

Attachment 1.

Electric vehicles (EVs) in special vehicle lanes update

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Draft Energy & Innovation Bill (27 October 2016)²

- Overview

- The Energy and Innovation Bill is an omnibus bill that aims to:
 - Amend the Land Transport Act 1998 and the Road User Charges Act 2012 to:
 - Enable road controlling authorities (RCA) **to make bylaws to provide electric vehicles (EVs) to access to bus and high occupancy vehicle lanes**
 - Extending the road user charge exemption to include heavy electric vehicles
 - Amend the Electricity Industry Act 2010 and the Energy (Fuels, Levies, and References) Act 1989 to allow the Government, through the Energy Efficiency and Conservation Authority (EECA), to focus levy funding on the areas where the greatest impact can be made
 - Amend the Electricity Industry Act 2010 to clarify how electricity industry legislation applies to secondary networks (as a growing business model in the sector).
 - **Submissions due on 1 Feb 2017**

Definition: Electric Vehicles

Currently 1,049 EVs registered in Auckland and 1,902 EVs registered in NZ

- **An electric vehicle is defined as**

1. **Battery electric vehicles (BEVs)** – 670 in Auckland - purely electric fuelled by battery (Nissan Leaf, Renault Zoe and Tesla S, Renault Kangoo and Nissan eNV200 vans also available in New Zealand).
2. **Plug-in hybrid electric vehicles (PHEVs)** – 379 in Auckland - have two engines – one battery, the other is petrol or diesel (Mitsubishi Outlander PHEV, BMW i3 (range extender model) and Audi e-tron).

Defined by draft Energy and Innovation Bill (2016)

Definitions: Special Vehicle Lanes (SVLs)

Clause 1.6 of the Land Transport (Road User) Rule 2004 and defined by draft Energy Innovation Bill (2016)

Special vehicle lane means a lane defined by signs or markings as restricted to a specified class or classes of vehicle; and includes a bus lane, a transit lane, a cycle lane, and a light rail vehicle lane

Bus lane means a lane reserved by a marking or sign installed at the start of the lane and at each point at which the lane resumes after an intersection for the use of—

- (a) buses; and
- (b) cycles, mopeds, and motorcycles (unless 1 or more are specifically excluded by the marking or sign)

Transit lane means a lane reserved for the use of the following (unless specifically excluded by a sign installed at the start of the lane):

- (a) passenger service vehicles:
- (b) motor vehicles carrying not less than the number of persons (including the driver) specified on the sign:
- (c) cycles:
- (d) motorcycles:
- (e) mopeds

Draft Energy and Innovation Bill: EVs in SVLs

– Opportunities for AT

1. Supporting the Minister's policy to increase the uptake and visibility of EVs in Auckland and NZ
2. Opportunity to collaborate with NZTA on joint trials to encourage the uptake of EVs
3. Minister sees EVs in bus lanes as a low-cost, but strong incentive that could be effective in phasing EVs into NZ, and creating technological change

Draft Bill: EVs in SVLs – Challenges for AT

1. Adverse impacts on bus productivity, network efficiency and safety on an already congested network (e.g. on Northern Busway, bus and transit lanes supporting the New Network)
2. Increases safety risks, has capacity and operational costs, impractical for in-line stops & stations
3. Difficulty and cost of enforcement - differentiating EVs from others, encouraging non compliant behaviour, costs of enforcement, signage and markings, significant increase in customer complaints.
4. Related enforcement concerns with other legislative changes (allowing Small Passenger Transport Service Vehicles in transit lanes) happening at the same time
5. Decreases people movement capability and bus scheduling efficiency

As a result this potentially undermines the Auckland Plan's objective to transform PT to support growth and to increase PT mode share where it reduces congestion (ATAP)

Other examples

1. Overseas

- Oslo has implemented EVs in bus lanes alongside strong policy incentives. EV uptake has increased however, PT use has reduced and EVs outnumber buses in bus lane. Oslo officials struggling politically to remove EVs from bus lanes and legislation has now been passed to remove EVs from bus lanes in Norway
- Newcastle and Nottingham in the UK are investigating putting EVs in bus lanes. However, public outcry has yet to allow the RCAs to implement the proposal.
- A few USA cities have successfully implemented EVs in transit lanes on motorways not on local roads

2. In New Zealand

- No other Road Controlling Authorities, that we are aware of, are supportive of EVs in bus lanes/transit lanes
- Wellington Regional Council and Canterbury Regional Council have publicly said they will not support EVs in bus lanes/transit lanes

Related concerns – LTA Bill

- The **Land Transport Amendment Bill (LTA)** proposes that taxis and all other SPSVs (such as Uber) will be entitled to use transit lanes, regardless of whether they are carrying passengers or not. This is proposed to be introduced by mid-2017
- Other road users may observe SPSVs using a transit lane and presume the lane is open to them to use also (most transit lanes operate for certain time periods).
- AT may use its discretion to waive infringements in certain circumstances, but determining what amounts to genuine driver confusion will require additional time and resources (including checking compliance for SPSVs)
- If transit lanes become too congested or unsafe, AT may be required to:
 1. Exclude SPSVs from transit lanes;
 2. Convert transit lanes into bus lanes (which will impact on commuters who have opted to car pool);
- There will be consequential changes to Traffic controls that will require public consultation and works, costs to be borne by AT
- AT may need to conduct an information and awareness campaign for road users in advance of the implementation of the proposed changes to minimise confusion which will also add to costs

Recommended Position

1. EVs should **not** be allowed in bus lanes due to the potential significant impact on the New Network. Bus lanes are already nearing capacity flows on the Isthmus, refer appendices.
2. Trial EVs in **all** transit lanes (T2 and T3 lanes) (currently 10 in Auckland) for 1 year. This will provide a robust evidence base to assess the impacts
3. Develop AT's response to the draft Energy and Innovation Bill by 1 February 2017
4. Revisit current special lane policy and develop clear policy guidelines for EVs in special vehicle lanes
5. Work with NZTA and MoT on a trial of EVs in T2 and T3 lanes via a ToR. This will include:
 - Further investigation into the costs / benefits / impacts of allowing EVs in transit lanes
 - Development of thresholds
 - Assessment of the impacts, costs and legal implications
 - Consideration of concerns from SPSVs impacts on transit lanes outlined in AT submission on the LTAA.

Supporting Information

Appendix 1: Bus Level of Service in CBD / Isthmus

Isthmus *Bus lanes in central Auckland are all nearly at capacity...EVs will further increase congestion*



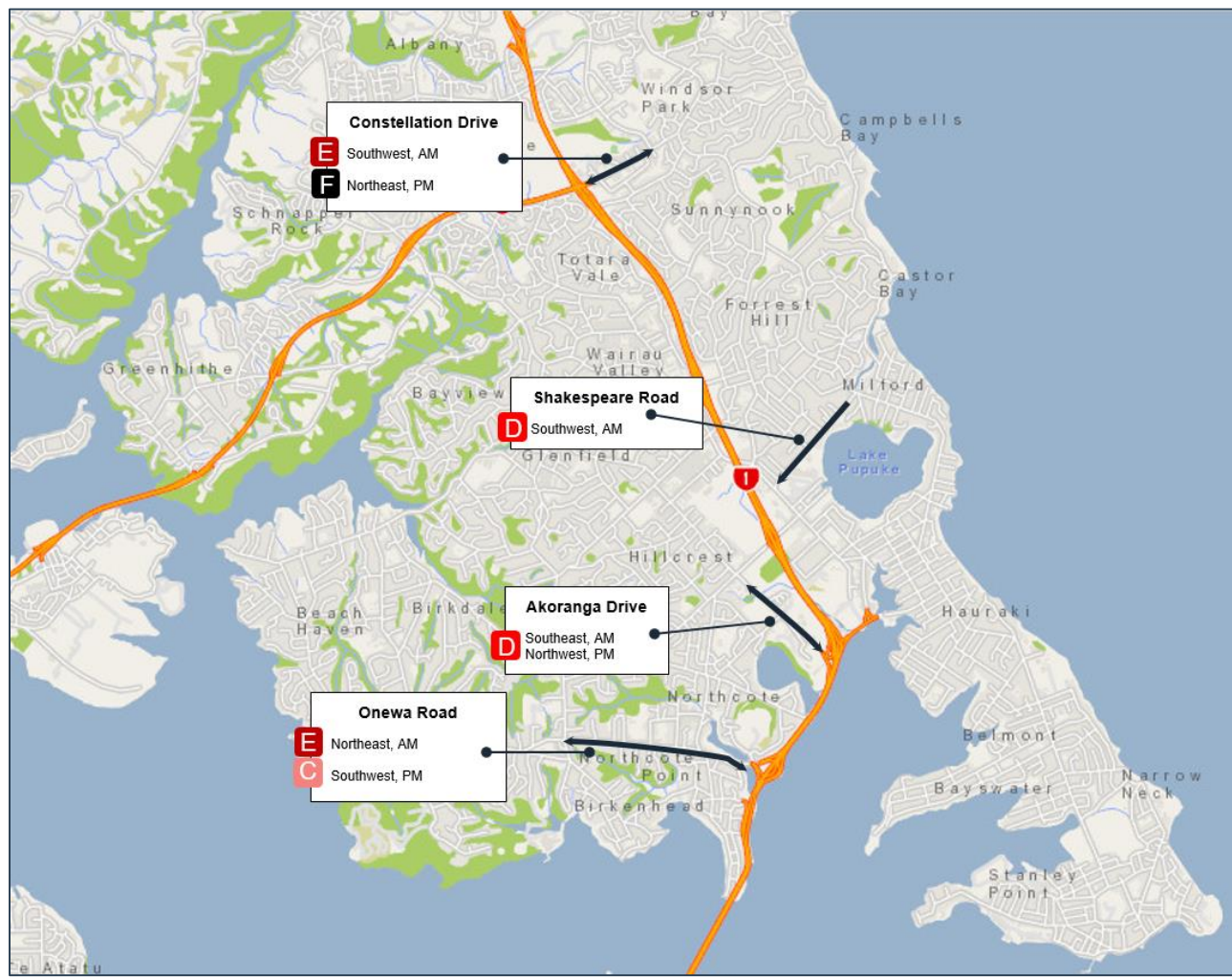
C: stable flow, at or near free flow

D: approaching unstable flow

E: unstable flow, operating at capacity

F: forced or breakdown flow

Appendix 2: Bus Level of Service on three Auckland Transit Lanes



C: stable flow, at or near free flow

D: approaching unstable flow

E: unstable flow, operating at capacity

F: forced or breakdown flow

Appendix 3: Threshold impacts of EVs on SV Lanes

- Allowing additional vehicles (such as EVs and SPSVs) to use **Special Vehicle lanes** may degrade productivity, resulting in increased overall person trip delays.
- Allowing additional vehicles into transit lanes would result in some T2 lanes becoming T3 lanes, and some T3 lanes needing to become bus lanes e.g. Onewa Road T3 lane using the current special lane policy
- Short term impacts may be negligible, but as EV & SPSV numbers grow by between **30 and 50 per hour**, detrimental effects to the network will increase exponentially.
- Adding between 30 – 50 vehicles per hour to Special Vehicle lanes would be an assumed initial threshold because at this point lane productivity degrades dramatically.
- Other safety or operational effects of allowing mixed traffic around bus stops and stations would be in addition to the above impacts.

