

Vehicle Dimensions and Mass Amendment 2010

Purpose

The purpose of this paper is to provide the Board with an update on the Auckland Transport cost implications with respect to the initiatives of the Land Transport Rule: Vehicle Dimensions and Mass Amendment 2010 on existing roading and bridge infrastructure.

Executive Summary

This paper provides the Auckland Transport Board with an update on progress in identifying the issues on existing infrastructure surrounding the introduction of Land Transport Rule: Vehicle Dimensions and Mass Amendment 2010.

Reviews have been undertaken by consultants which detail the impact upon road pavement maintenance costs, potential bridge strengthening and intersection geometry.

The initial results have identified increased liabilities for road pavements, an immediate need to strengthen three bridges and no immediate action required to address issues with intersection geometry.

Background

On 1 May 2010, the Land Transport Rule: Vehicle Dimension and Mass 2010 came into effect. This rule change provides for permits to be issued by Road Controlling Authorities for High Productivity Motor Vehicles (HPMV) to operate on the Road Network with the expectation that this will increase the efficiency and productivity of the freight moving industry. HPMV vehicles are defined as those having a loaded weight in excess of 44 tonnes, and the rule change thereby allow greater loads on the network, but results in fewer vehicle movements. It has been anticipated that as a result of the rule change both roads and bridges on the Auckland Transport Network will be affected. Accordingly a joint project with NZTA has been initiated to assess the ability of existing roads and bridges to accommodate the increased loading.

To understand the impact of the rule change three reviews have been undertaken:

- 1) Assessment of increased pavement maintenance costs
- 2) Assessment of the requirement for bridge strengthening
- 3) Assessment of existing intersection geometry

The outcome of these reviews informed, in consultation with the freight industry, the identification of an initial tranche of nine potential HPMV routes. These are identified in Attachment 1 and were selected on the basis that they were the most acceptable routes to Auckland Transport.

Infrastructure Review

1) Pavement Maintenance Costs

The assessment of the impact of the rule change on the road pavement identified that there were likely to be increased maintenance costs in the first 10 years of around \$154,880, decreasing to \$122,565 over the subsequent 10 years.

Route	Local Road Route Length (km)	Increased Pavement Maintenance cost Yr 1 to 10 (\$/km/yr)	Total Annual Maintenance Cost Increase
1	6.6	\$1,250	\$8,250
2	7.2	\$6,400	\$46,080
3	4.5	\$400	\$1,800
4	4.1	\$400	\$1,640
5	6.9	\$450	\$3,105
6	1.1	\$3,100	\$3,410
7	13.4	\$3,150	\$42,210
8	9.2	\$3,500	\$32,200
9	3.9	\$4,150	\$16,185
Total	56.9 km		\$154,880

Route	Local Road Route Length (km)	Increased Pavement Maintenance cost Yr 10 to 20 (\$/km/yr)	Total Annual Maintenance Cost Increase
1	6.6	\$700	\$4,620
2	7.2	\$5,300	\$38,160
3	4.5	\$100	\$450
4	4.1	\$100	\$410
5	6.9	\$100	\$690
6	1.1	\$1,450	\$1,595
7	13.4	\$2,750	\$36,850
8	9.2	\$3,350	\$30,820
9	3.9	\$2,300	\$8,970
Total	56.9 km		\$122,565

*Costs are indicative

These costs will manifest themselves through greater routine maintenance expenditure along with shorter pavement renewal and replacement intervals. Where considered appropriate during renewal or replacement work, increased pavement thicknesses will be designed resulting in a greater pavement life and less frequent intervention. This will, however, increase the initial capital cost of the project.

2) Bridge Strengthening

The assessment of the rule change on bridges identified 3 bridges that would require strengthening.

Bridge Name	Location	Route	Preliminary estimate of cost of Strengthening
Lockwoods Bridge	Hunua Road	7,8	\$100,000
Slippery Creek Bridge	Great South Rd (Pahurehure/Drury)	2,3,4,9	\$400,000
Sylvia Park Over-Rail Bridge	Mt Wellington Highway	2,8	\$500,000
Total			\$1,000,000

*Costs are indicative

It is anticipated that subject to funding the capital cost of the required bridge strengthening work would be spread across a number of financial years depending on the relative priority within the fiscal envelope. However, until the bridge strengthening work is undertaken restrictions on use will need to be placed on HPMV operators on five out of the nine routes.

It is to be anticipated that as the HPMV routes are expanded and further analysis of the existing bridge stock undertaken, further bridges will be identified which will require strengthening.

3) Intersection Geometry

The swept path of a HPMV vehicle manoeuvring through a junction will be no different to vehicles already operating on the road network and such that no immediate remedial action is required. Notwithstanding this, it is intended that the findings of this review will be used to define and prioritise high risk junctions that may require improvements where existing issues may be escalated.

Funding

There is no currently identified funding for the increase in pavement maintenance cost or for the bridge strengthening required such that the increased pavement maintenance cost would need to be managed within future maintenance and renewal budget allocations.

It is proposed to fund the bridge strengthening work through a combination of NZTA subsidy and local contribution and the required funding has been identified in the programme of Capital Works.

Risks

It is unlikely that the prioritisation framework adopted by Auckland Transport will give this project sufficient priority to program delivery within the foreseeable future. With the introduction of the legislation in 2010 there is an expectation in the freight industry that HPMVs will have access to the network. Without programming these works there is a risk that AT will be seen as providing economic constraint against the legislations and prejudice the outcomes envisaged by the Land Transport Rule.

Next Steps / Key Issues

It is intended that the Overweight Vehicle permit system will be developed for all bridges, with a priority given to those located on the HPMV routes. Subject to operator compliance this will ensure that HPMV's only access elements of the roading network with bridges that have been assessed to accommodate the increased loading. Where requests are received to use other parts of the network for HPMV, then these will be considered on a case by case basis.

The next phase of the project is to prioritise the identified bridge strengthening works into the Auckland Transport project portfolio and seek funding accordingly.



Recommendation

That the Auckland Transport Board:

- i) Receives this report
- ii) Notes the restrictions that will need to be replaced on some HPMV routes until bridge strengthening work is undertaken.
- iii) Notes the potential increased routine maintenance and renewal costs associated with the HPMV routes.
- iv) Endorses the inclusion of bridge strengthening projects into the AT project portfolio for prioritisation.

Attachments

Attachment 1 - Identified HPMV routes

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