations are better or worse than the network as a whole?
2. Identify any actions to address contributing factors.
3. If the number of fatal and serious injury crashes at intersections has gone down, has anything the authority done influenced this?
4. What are the learnings? Have you shared your learnings with others?

### **Action:**

Consider the result of Accessibility PM5 (road hierarchy priority).

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## Technical Output 7: hazardous faults

### **Aim:**

Reduce the number of maintenance related hazards on roads requiring evasive action by road users (e.g. detritus, ponding water, pot holes).

### **Measure:**

The number of hazardous faults which require evasive action by road users. Inspect at least a 10% sample of each classification and record the number of faults per ten kilometres for rural roads; per one kilometre for urban roads.

### **Generate Report:**

Input the number of faults and the length inspected per classification into the ONRC reporting tool; the ONRC reporting tool will generate the result.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
2. Do your roads largely comply, or were hazards identified?
3. Do you think the sample provided a true reflection of the wider network, or should you look at a larger sample area?
4. What routes/locations are better or worse than the network as a whole?
5. Could unmanaged hazards be contributing to crash rates on your network?

### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## Technical Output 8: cycle path faults

### **Aim:**

Reduce the number of maintenance related hazards on cycle paths requiring evasive action by cyclists (e.g. detritus, ponding water, pot holes, broken glass).

### **Measure:**

The number of cycle path hazards requiring evasive action by cyclists. Inspect at least a 10% sample of each classification and record the number of instances per ten kilometres for rural roads; per one kilometre for urban roads.

### **Generate Report:**

Input the number of faults and the length inspected per classification into the ONRC reporting tool; the ONRC reporting tool will generate the result.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
2. Do your cycle paths largely comply, or were hazards identified?
3. Do you think the sample provided a true reflection of the wider network, or should you look at a larger sample area?
4. What routes/locations are better or worse than the network as a whole?
5. Could unmanaged hazards be contributing to crash rates on your network?

### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

## Technical Output 9: vulnerable users

### **Aim:**

Reduce the number of fatal and serious injuries involving vulnerable users.

### **Measure:**

The number of fatal and serious injuries involving vulnerable users on your network.

### **Generate Report:**

As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The ONRC reporting tool calculates a five year trend.

### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
2. Do crashes involving vulnerable users represent a significant proportion of all crashes?
3. Are your crash rates involving vulnerable users trending up or down?
4. Are crash rates involving vulnerable users trending differently within/across any classifications?
5. Are crashes involving vulnerable users more prevalent in rural or urban areas?
6. What routes/locations are better or worse than the network as a whole?
7. Identify any actions to address contributing factors.

### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



## Technical Output 10: roadside obstructions

### Aim:

Roadside areas are maintained free from unauthorised obstructions and new hazards are prevented from developing.

### Measure:

The number of locations where there are unauthorised items placed within the road reserve. Inspect at least a 10% sample of each classification and record the number of instances per ten kilometres for rural roads; per one kilometre for urban roads.

The Road Maintenance Visual Guide provides examples of complying and non-complying situations.

### Generate Report:

Input the length inspected and the number of unauthorised obstructions into the ONRC reporting tool; the ONRC reporting tool will generate the result.

### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group.
  - Do your roads largely comply, or were there issues over a large percentage of your sample length?
  - Do you think the sample provided a true reflection of the wider network, or should you look at a larger sample area?
2. Review your safety customer outcome measures. Are your crash numbers trending upwards, or higher than your peers?
3. What routes/locations are better or worse than the network as a whole?
4. Could unauthorised items within the road reserve be contributing to crash rates on your network?
5. Do you need to undertake public education and/or enforcement to reduce unauthorised items within the road reserve?

### Action:

Review your contract requirements for safety zones on the network.

Review your policy/bylaw requirements and enforcement processes.

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



# Resilience

## Customer Outcome Performance Measures

### **Customer Outcome 1: the number of journeys impacted by unplanned events**

#### **Aim:**

The impact of unplanned events on journeys is minimised.

#### **Measure:**

The number of unplanned road closures and the number of vehicles affected by closures annually.

Record the number of unplanned road closures and calculate the total number of vehicles affected annually by classification.

#### **Generate Report:**

Enter the number of closures, and the calculated total number of journeys impacted, into the ONRC reporting tool.

#### **Assess, Evaluate and Challenge:**

1. Compare your results against your peer group. Are your road closures trending up or down?
2. Also compare your figures nationally – are more or fewer customers affected by closures on your network than on other networks?
3. Do you have a resilience plan, a communications plan, and an emergency response plan to manage unplanned events on your network?
4. Identify any actions to address contributing factors.
5. Identify actions to minimise the impact of closures on your customers.

#### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



### **Customer Outcome 2: the number of instances where road access is lost**

#### **Aim:**

Access to properties is available whenever practicable.

#### **Measure:**

The number of unplanned road closures and the number of vehicles affected by closures where there was no viable detour.

Record the number of unplanned road closures where there was no viable detour and calculate the total number of vehicles affected annually by classification.

#### **Generate Report:**

Input the length inspected and the number of unauthorised obstructions into the ONRC reporting tool; the ONRC reporting tool will generate the result.

#### **Assess, Evaluate and Challenge:**

1. Compare your results against your peer group. Are your road closures without viable detours trending up or down?
2. Also compare your figures nationally – are more or fewer customers affected by closures on your network than on other networks?
3. Are the road closures affecting lifeline routes and/or other detour routes?
4. Do you have a resilience plan, a communications plan, and an emergency response plan to manage unplanned events on your network?
5. Identify any actions to address contributing factors.
6. Identify actions to minimise the impact of closures on your customers.

#### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

 **There are no technical output performance measures for Resilience**



# Amenity

## Customer Outcome Performance Measures

### **Customer Outcome 1: Smooth Travel Exposure (STE) - roughness of the road (% of travel on sealed roads which are smoother than a defined threshold)**

#### **Aim:**

The smoothness of the journey reflects the ONRC classification of the road.

#### **Measure:**

The percentage of travel on roads smoother than the specified threshold for each classification. Measure the roughness of roads on your network and input this data into RAMM.

#### **Generate Report:**

The ONRC reporting tool will generate the result for the percentage of journeys which are on roads smoother than the threshold, by ONRC classification.

#### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group. Do you need to investigate your network further?
2. Look at your roughness data in RAMM to establish which roads are having the greatest impact on your results.
3. Is the problem confined to urban or rural roads?
4. Is the result affected by outlying data?
5. Are your traffic count estimates accurate, or could these be impacting on the % of vehicles calculated as travelling on each classification of road?

#### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



### Customer Outcome 2: peak roughness

#### **Aim:**

The smoothness of the journey reflects the ONRC classification of the road.

#### **Measure:**

The 85<sup>th</sup> and 95<sup>th</sup> percentile roughness of your roads.

Measure the roughness of roads on your network and input this data into RAMM.

#### **Generate Report:**

The ONRC reporting tool will generate a report identifying the 85<sup>th</sup> and 95<sup>th</sup> percentile roughness for each classification, as well as the five year trend.

#### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - How do those numbers relate to the previous year?
  - Is the trend increasing, decreasing or mixed?
2. Look at your roughness data in RAMM to establish which roads are having the greatest impact on your results.
3. Is the result affected by outlying data?
4. Is the problem confined to urban or rural roads?
5. What are your other condition indicators telling you?

#### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



# Amenity

## Technical Output Performance Measures

### Technical Output 1: roughness of the road (median and average)

#### Aim:

The smoothness of the journey reflects the ONRC classification of the road.

#### Measure:

The median and average roughness of your roads.

Measure the roughness of roads on your network and input this data into RAMM.

#### Generate Report:

The ONRC reporting tool will generate a report identifying the median and average roughness for each classification.

#### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group.
  - Is the trend changing?
  - If so, is the change appropriate?
2. Do you need to investigate your network further?
3. Look at your roughness data in RAMM to establish which roads are having the greatest impact on your results.
4. Is the problem confined to urban or rural roads?

#### Action:

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



### Technical Output 2: aesthetic faults

#### Aim:

Manage the number of faults that detract from the customer experience (e.g. litter, graffiti, damaged or non-functioning furniture).

#### Measure:

The number of aesthetic faults that detract from the customer experience. Inspect at least a 10% sample of each classification and record the number of instances of litter, graffiti etc. per ten kilometres for rural roads; per one kilometre for urban roads.

The Road Maintenance Visual Guide provides examples of complying and non-complying situations.

#### Generate Report:

Input the length inspected and the number of faults into the ONRC reporting tool; the ONRC reporting tool will generate the result.

#### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group.
2. Do you think the sample provided a true reflection of the wider network, or should you look at a larger sample area?
3. Do customer complaints indicate you have a problem that needs to be addressed?
4. Is your current maintenance regime satisfactory?

#### Action:

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



# Accessibility

## Customer Outcome Performance Measures

### **Customer Outcome 1: proportion of network not available to:**

#### **a. Class 1 heavy vehicles**

#### **b. 50MAX vehicles**

#### **Aim:**

The trucks that need to use roads with restrictions can do so.

#### **Measure:**

The proportion of each road classification that is not accessible to Class 1 Heavy Vehicles and 50MAX vehicles.

Identify the restrictions for Class 1 Heavy Vehicles on your network. Consider if there are any alternative routes around the restrictions, and if so are these an economically practicable alternative. Measure the length of each road classification that is not accessible to Class 1 Heavy Vehicles. Repeat this process for 50MAX vehicles.

#### **Generate Report:**

Input the length of inaccessible network, by ONRC classification, into the ONRC reporting tool for both classes of vehicle; the ONRC reporting tool will generate the result.

#### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
2. Are the restrictions impacting on the economic productivity of the area and region?
3. Does this have an impact on the agreed freight strategy for the region (e.g. SI freight strategy)?
4. Is the length of detour required appropriate across the different classifications?
5. Do you anticipate future issues with any of the existing bridges on your network which would drastically affect the status quo?
6. Are low cost initiatives like fords a viable alternative on lower volume roads to extend heavy vehicle coverage on the network?

#### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.





# Accessibility

## Technical Output Performance Measures

### Technical Output 1: accessibility

#### Aim:

Signage is fit for purpose in providing direction and guidance to road users.

#### Measure:

The number of instances where the road is not marked in accordance with national standards RTS-2 and MOTSAM and the Traffic Control Devices manual.

Inspect at least a 10% sample of each classification and record the number of instances where signs and markings do not comply per ten kilometres for rural roads; per one kilometre for urban roads.

#### Generate Report:

Input the length inspected and the number of faults into the ONRC reporting tool; the ONRC reporting tool will generate the result.

#### Assess, Evaluate and Challenge:

Do your roads largely comply, or were there a number of instances where signage was non-compliant?

1. Compare your results nationally and against your peer group.
2. Do you have a policy and rules for signage? (e.g. attractions, business etc)
3. Do you think the sample provided a true reflection of the wider network, or should you look at a larger sample area?
4. Does customer feedback indicate there is a problem?
5. Are there issues with wayfinding on your network?
6. Could poor wayfinding or excessive signage be contributing to crash rates on your network?

#### Action:

Translate problems, benefits and the response proposed into your business case.

If there are no issue to address, identify this in your AMP.



# Travel Time Reliability

## Customer Outcome Performance Measures

### Customer Outcome 1: throughput at indicator sites

#### Aim:

That traffic throughput is maximised on arterials and higher classifications in metropolitan areas to best satisfy demand.

#### Measure:

The hourly traffic volume during the peak morning hour and peak afternoon/evening hour.

Measure the vehicle throughput over an hour of the AM or PM peak for each key indicator site on each key route, or on each major leg of a key intersection.

#### Generate Report:

Input the throughput of the network, by ONRC classification, into the ONRC reporting tool for both. The ONRC reporting tool will generate the results.

#### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group.
2. Is effective capacity meeting demand, or are capacity constraints restricting good service for existing demand?
3. Are there trends in throughput and demand that will cause a loss of service quality if no action is taken?
4. Are current operational actions significantly improving throughput compared to the unmanaged situation?
5. Are there operational actions that could be taken or altered to improve effective capacity?
6. Are there minor work actions that could be taken to improve capacity?
7. Are there other actions that could be taken to modify demand?

#### Action:

Translate problems, benefits and the response proposed into your business case.

If there are no issue to address, identify this in your AMP.

⊘ There are no technical output performance measures for Travel Time Reliability



## Cost Efficiency Performance Measures

These measures provide an indication of the relative costs and efficiency of your network, and can be compared with other networks. They relate to sealed road surfacing and pavements, unsealed roads, and National Land Transport Programme funded maintenance and renewal costs.

These cost efficiency measures need to be considered alongside the customer outcome and technical output measures, as they provide a richer picture in combination than when considered individually.





## Cost Efficiency Performance Measures

### Cost Efficiency 1: pavement rehabilitation

- a. Length (lane km)
- b. Area (m<sup>2</sup>)
- c. Cost (\$)
- d. Average life achieved

#### Aim:

Demonstrate that pavement rehabilitation on the network is timed to minimise whole-of-life cost while delivering the required customer outcomes.

#### Measure:

The total quantity and cost of pavement rehabilitation that has been undertaken over the previous year as renewal work (lane km and m<sup>2</sup>), by classification, and the average lives achieved for these pavements.

#### Generate Report:

*Note: Automatic reporting from RAMM is not available in the ONRC reporting tool as at August 2016 due to inconsistency in the way data is recorded by RCAs and/or RAMM functionality.*

Input the quantities (lane km and m<sup>2</sup>) and cost into RAMM by classification. The ONRC reporting tool will generate reports by ONRC classification.

#### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group.
2. How do the proportions/quantities compare over a period of time?
3. What does the performance of the network (e.g. condition, cost, average lives etc) compared to your peers indicate about your renewal programme?
4. How do you demonstrate the robustness of your programme?
5. How do you demonstrate the robustness of your individual treatments?
6. Is the programme sustainable?
7. Have you delivered the rehabilitation that you had planned to do – why or why not?
8. Have the agreed levels of service been delivered?
9. How does this impact on the surfacing programme?
10. How does the surfacing programme impact on the pavement management programme?



## Cost Efficiency Performance Measures

### Cost Efficiency 2: chipseal resurfacing

**a. Length (lane km)**

**b. Area (m<sup>2</sup>)**

**c. Cost (\$)**

**d. Average life achieved**

#### **Aim:**

Demonstrate that chipseal resurfacing on the network is timed to minimise whole-of-life cost while delivering the required customer outcomes.

#### **Measure:**

The total quantity and cost of sealed road chipseal resurfacing undertaken over the previous year (lane km and m<sup>2</sup>), and the average lives achieved for these surfaces.

#### **Generate Report:**

Input your chipseal resurfacing quantities and cost into RAMM. The ONRC reporting tool will generate reports by ONRC classification.

First or second cost seals should also be reported where they create significant variances.

#### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group.
  - How do the proportions/quantities compare with your peers over time?
  - What does the performance of the network compared to your peers indicate about your renewal programme (e.g. condition, costs, average lives etc)?
2. How do you demonstrate the robustness of your programme?
3. How do you demonstrate the robustness of your individual treatments?
4. Is the programme sustainable?
5. Have you delivered the resurfacing that you had planned to do - why or why not?
6. Have the agreed levels of service been delivered?
7. How does this impact on the pavement management programme?
8. How does the pavement management programme impact on the surfacing programme?

#### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



## Cost Efficiency Performance Measures

### Cost Efficiency 3: asphalt resurfacing

- a. Length (lane km)
- b. Area (m<sup>2</sup>)
- c. Cost (\$)
- d. Average Life Achieved

#### Aim:

Demonstrate that asphalt resurfacing on the network is timed to minimise whole-of-life cost while delivering the required customer outcomes.

#### Measure:

The total quantity and cost of asphaltic sealed road resurfacing that has been undertaken over the previous year (lane km and m<sup>2</sup>), and the average lives achieved for these surfaces.

#### Generate Report:

Input your asphalt resurfacing quantities and costs into RAMM. The ONRC reporting tool will generate the report by ONRC classification.

#### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group.
  - How do the proportions/quantities compare with your peers over a period of time?
  - What does the performance of the network compared to your peers indicate about your renewal programme (e.g. condition, costs, average lives etc)?
2. How do you demonstrate the robustness of your programme?
3. How do you demonstrate the robustness of your individual treatments?
4. Is the programme sustainable?
5. Have you delivered the resurfacing that you had planned to do - why or why not?
6. Have the agreed levels of service been delivered?
7. How does this impact on the pavement management programme?
8. How does the pavement management programme impact on the surfacing programme?

#### Action:

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



## Cost Efficiency Performance Measures

### Cost Efficiency 4: unsealed road metalling

- a. Length (lane km)
- b. Area (m<sup>2</sup>)
- c. Cost (\$)
- d. Average Life Achieved

#### Aim:

Demonstrate that metalling on unsealed parts of the network is timed to minimise whole-of-life cost while delivering the required customer outcomes.

#### Measure:

The total quantity and cost of metalling that has been undertaken over the previous year as renewal work (lane km and m<sup>3</sup>), and the average lives achieved for these surfaces.

#### Generate Report:

*Note: Automatic reporting from RAMM is not available in the ONRC reporting tool as at August 2016 due to inconsistency in the way data is recorded by RCAs and/or RAMM functionality.*

Input the quantities (lane km and m<sup>2</sup>) and cost into RAMM. The ONRC reporting tool will generate the reports by ONRC classification.

#### Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group. How do the proportions/quantities compare with your peers over a period of time? What does the performance of the network compared to your peers indicate about your renewal programme (e.g. average lives, cost etc)?
2. How do you demonstrate the robustness of your programme?
3. How do you demonstrate the robustness of your individual treatments?
4. Have you delivered the works that you had planned to do - why or why not?
5. Have the agreed levels of service been delivered?

#### Action:

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



## Cost Efficiency Performance Measures

### Cost Efficiency 5: overall network cost, and cost by work category

#### a. \$/lane km

#### b. \$/vkt

##### **Aim:**

That service levels and costs become consistent nationally across like classifications, with reasonable variation for local factors.

##### **Measure:**

The overall cost per km and vkt of routine maintenance activities, and cost by work category on each road network for the financial year.

##### **Generate Report:**

The cost per km and vkt for each work category, and overall maintenance and renewal cost for each network will be provided by the New Zealand Transport Agency.

*Note: Costs are unable to be provided by classification as at August 2016 due to inconsistencies in the way Road Controlling Authorities record cost information.*

##### **Assess, Evaluate and Challenge:**

1. Compare your results nationally and against your peer group. Are your costs lower, similar or higher than your peer group?
2. How do the costs compare with what you would expect?
3. Is the programme sustainable?
4. Have you done what you had planned to do - why or why not?
5. Have the agreed levels of service been delivered?

##### **Action:**

Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.



