

Report 2017.21
Date 3 February 2017
File CCAB-20-230

Committee Sustainable Transport
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Electric Vehicle Update

1. Purpose

To update the Committee on progress with electric vehicles nationally and in the Wellington Region.

2. Introduction

The 2016 year saw significant activity relating to electric vehicles (EV) at both national and regional levels, as summarised below.

3. Government Electric Vehicle Programme

An Electric Vehicle programme was announced in May 2016 with the target of doubling the number of electric vehicles in New Zealand every year to reach approximately 64,000 by 2021. Measures include a five year information and promotion campaign (funded at \$1 million annually) and a contestable fund of up to \$6 million per year to encourage and support innovative low emission vehicle projects (see **Attachment 2** for the results of the first round). EVs are exempted from Road User Chargers. Tax depreciation, fringe benefit tax and ACC levies are being reviewed.

A work programme across government agencies has been established to support the development and roll-out of public charging infrastructure including providing information and guidance (see Table 1 below). This work also includes working with local government to allow electric vehicles in bus and high-occupancy vehicle lanes where feasible.¹

A leadership group has been established to champion the programme, promote the initiatives and share information between central and local government and industry.

¹ GWRCs submission on the Energy Innovation (electric vehicles & other matters) Bill addresses matters relating to allowing EVs in bus lanes.

Table 1: Electric Vehicle Programme – Lead Agencies



Lead agencies for the Programme

Ministry of Transport	EECA	NZ Transport Agency
Establishing and convening the Leadership Group	Nationwide information and promotion campaign	Supporting the development of public charging infrastructure
Regulatory changes to implement the RUC exemptions for light and heavy EVs	Establishing and administering the contestable fund for low emission vehicles	
Regulatory changes to enable EVs to use bus and transit lanes		
NZ Government Procurement, MBIE	MBIE and ACC	IRD
Investigate the feasibility of joint public-private procurement of EVs	Reviewing and potentially amending the ACC levies payable by PHEVs	Reviewing and potentially amending the depreciation rate and/or FBT for EVs

4. Role of local government

Territorial authorities, as Road Controlling Authorities, have the lead role in providing discounted parking or installing publicly available chargers. Regional councils have an important role in terms of regional transport planning, coordination and promotion and managing public transport.

Councils can demonstrate leadership by adopting EVs into their own light vehicle fleets and encouraging their use in public transport. Many of the nine councils in the Wellington Region have at least one EV in their light vehicle fleet, including GWRC which now operates three. Providing charging infrastructure at council owned facilities contributes to the local charging network.

Wide scale uptake of electric vehicles will provide a pathway toward reducing the environmental impact of the Wellington Region’s transport system (an objective of the RLTP)², as emissions from land transport currently account for 31% of regional emissions.³

5. GWRC Activity

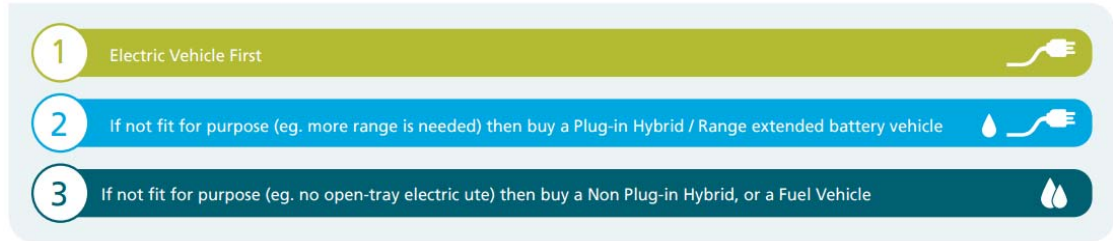
5.1 ‘Electric vehicle first’ policy

GWRC recently adopted an ‘electric vehicle first’ policy. During 2016 a fully electric hatchback and a plug-in hybrid SUV were trialled with staff from across the organisation with mostly positive feedback and enthusiasm for EV

² [Regional Land Transport Plan](#)

³ 2014-15 year. Source: [Wellington Region Greenhouse Gas Inventory 2000-2015](#). Land transport is comprised of petrol, diesel, bus and rail electricity and LPG.

adoption.



An information paper for vehicle fleet managers has been produced with practical information about fleet transition, charging infrastructure, the changes to Council's vehicle policy and electric vehicles in general. The paper also summarises the results of a NZ wide council survey about electric vehicle uptake⁴.

5.2 Installations of chargers for GWRC fleet

With a view to future proofing GWRC's facilities as the fleet gradually transitions to electric, funding has been allocated for chargers at the core offices. A charger was installed at Shed 39 in late 2016 with budget provision for a switchboard to be installed as the fleet increases. The Masterton office is currently in the process of having a charger installed and a Mitsubishi Outlander added into the fleet, and a charger has been approved for installation at the Upper Hutt office. Cabling has been installed at the new Western Depot (Parks), and chargers for fleet vehicles will eventually be installed at that site. Cabling will also be installed at the new Visitor Hub QE Park, to enable chargers to be installed there as the need arises.

5.3 Encouraging low emission technology in the Public Transport fleet

GWRC has publicly stated a goal for the Wellington Region to be the first region in New Zealand with an all-electric bus fleet. To this end, GWRC has provided an incentive mechanism in its current tender for bus operators to specifically encourage low emission bus fleets, with additional weighting provided for battery only electric buses. We are also working with incumbent operator NZ Bus to trial a plug-in range extended electric bus that will provide an important stepping stone to battery only electric buses. Officers investigated options for partnering with a bus operator in a bid for the Low Emission Vehicles Contestable Fund (see section 3 above) for an electric bus trial but decided not to proceed on probity grounds, given the current tender process.

5.4 Wellington Region Electric Vehicle Working Group

GWRC officers in collaboration with staff from other councils in the region established the Wellington Region Electric Vehicle Working Group (REV-WG) in early 2016. The group operates as a coordinating mechanism for the promotion of electric vehicles (EV) generally, and in relation to the development of charging infrastructure. It comprises officers from all councils across the region and is convened by GWRC.

REV-WG meets quarterly and meetings include a public forum which is open to sector stakeholders and interested parties from throughout New Zealand.

⁴ It is available at this link <http://www.gw.govt.nz/assets/Climate-change/GWRCelectric-vehicle-policy-2016.pdf>

Representatives from NZTA, MoT and EECA attend the meetings, as do staff from the region's electricity lines companies. GWRC, as the group's convener, participates in relevant central government and industry led initiatives. Where appropriate REV-WG will coordinate regional bids to the annual Low Emission Vehicles Contestable Fund (see section 3 above). In the first round territorial authorities submitting bids opted to do so individually. Four projects (put forward by a mix of Councils and the private sector) that will directly raise the visibility and awareness of EVs, along with increasing publicly available charging infrastructure in the Wellington Region were funded (see **Attachment 2**).

REV-WG produces a coordination update every six months which summarises the current state of play and short term outlook for EVs in the region enabling further planning to evolve from a coordinated base. The first update was published in December 2016 and is included as **Attachment 1** to this report.

5.5 June 2016 Electric Vehicle Symposium

Greater Wellington Regional Council and the Wellington City Council co-hosted an electric vehicle symposium in June 2016 with principal sponsorship from Wellington Electricity, EECA and Car Bridge. The one day event sold out with 170 attendees and received excellent feedback. Presentations were given by Transport and Energy Minister Hon Simon Bridges, local councillors, government agencies, other national stakeholders, and international experts. The event highlighted the rapid pace of development of electric vehicle technology and the expected rise of adoption in New Zealand's private, commercial and public transport sectors. Presentations from the day are available as video recordings on the symposium website:

<https://electricvehiclesymposium.wordpress.com/presentations/>

Electric vehicles have gained significant momentum since the symposium was held and stakeholders including EECA, NZTA and MoT agree the logical next step is for a national scale conference to be held. Plans for an Auckland based national EV show and conference are developing and GWRC officers have provided advice to the organising committee, the intention being that the 2017 event will follow on from the stimulus provided by the June 2016 symposium.

5.6 International Drive Electric Week – September 2016

A number of activities in the region promoted the advantages of electric vehicles during Drive Electric Week in September 2016. GWRC helped coordinate key events, including the production of a Wellington based video. For more information see **Attachment 1**.

5.7 Current state of play in the Wellington Region

The December 2016 REV-WG Coordination Update (**Attachment 1**) outlines recent progress and plans for electric vehicle promotion and infrastructure development in detail. The key points are summarised below:

- In 2016, numbers of electric vehicles and charging stations grew significantly – from a near-zero base
- Despite the increase, the visibility of charging infrastructure and electric vehicles remains low

- Coverage is not yet complete. In some areas of the region it is still not practical to drive an electric vehicle (i.e. you would end up waiting hours to recharge along your journey). There is a noticeable gap between Otaki and Wellington, the area north of Featherston, and the South and East coasts of the Wairarapa.
- Capacity at charging sites is starting to become an issue given the relatively small number of chargers. Capacity will become a problem at popular charging locations as vehicle numbers rise. Queues have been noted at the Vivian St (Wellington City) and Dowse (Lower Hutt City) chargers.
- Knowledge about electric vehicles and installing infrastructure is limited to a few experts and, even then, a high pace of technological change means no one has all the answers.

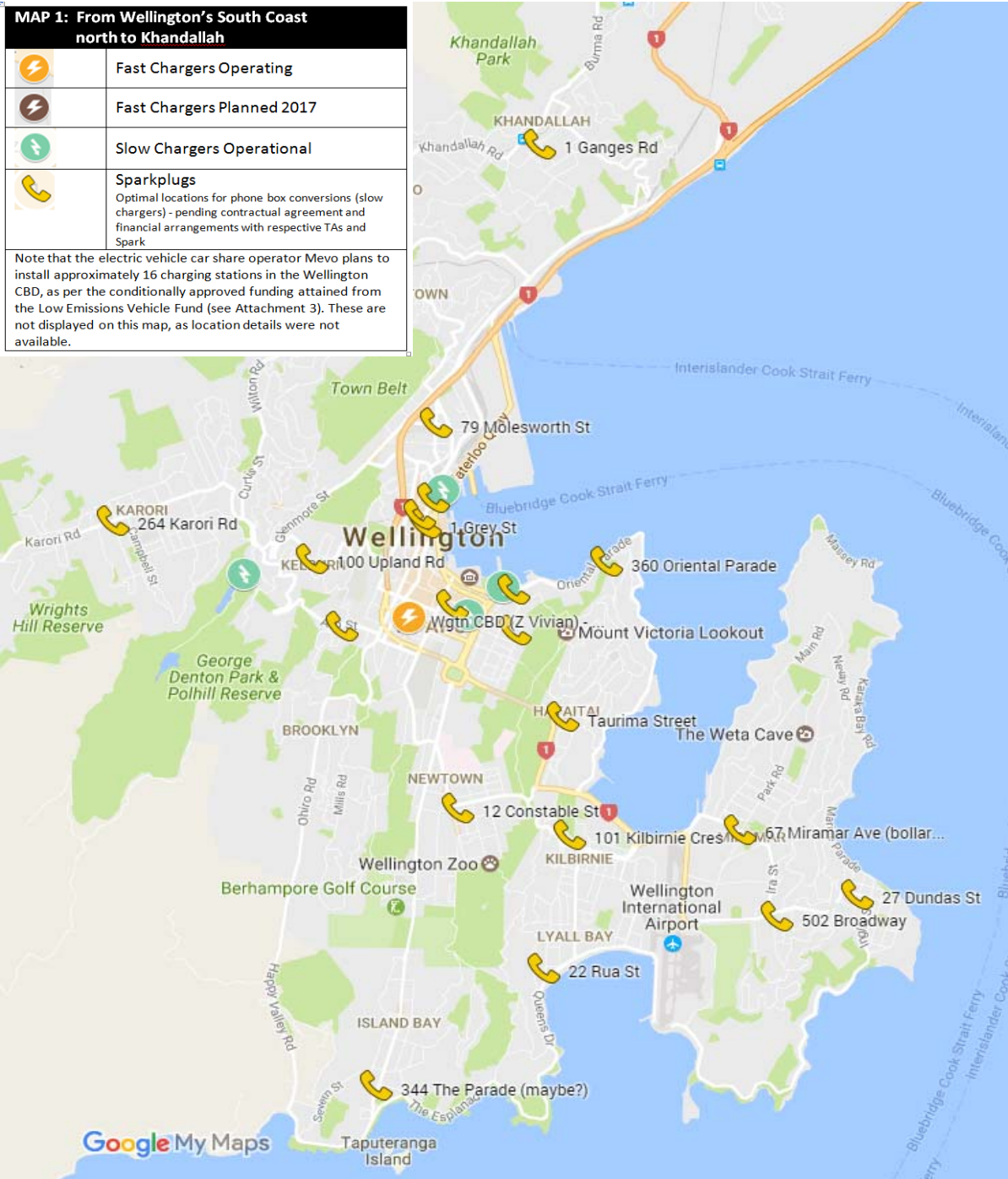
Table 2 below is a summary of the current numbers of vehicles and charging stations. An overview of existing and planned chargers is also provided in the maps on the following pages.

Table 2: Charging Infrastructure and electric vehicles in the Wellington region		<i>Updated Jan 2017</i>
	New Zealand	Wellington Region
Charging Stations - Fast		
Start of 2016	4	0
End of 2016	43	5
End of 2017 forecast	100+	9 ⁵
Charging Stations - Slow		
Start of 2016	~ 10 (plus 200+ campgrounds)	2 (plus ~10 campgrounds)
End of 2016	~ 50 (plus 200+ campgrounds)	6 (plus ~10 campgrounds)
End of 2017 forecast	No figures.	No figures.
Electric Vehicles		
Start of 2016	1000	< 100
End of 2016	2500	225
End of 2017 (MoT target)	> 4000	No target.
Target/s <i>Set by Minister of Transport</i>	64,000 by 2021	No target.
	<i>Note that 6,400 vehicles by 2021 represents a Wellington Region per-capita share of the NZ target. International data demonstrates that areas with higher per capita incomes experience greater uptake (relevant as Wellington City highest per capita income in NZ).</i>	
Total light vehicles on road	3 million	250,000
CO₂e offset annually⁶	4000 tonnes	450 tonnes





⁵ Assumes Porirua, Upper Hutt, Paraparaumu, Masterton which are all scheduled to open during 2017

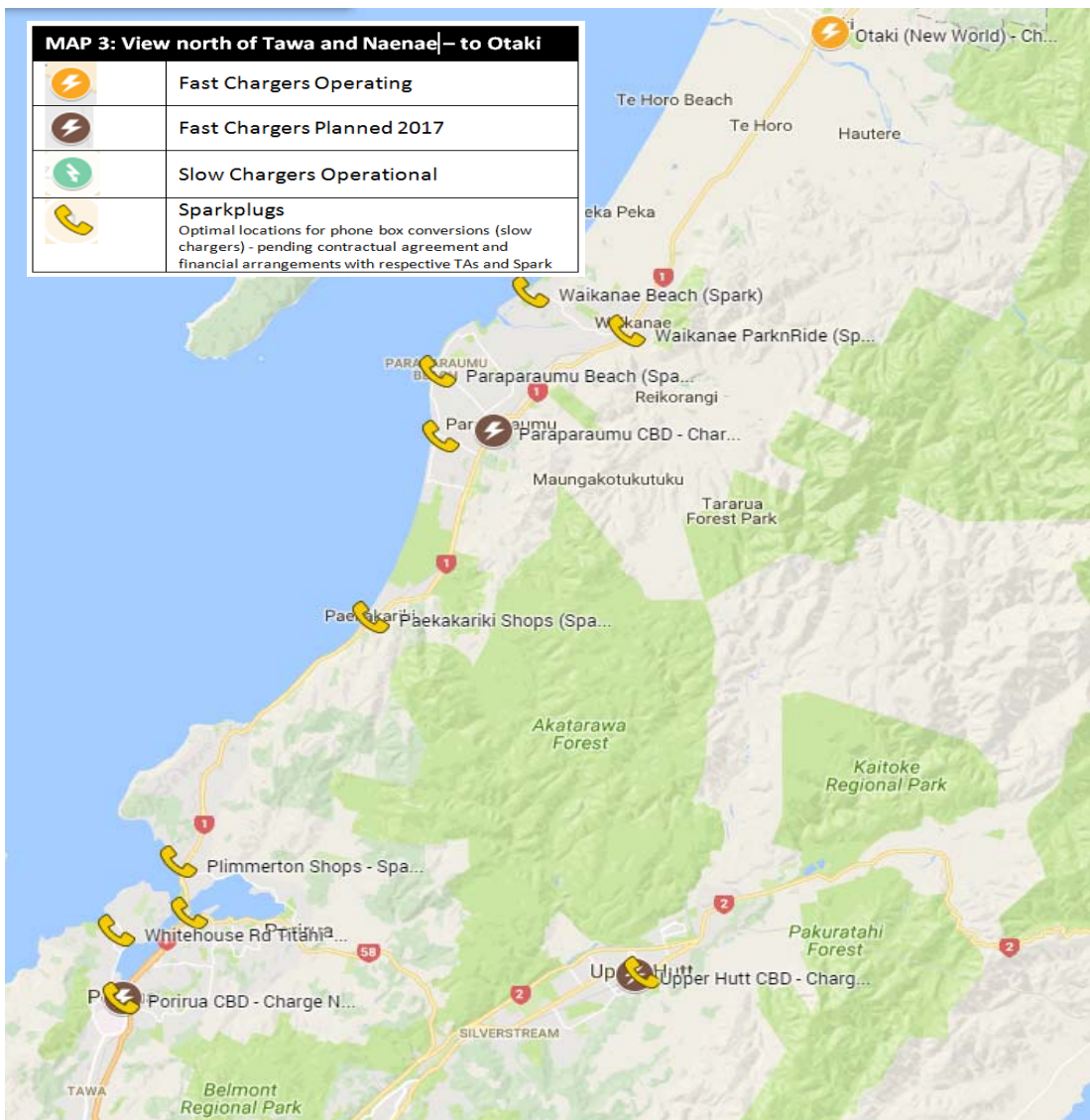
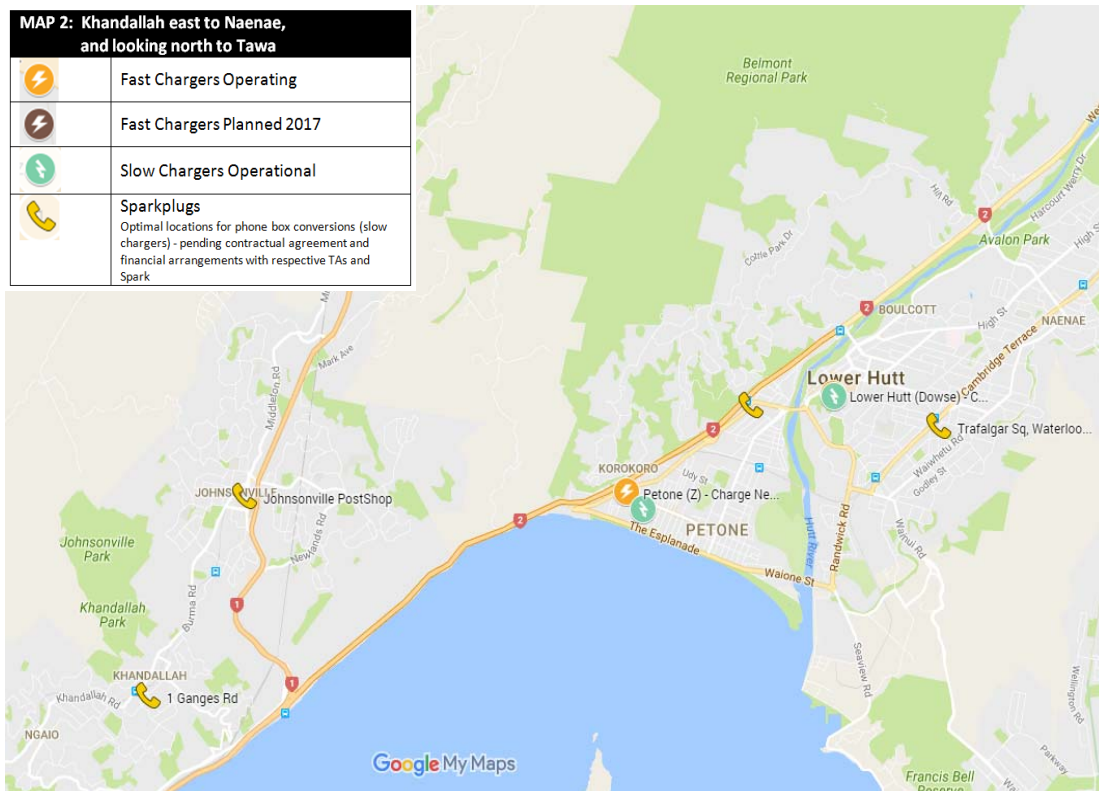
⁶ Simple model of 2 tonnes CO₂e per car per year using the most recent vehicle count from MoT.

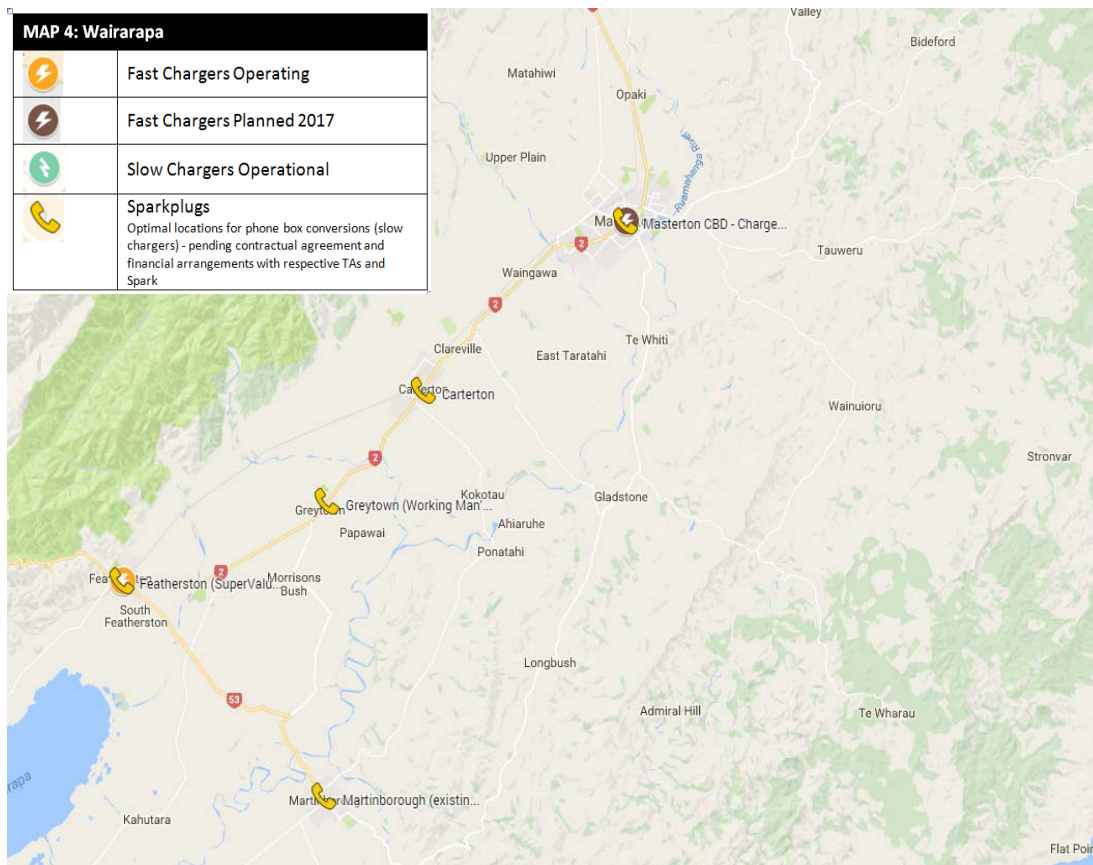
Note that \$500,000 publicly announced funding from EECA in 2017 for the MEVO electric car share scheme (see **Attachment 2**) may result in an increase of up to 50 electric cars for public use and up to 16 more public slow chargers in Wellington City



MAP 2: Khandallah east to Naenae, and looking north to Tawa

	Fast Chargers Operating
	Fast Chargers Planned 2017
	Slow Chargers Operational
	Sparkplugs Optimal locations for phone box conversions (slow chargers) - pending contractual agreement and financial arrangements with respective TAs and Spark





6. Communication

There are no specific communication matters in this paper. Initiatives have been communicated at the time they occurred throughout the year.

7. The decision-making process and significance

This paper provides an update only. No decision is being sought in this report.

8. Recommendations

That the Committee:

1. *Receives the report.*
2. *Notes the content of the report.*

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**Attachment 1: Wellington Region Electric Vehicle Working Group:
Coordination Update 01 December 2016**

Attachment 2: Low Emission Vehicle Contestable Fund