STAFF REPORT

TO: Chairman and Members Engineering Services Committee

FROM: Gary Clark, Transportation Manager

DATE: 30 September 2010

REFERENCE: R860

SUBJECT: **Road Delineation Policy – RESC10-09-04**
Report prepared for meeting of 30 September 2010

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1. PURPOSE

1.1 The purpose of this report is to recommend to the Committee the adoption of the attached proposed Road Delineation Policy. Delineation is a term used to describe elements used to provide guidance to motorists using roads. Such elements include road markings, signage and raised pavement markings.

1.2. A treatment that enhances the selection of the appropriate vehicle path and speed or position to allow a movement to be carried out safely and efficiently. It could include road marking, raised pavement markers (cats eyes), traffic signs, chevron signs, and edge marker posts.

1.3 Attached to this report is a copy of Council's proposed Delineation Standard and maps showing the road delineation hierarchy. The maps show graphically the proposed hierarchy. However if required, a list of road names in order of road hierarchy can be provided.

2. BACKGROUND

2.1 A driver's prior expectations about the standard of road markings and delineation are a major factor in his or her ability to negotiate the road environment safely. While it is important to ensure that a road is designed to a consistent standard, there are locations on our network that due to historical, physical or financial constraints, where this has not occurred. When this happens roading engineers must rely on road markings, signs and other delineation devices to advise drivers of changes in the road environment.

2.2 If these road markings, signs or delineation devices are not provided, or not used in a consistent manner, driver expectations are not met and the chances of a motorist entering a hazard at too great a speed increase. The inconsistent use of markings or devices may also result in the driver misinterpreting the visual message intended.

2.3 Based on the Government's Road Safety Strategy 2010-2020 to reduce the number of road fatalities and injuries over the ensuing years, it was timely to review Council's

current delineation standard to see if some gains could be made by delineating our roads more consistently.

2.4 Council currently has a road delineation guideline set-out in its Safety Management Strategy which is based on the RTS 5 document *Guidelines for Rural Road Marking & Delineation* published by Transit NZ in 1989.

2.5 The current delineation standard is based on roading hierarchy and traffic volume. The hierarchy is based on that developed for Council's Tasman Resource Management Plan and mirrored in Council's Roading Asset Maintenance Management System (RAMM).

2.6 The review team made up of both Council and MWH roading staff first went about developing a delineation hierarchy that reduced the number of roading hierarchy categories such as Arterials, Collector, Distributor, Local Access Roads and Local Access Places that the old guideline was based on. This reduced the number of categories from five to three. Further to this, the arterial road delineation category was expanded to include significant tourist routes.

2.7 The following are the new delineation hierarchy categories including lengths. Note these categories are only for delineation purposes and do not change the roading hierarchy developed for the Tasman Regional Management Plan.

- Arterial/Tourist – 221km
- Collector Roads – 177km
- Local Roads – 564km

2.8 One of the issues confronting the existing roading network is the inconsistency that exists particularly with edge marker posts. Whilst some roads have them others do not and many upgrades are only undertaken as funds permit or associated with a project on an isolated length. Therefore by ensuring roads which are seen as the major routes have their delineation set to a high consistent standard and well maintained will provide drivers with a clear message as to the function of the particular road and hence the level of driver assistance through delineation that can be expected.

2.9 The road environment very much sets the pace for drivers and where good sight lines are provided gives drivers confidence, likewise with delineation. If the road is of suitable width with good wide shoulders and well delineated, this will allow drivers to achieve the appropriate safe legal speed for that road section. Where roads have a lower delineation, this is more likely to leave drivers less confident and hence travel at a lower speed than if the same road was delineated to a higher standard, irrespective of how suitable the road geometry including width and vertical/horizontal alignment may be. Particularly on local rural roads the road width and alignment has generally had very little improvement from the way it was prior to first being sealed may be 40 or more years ago. While cars are being made safer, roads generally are only being maintained rather than being re-built and hence the driver on the day of travel is the variable which still makes the decisions of the situation ahead and hence sets the risk. Other than changing the road alignment, the delineation is one of the only options open to convey to drivers the appropriate course of action.

3. POLICY PROPOSAL

3.1 The attached policy streamlines and rationalises the number of road hierarchy types and levels of delineation. The key delineation items for each of the delineation hierarchies are discussed below:

3.2 The outcome once fully implemented will create a more consistent approach to delineation that should clearly convey to drivers information about the road and how they are expected to drive.

3.3 Urban Roads

Urban roads will be treated with centre lines for the arterial and collector roads with local access roads having these in isolated locations such as sharp curves only. Intersection controls are installed on side roads for arterial and collector roads. For local roads, intersection controls will depend on the intersection configuration and safety issues. For example, cross-road intersections will have control on at least two of the legs, which they presently do. Lane lines and park limit lines may be used in certain locations where specific traffic management is required, for example outside a school or shopping precinct.

3.4 Rural, Arterial and Tourist Routes

Roads such as those identified as Rural Arterial or Tourist Routes will be delineated to a high standard as these roads generally carry the higher traffic volumes or in the case of tourist roads are more likely to have the greater numbers of drivers with less confidence driving New Zealand roads. Tourists driving into the district will typically come via the State Highway network which has a high level of delineation. The Council's Tourist Route standard proposes a similar level to provide consistency for this user group.

3.5 Standard delineation features for Arterial and Tourist category roads will include:

• Centre line
• Edge Lines – 100mm Wide
• RRPM's
• Edge Marker Posts
• Full markings for Single Lane Bridges
• Flag Lights
• Hazard Markers (where required)
• Intersection Controls – on all side roads
• Curve Warning Signs (where warranted)
• Road Name Blades with larger 160mm lettering
• Advance Intersection Signage
• Chevrons
• Guardrails (where warranted)

3.6 Rural Collector Roads

The difference in delineation of Collector Roads compared to that of Arterial and Tourist Routes is they will only have edge marker posts (EMP's) at curves, and raised pavement reflective markers (RRPM's) commonly known as cats eyes along the centre line where night time safety issues are identified.

3.7 Standard delineation features for Collector Roads will include:

• Centre line
• Edge Lines - 75mm Wide
• RRPM's – at locations with safety issues
• Edge Marker Posts – isolated
• Full markings for Single Lane Bridges
• Hazard Markers (where required)
• Intersection Controls – on all side roads
• Curve Warning Signs (where warranted)
• Road Name Blades with 120mm lettering
• Chevrons
• Sight rails most likely instead of Guardrails (where warranted)

3.8 Rural Local Roads

Local roads either sealed or gravel will be delineated to a lesser standard than Arterial, Tourist Routes and Collector Roads. Local roads will only have road markings and other delineation devices such as signs due to safety issues such as a sharp curve that are significantly different to the remainder of the route.

3.9 Standard delineation features for Local Roads will include:

• Centre line – Isolated due to road alignment
• Edge Lines – Isolated due to safety issues
• Edge Marker Posts – Isolated sections due to safety issues including road alignment
• Full markings for Single Lane Bridges where practicable
• Hazard Markers (where required)
• Intersection Controls – on main road where required or safety issue
• Curve Warning Signs (where warranted)
• Road Name Blades with 120mm lettering
• Chevrons
• Sight rails most likely instead of Guardrails (where warranted)

3.10 Cost Expectations

The cost of implementing the proposed changes for the road marking and edge marker post portion of the policy will be funded from either Traffic Services or Minor Road Improvement budgets, both subsidised by the New Zealand Transport Agency. Over time it is expected that due to there being less road marking but a higher standard of edge marker post maintenance required, that changes in the delineation standard will have a cost neutral effect on future budgets.

3.11 Roadside Spraying

One of the benefits of the reduction of edge marker posts on the local road network is that there will be less spraying required.

3.13 Timing

It is anticipated that this proposal will take many years to fully implement as the road marking can only be removed cost effectively by resealing. The average reseal interval is in the order of eight to 10 years. The changes to the signs and edge marker posts will occur as part of the general maintenance cycle.

4. RECOMMENDATION

4.1 That the Engineering Services Committee receive the Delineation Upgrade Policy report RESC10-09-04.

4.2 THAT the Engineering Services Committee approves implementation of the Delineation Policy as outlined in the report RESC10-09-04.

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