

MINUTES of a meeting of the Raglan Community Board held in the Supper Room, Town Hall, Bow Street, Raglan on **MONDAY, 4 AUGUST 2021** commencing at **1.32pm**.

Present:

Mrs G Parson (Chairperson)
Mr D Amoore
Mr T Oosten
Mr C Rayner
Cr LR Thomson

Attending:

Mr R Thorpe (Xtreme Zero Waste)

Ms A Diaz (Chief Financial Officer)
Ms G Kanawa (Democracy Team Leader)
Mr M Horsfield (Democracy Advisor)

Six members of the public in attendance

APOLOGIES AND LEAVE OF ABSENCE

Resolved: (Cr Thomson/Mrs Parson)

THAT an apology be received from Mr MacLeod

CARRIED

RCB2108/01

CONFIRMATION OF STATUS OF AGENDA ITEMS

Resolved: (Mrs Parson/Cr Thomson)

THAT the agenda for a meeting of the Raglan Community Board held on Wednesday, 4 August 2021 be confirmed and all items therein be considered in open meeting;

AND THAT all reports be received.

CARRIED

RCB2108/02

DISCLOSURES OF INTEREST

Mr Amoores advised members of the Board that he would declare a non financial conflict of interest in item 6.3 [*Raglan Community Arts Council – Film Festival -RAFFA Red Carpet Evening*]

Mr Oosten advised members of the Board that he would declare a non-financial conflict of interest in item 6.1 [*Raglan Community Energy Project*]

Mrs Parson, Mr Amoores and Cr Thomson advised the board that they were members of the Raglan and District Museum.

CONFIRMATION OF MINUTES

Resolved: (Ms Parson/Mr Rayner)

THAT the minutes for a meeting of the Raglan Community Board held on Wednesday, 4 August 2021 be confirmed as a true and correct record of that meeting.

CARRIED

RCB2108/03

PUBLIC FORUM

Agenda Item 5

The following matters were discussed:

- Raglan Football Club Papahua Football Field – Concern raised regarding the proposed footpath that will run along the football field and the effects it will have on the use of the fields, as it would consume a portion of the existing fields which are already of reduced size.

There has been discussions with staff regarding alternative path options but they are limited and questions raised if there can be a delay of the construction stage of the footpath that incurs on the football fields.

ACTION: Staff will contact the Community Board to discuss the results of their investigation for the proposed Papahua Footpath along the football field.

- Question raised why shared spaces weren't being considered for Marine Parade and Bow Street to allow walking, cycling and driving to coexist.
- Concern noted regarding the safety of the exposed concrete tank underneath the Surf Club at Wainui beach. A Service Request will be made regarding this issue.

- Noted that the bus service timetable has been delayed and questions raised whether the revision will be made before summer.

REPORTS

Raglan Community Energy Project Agenda Item 6.1

Mr Thorpe from Xtreme Zero Waste discussed the following.

- Process has begun to discuss opportunities for the Community Energy Project and the possibility of solar farms.
- Steering Committee has a lot of expertise regarding innovation and legislation to move the project forward.
- A two-page flyer will be distributed in August 2021 to notify the community about a public meeting and provide an information of the project. The meeting will also be advertised via Social Media.
- Pumped hydro and batteries storage opportunities were raised.
- A presentation will be given to students at Raglan Area School.
- Noted that the project could offer local employment and opportunities for apprenticeships.
- There could be opportunities to donate electricity for those in need or community facilities.

Discretionary Fund Report to 20 July 2021 Agenda Item 6.2

The report was received [RCB2108/02 refers] and discussion was held.

- The Chairperson noted discrepancies in the discretionary fund report. The Chair and the Chief Financial Officer discussed the issues in further detail after the meeting.

Raglan Community Arts Council – Raglan Arts Film Festival Awards (RAFFA) Red Carpet Evening
Agenda Item 6.3

The report was received [RCB2108/02] and discussion was held.

- It was noted that the report indicates the Arts Council was asking for \$3,260 from the Waikato District Council but they were only asking for \$1000 from the Discretionary Fund.
- Ms J Anderson from the Arts Council provided an overview of the Red Carpet Evening, and the need for funding for marketing and printing.
- There were 24 entries for the Film Festival, from children and adults.

Resolved: (Cr Thomson/Mr Rayner)

THAT an allocation of \$1000 is made to the Raglan Community Arts Council towards the cost of the Raglan Arts Film Festival Awards RAFFA red carpet evening.

CARRIED

RCB2108/04

Raglan and District Museum Society – Rangitahi Peninsular Historical Photo Exhibition
Agenda Item 6.4

The report was received [RCB2108/02] and discussion was held.

- Mr C Ammon from the Raglan Museum Society noted that lighting has already been installed for the exhibition, with the application for graphic design and display boards.
- The Society has been in contact with families who hail from the area.
- The exhibition will focus on the early history of Rangitahi, with photographic displays focusing on the 19th Century.
- Questions raised regarding the acknowledgement of tangata whenua within the exhibition.
- There was a desire from the board that the exhibition acknowledge the history of tangata whenua during the same time period, but there will be limited material on mana whenua history on the site. More research would be desired for the use of the land before the arrival of Europeans.

Resolved: (Mr Amoores/Cr Thomson)

THAT an allocation of \$1430 is made to the Raglan and District Museum Society towards the cost of the Rangitahi Peninsular Historical Photo Exhibition subject to further acknowledgement of hapu on Rangitahi Peninsular.

CARRIED

RCB2108/05

Raglan Works & Issues Report: Status of Items July 2021
Agenda Item 6.5

The report was received [RCB2108/02 refers] and discussion was held.

ACTIONS & ISSUES REGISTER

- Climate Response & Resilience Action Plan can be removed from the register.
- Civil Defence and Raglan Community Response Plan – Cr Thomson will be meeting with the Emergency Management Advisor to discuss Civil Defence and an upcoming kids day event.
- Camera Licensing Trust – Discussion regarding the possibility of the trust accessing discretionary funding and recent break-ins.

ACTION: Chief Financial Officer to investigate the possibility for the Camera Licensing Trust to apply for discretionary funding from the Raglan Community Board.

ACTION: Cr Thomson will discuss with the Camera Licensing Trust with the Raglan Business Chamber and possible funding options for the Trust.

- Raglan Aerodrome Safety Improvements – There has been a temporary change in place that pilots now have to request to land at the aerodrome. The Chair, Mr Rayner and other community members met with the Community Assets Manager and the project consultant for the aerodrome to discuss community feeling and feedback. The consultant noted that the runway could be more clearly identified. The community can ask for NOTAMs, which can notify landing restrictions. Mentioned that if the aerodrome was closed for aircraft use, the council should provide signage to show the aerodrome is closed. The safety improvement report was set for completion by the end of August.
- Soundsplash – Noted emergency service reporting has to be organised before the event. Board members will meet with Soundsplash representatives, and the Chair will meet with the Community Venues and Events Team Leader in the next few weeks.

- Representation Review can be removed from the register. The Board will make a submission to the Representation Review, which will be similar to the recommendation made to Council. The Chair and Mr Rayner will work on the submission. Important for the Board to communicate why they may wish to extend the board catchment boundaries. It was noted the importance for the community to make submissions to the representation review.

RAGLAN WORKS

- Manu Bay – Board will continue working with the project manager and the Community Projects Manager to set a date for a third workshop.

QUARTERLY UPDATE

- State Highway 23 Revocation – Revocation has now been confirmed and gazetted.
- Speed Limit Changes – More clarity will be sought by the Board from the Senior Transport Engineer.
- Bow Street – Funding confirmation from Waka Kotahi was still pending for the pedestrian zebra crossing.
- The Board will meet with the Senior Transport Engineer on Friday 20th August to further discuss issues in the quarterly update.

Year to Date Service Request Report

Agenda Item 6.6

The report was received [RCB2108/02 refers] and discussion was held.

- Noted that previous information had been supplied on wastewater overflows, nothing scale and location. The Raglan Community Board requested that this be included in the Year to Date Service Request Report.

Raglan Naturally Report

Agenda Item 6.7

The report was received [RCB2108/02 refers] and discussion was held.

- Raglan Naturally has received Department of Internal Affairs funding and was now advertising for job vacancies for the organisation.

Chairperson's Report

Agenda Item 6.8

The report was received [RCB2108/02 refers] and discussion was held.

Tabled Item: Attachment I - Board's recommendation to Council for the Representation Review.

- The Chair tabled the board's recommendation to Council for the representation review.
- Chair asked the Board if they are comfortable for what she noted in her report for the oversight of the reserves in Raglan. The Board noted they were. If the Board needed formal oversight, they could request it from the Service Delivery General Manager and the Mayor through a Board meeting.
- Chair will provide a link to the Reserve Management Plan in her next report.

Councillor's Report

Agenda Item 6.9

Cr Thomson provided a verbal report and noted the following:

- There has been a second strategy meeting for the Papahua Holiday Park to discuss future planning.
- Cr Thomson visited Te Akau with Cr Eyre to discuss the representation review with local residents, who conveyed they wish not to be included in the Whaangairoa Ward.
- Reserve Management Plan will be adopted by Council next Monday, 8th August 2021.

Board Member's Reports

Agenda Item 6.10

The reports from Mr Amooore and Mr Oosten were received [RCB2108/02 refers] and noted the following:

Mr Amooore

- Pontoon and West Walkway/Handrail tendering were still underway.
- West Walkway/Handrail concepts will be discussed with the Community, Iwi and Stakeholders. Tendering was underway for the design and to gauge costs.
- Whaingaroa Infrastructure Study – A meeting will be planned in August to look into the process of the proposal.

Mr Oosten

Tabled Item: Attachment 2 - Hikotron Report

- Hikotron provided a report outlining the proposed location for vehicle charging sites. Mr Oosten has been working with Hikotron to discuss options and provide feedback for the sites. The next steps would be for Council to negotiate contractual terms. There was a possibility of profit sharing. Discussion was held regarding the possibility of Council purchasing, owning and maintaining charging stations.
- Hall Committee – Committee was actively recruiting for new members. Hall Committee would like to approach the Council to introduce a time limit for parking at the electric vehicle charging station next to the Town Hall. Additionally, to introduce lines and monitoring for the carpark. Hall Committee to discuss with the Community Venues and Events Team Leader their suggested changes.

There being no further business the meeting was declared closed at 3:38PM

Minutes approved and confirmed this day of 2021.

G Parson
CHAIRPERSON

Recommendation from Raglan Community Board Chair, Gabrielle Parson, for the WDC Representation Review and Consultation.

30th June 2021

Number of Community Boards in Raglan Ward: **One**

Name of Community Board: **Raglan Community Board**

Number of Members per Board: Same. **6 + 1 Councillor = 7**

Boundaries of Community Board (to include communities of interest):

Communities of Interest to include in the Raglan Community Board area:

- Raglan Urban
- Raglan Coastal
- Ruapuke
- Makomako
- Te Mata
- Te Uku
- Okete

Boundaries:

The Board members have spoken informally to rural residents over the last week, which has confirmed our thinking. The Board recommends that the Board boundaries are extended to include the communities of Makomako, Te Mata and Te Uku and to include these roads:

- extend south-west to include Tukurimu Road, Matahwa Road and Waimaori Road
- extend south to include Te Papatapu Road and Philips Road
- extend south-east to include all of Houchen Road and Kawhia Road (to Makomako)
- extend east to include Pond Road (Te Mata), and up to (but not including) Waitetuna Valley Road
- extend north-east to include all of Okete Road, Hauroto Bay, Checkley and Warren Roads
- ?? north to Te Akau Landing

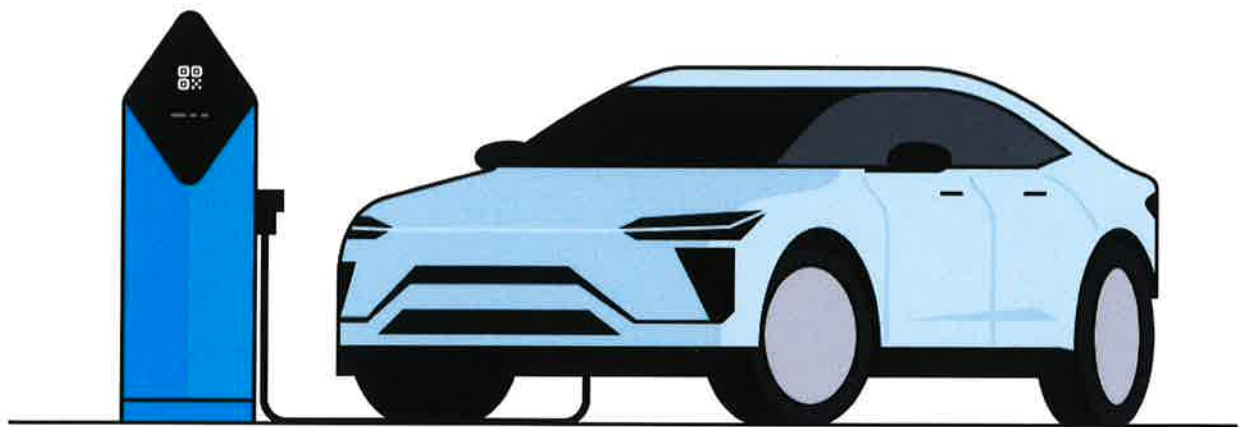
In regard to the Boundaries and Communities of Interest - we recommend that you include in the consultation to ask:

- the Waitetuna community about inclusion in the Raglan Community Board area. This would include these roads: Otonga Valley, Cogswell and Waitetuna
- the Te Akau Landing community about inclusion in the Raglan Community Board area.

Comment and question from RCB member – not to include in consultation but would be great to have an understanding of this:

I would suggest that RCB would like input into where the boundaries fall, and we would like to know if boundaries have to follow the roads to create the boundary or if they can create a boundary between roads, as one of the negative feedbacks I got was that people were disappointed that often one side of the road was inside the boundary and the other side of the road outside, and this is seen as unfair when there is absolutely no difference in the way households on either side of a rural road engage with their communities.

Hikotron



**PROPOSAL TO THE RAGLAN COMMUNITY BOARD FOR HIKOTRON
ELECTRIC VEHICLE CHARGING NETWORK IN RAGLAN**

JULY 2021

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List of abbreviations

- EV – Electric Vehicle
- ICE – Internal Combustion Engine
- AC – Alternating Current
- DC – Direct Current

1. EXECUTIVE SUMMARY

- 1.1. Hikotron have designed and built a public electric vehicle (EV) charging post in Hamilton, New Zealand and are planning to roll out a public EV network around the Waikato and wider New Zealand. Hikotron are looking for sites to expand their public EV charging network and have identified Raglan as a key location for EV charging points, as it enables the community, local businesses and visitors to transition more easily to an EV.
- 1.2. Hikotron was founded by Ron Smits, Larry Muijlwijk and Steph Smits O'Callaghan last year with the vision to start a public EV charging network that was convenient, high-tech and reliable based on our over 5 years of experience of using EV chargers in the UK and Europe.
- 1.3. Hikotron are proposing to install public AC (Alternating Current) charging posts in Raglan Town Centre and Raglan Beaches which will connect to the wider Hikotron network. Public charging posts located around Raglan will promote the adoption of EV's by providing the community, businesses and visitors the opportunity to charge their car while it is parked and provides a place for EV drivers to charge where charging at home is not possible, for example, renters, those that live in apartment buildings and holiday makers. This charging infrastructure will also enable low cost EV's to be used for travelling over longer distances.
- 1.4. The key benefits of the Hikotron charging post are:-
 - 1.4.1. One charger handles multiple users and pricing plans i.e. public, fleet, business and visitors
 - 1.4.2. Simple app-based payment system
 - 1.4.3. Straightforward installation using only a domestic supply, not requiring a large transformer
 - 1.4.4. Easy integration of idle and parking fees
 - 1.4.5. Real-time data visible on the app
 - 1.4.6. One network to connect users to multiple destinations
 - 1.4.7. Variable charging rates (3-7kW) and load sharing capabilities
 - 1.4.8. Two patents pending
 - 1.4.9. Future spot pricing of power (when the network allows)
- 1.5. Hikotron will cover the high up-front costs of installation and will maintain both the hardware and software. In return Hikotron will charge users per kWh to use the post. Once the utilisation rate reaches a certain level, we can agree future profit share options to create an income for the community.
- 1.6. In return Hikotron will require a 5 year licence to occupy of the parking spaces for the use of EV charging, available to the public.

2. PROPOSAL FOR HIKOTRON EV CHARGERS IN RAGLAN

2.1. First (preferred) proposed site is as follows:-

2.1.1. Site Name: Stewart Street, Raglan

2.1.2. Site Location: Stewart Street, Raglan

2.1.3. Number Of Posts: 1

2.1.4. Number Of Car Parking Spaces: 2

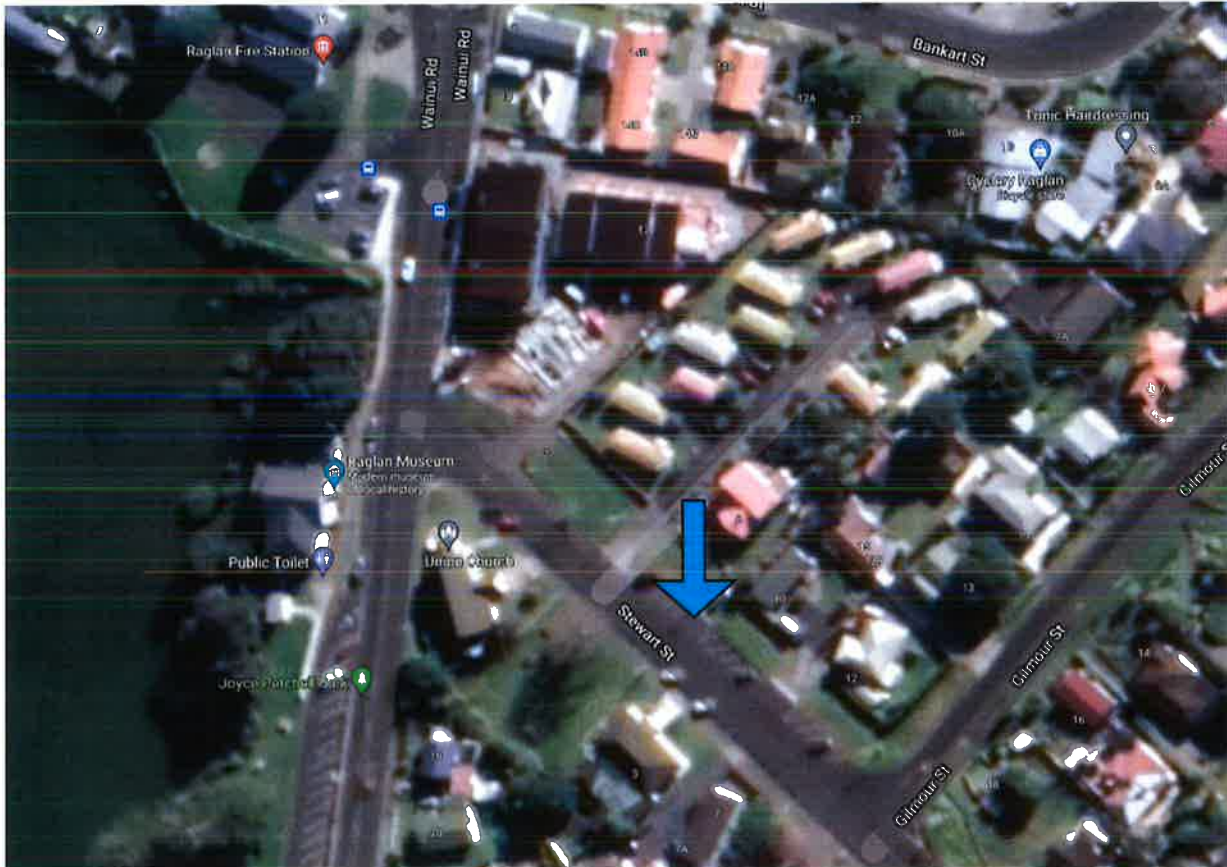


Figure 1 Proposed location of 1 x EV charging posts on Stewart Street



Figure 2 Proposed location of 1 x EV charging posts on Stewart Street

- 2.2. The benefit of charging posts in this location is that there is less pressure on the parking spaces and so they are more likely to be made available for EV charging. With the lack of adequate policing of the EV charging spaces there is a risk that non-EV drivers park in these spaces. However, as Stewart Street is not in a main parking area there would be less pressure on the parking spaces but is still a short walking distance from the town centre. The posts in this location would also be convenient for residents and their visitors, especially with development of higher density housing in this area.
- 2.3. The spaces at this location are currently angled and it is recommended that parking spaces are perpendicular so that an EV can both pull and back into the space depending on where the charging port is located on the vehicle. From the site survey there is also likely power available at this site which would make for a less invasive installation process i.e. not requiring thrusting.
- 2.4. This site is Hikotron's preferred location due to the likely available power and the reduced pressure on the parking spaces, thereby reducing the risk of non-EVs parking in the EV charging spaces.

2.5. Second proposed site is as follows:-

2.5.1. Site Name: Wainui Rd (Fire Station) Car Park

2.5.2. Site Location: Wainui Rd (Fire Station) Car Park, Raglan Town Centre

2.5.3. Number Of Posts: 1

2.5.4. Number Of Car Parking Spaces: 2

2.6. Hikotron proposes to install 1 x EV charging post in the location indicated by the blue arrow below at the Wainui Rd (Fire Station) Car Park.

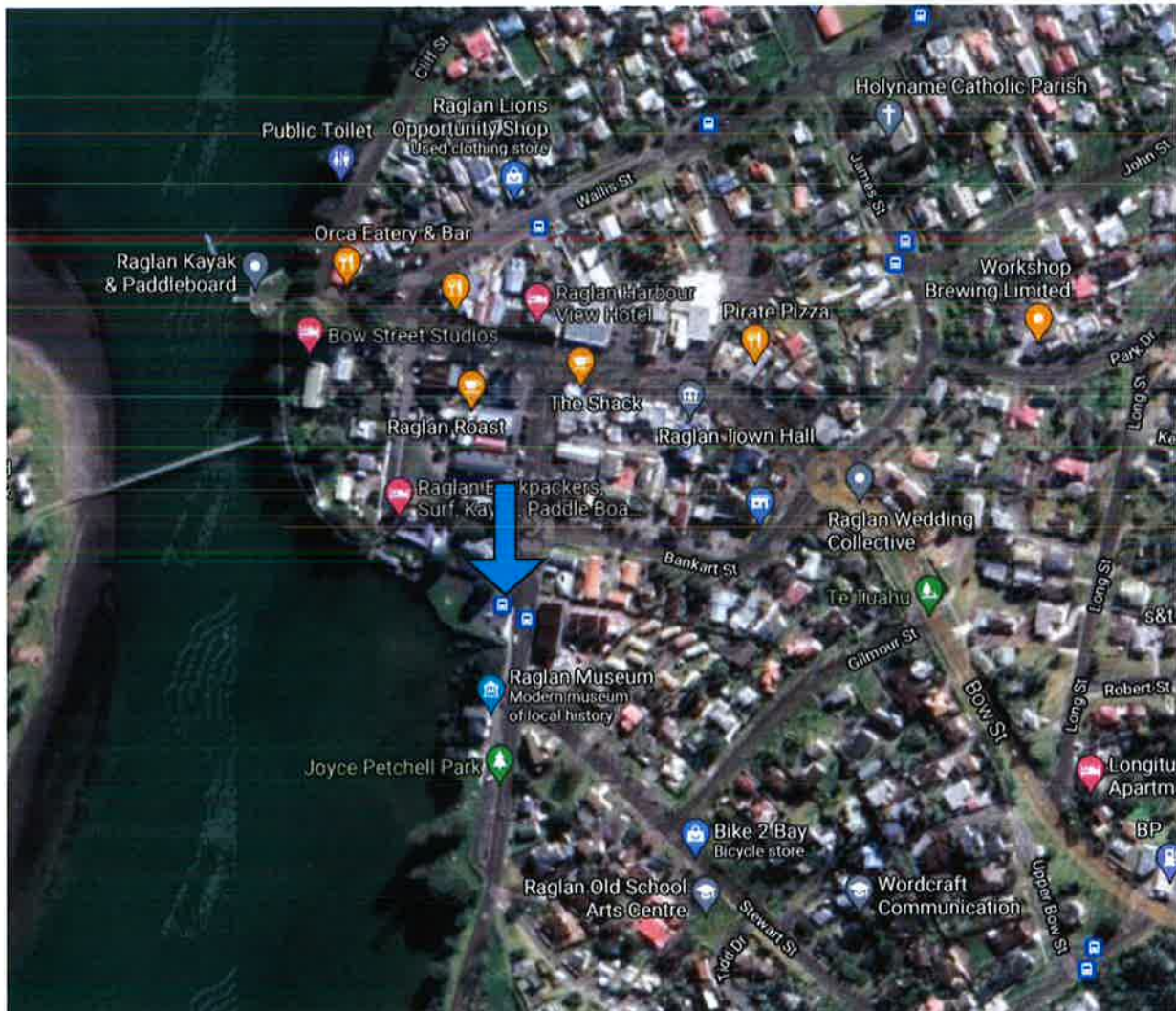


Figure 3 Proposed location of 1 x EV charging posts at the Wainui Rd (Fire Station) Car Park



Figure 4 Location of proposed 1 x charging posts to serve 2 x EV car charging spaces



Figure 5 Alternative location for 1 x charging posts to serve 2 x EV car charging spaces in Wainui Rd (Fire Station) Car Park

2.7. The suggested locations for the charging posts in this car park work well for EV drivers as the parking spaces are perpendicular. This enables a vehicle to both reverse and pull into the space depending on where the charging port is located on the vehicle. From the site survey there is also likely power available at this site which would make for a less invasive installation process i.e. Not requiring thrusting.

2.8. Third proposed site is as follows:-

2.8.1. Site Name: Raglan Beach Ngarunui Beach Road

2.8.2. Site Location: Raglan Beach Ngarunui Beach Road, Wainui Reserve, Raglan

2.8.3. Number Of Posts: 1

2.8.4. Number Of Car Parking Spaces: 2



Figure 6 Proposed location of 1 x EV charging posts at Raglan Beach Ngarunui Beach Road



Figure 7 Proposed location of 1 x EV charging posts at Raglan Beach Ngarunui Beach Road



Figure 8 Location of proposed 1 x charging posts to serve 2 x EV car charging spaces

- 2.9. The charging post is to be installed in between two car parks so that two cars can charge from one charging post at the same time.
- 2.10. EV chargers placed in this location promotes EV adoption as it enables EV drivers to travel to the beach with short range and more affordable EVs i.e. 24kW Nissan Leaf, as they can charge while the car is parked. This also encourages cleaner vehicles to drive around the Wainui Reserve which improves air quality, CO₂ and noise pollution.

2.11. Fourth proposed site is as follows:-

2.11.1. Site Name: Manu Bay Beach, Manu Bay Reserve, Raglan

2.11.2. Site Location: Manu Bay Reserve, Wainui Reserve, Raglan

2.11.3. Number Of Posts: 1

2.11.4. Number Of Car Parking Spaces: 2



Figure 9 Proposed location of 1 x EV charging posts at Manu Bay Beach



Figure 10 Proposed location of 1 x charging posts to serve 2 x EV car charging spaces

- 1.1. EV chargers placed in this location enables the community, visitors and local businesses such as the Raglan Surf Club to drive with an EV to this location and charge during the day, avoiding waiting times and unnecessary trips to charge the vehicle.
- 2.12. Sites to consider in the future once the EV adoption rate increases as follows:-
 - 2.12.1. Site name: Marine Parade Boat Ramp, Raglan
 - 2.12.2. Site location: Marine Parade Boat Ramp, Raglan
 - 2.12.3. Number of posts: 1
 - 2.12.4. Number of EV charging spaces: 2



Figure 11 Future location to be considered at Marine Parade Boat Ramp



Figure 12 Future option for EV charging location

- 2.13. EV chargers placed in this location enables those towing a boat to charge their EV whilst they are out on the sea for the day. Towing uses more energy and so a charging post placed in this location would enable EVs to charge while the car is parked.
- 2.14. These charging posts will join the expanding wider Hikotron network of high-tech AC EV public charging infrastructure. The charging posts will be operated through a mobile application which will enable users to locate the posts, start and stop the charge, monitor how much power is being drawn while charging and make payment. The users can use the same mobile application for all the charging posts on the Hikotron public network.
- 2.15. If the above proposed locations are not suitable, Hikotron is happy to consider other alternative locations proposed by the Raglan Community Board.

3. ABOUT HIKOTRON

- 3.1. Hikotron Limited is a start-up public EV charging network that is preparing for New Zealand's electric future.
- 3.2. Hikotron have designed and built a high-tech public EV charger which is planned for roll out as a public EV network around the Waikato and throughout New Zealand. Hikotron are working to establish New Zealand's largest EV AC charging network so that drivers with EVs can travel from destination to destination with the confidence that they can charge their vehicles upon arrival.
- 3.3. Hikotron is made up of four key founders.

Ron Smits BE Process & Chemical Engineering (CEng) University of Waikato Alumni 12 years in industry – 5 years in UK Tesla Owner & EV enthusiast	
Lawrence Muijlwijk BE Electronic Engineering University of Waikato Alumni 12 years in industry – 1 year in Sweden Automation, Electrical, Mechatronics	
Stephanie Smits O'Callaghan MSc BSc Int Mgmt & Int Property & Real Estate 7 years in property and town planning 4 years experience in Sustainable Enterprise in UK – Solar/EV charging/future battery storage Leaf owner & EV enthusiast	
Dean Fletcher BE Mechanical Engineering 17 years in industry in design and fabrication	

- 3.4. Together with their key partners Hikotron have the capability to deliver charging infrastructure projects from start to finish with limited reliance on 3rd party products and software. This provides a huge advantage for future research and development in products and services and develops technology and high-tech jobs here in New Zealand.
- 3.5. Ron and Stephanie are EV enthusiasts and have been living and driving EVs in Europe for the past 5 years. During this time, they have experienced the massive EV adoption wave and this transition happened faster than ever anticipated. Returning at the same time as Larry (also previously in Europe) to New Zealand in 2020, together they saw a massive opportunity to design and build a high-tech public charging post which incorporates all their learnings from Europe and makes it even better by focusing on a simple user experience, reliability and convenience.

4. GLOBAL TRANSITION FROM ICE TO EV

- 4.1. Global trends in the automotive industry are moving away from Internal Combustion Engine (ICE), or petrol and diesel vehicles, towards EVs whereby market forces along with government incentives are driving exponential EVs sales.
- 4.2. Looking to Europe, where EV adoption is a lot higher, there is massive investment going into EV charging infrastructure. AC chargers are being placed on streets, institutions, beaches, workplaces, car parks, airports, tourist attractions and large shopping centres and Direct Current (DC) charging is reserved only for services and charging hubs (see **Document 1** for explanation about the difference between AC and DC vehicle charging).
- 4.3. One interesting case study is Wales, where the Welsh Government commissioned a report to create a strategy for EV charging infrastructure over the next 10 years (Electric Vehicle (EV)) charging strategy for Wales, December 2020). Wales has a similar population size to New Zealand and they currently have 300 public chargers, New Zealand has approximately 600. By 2030 Wales plan to install just under half a million chargers to meet their Climate Change ambitions. The report highlights that to cope with huge demand, most of the charging will be done at home or at the workplace on AC, as the most convenient time to charge is while the car is parked. Therefore, 98% of the total number of chargers are planned to be AC.
- 4.4. COVID-19 has also provided an opportunity to transition away from fossil fuels and rebuild a cleaner world. New Zealand can capitalise on this opportunity by encouraging the uptake of EVs. This will promote cleaner air, result in less noise pollution, enable cheaper overall lifetime cost of car ownership, and decrease reliance on fossil fuels, both foreign and domestic – Kiwi cars, can be powered by Kiwi renewable energy.

5. NEW ZEALAND'S INFRASTRUCTURE NEEDS

- 5.1. The New Zealand Climate Change Commission (CCC) report (Advice to the New Zealand Government on its first three emissions budgets and direction for its emissions reduction plan 2022–2025) which has just been released, advises the New Zealand Government to stop all imports of ICE cars by 2032.
- 5.2. This report also highlights that the EV infrastructure in New Zealand is improving, however, it is not ready for mass adoption. New Zealand is still in the early adopter stage of EV ownership approximately 0.5% or just under 27,000 cars on the road.
- 5.3. New Zealand needs to prepare for an estimated 600,000 EVs on the road by 2030.
- 5.4. Currently in New Zealand, DC chargers are being installed in locations nationwide which suits needs now. The majority of DC chargers are 50kW but this is old technology. In Europe 50kW chargers are being replaced by faster DC chargers or multiple AC chargers allowing more users to charge at one location at the same time using the same power supply.
- 5.5. DC charging is great for on route travel at major transport nodes for long distances and it should be reserved for when absolutely necessary.
- 5.6. There are currently limited public AC charging points in New Zealand and there is a limited culture of using driver supplied charging cable system (see **Document 2** for explanation about driver supplied charging cable system), which is the NZTA mandated system for public AC charging and widely used throughout Europe due to it being the safest system for public use.
- 5.7. The AC charging model is based around charging while your car is parked. There is no need to fast charge en-route if you know you can charge at your end-destination, minimising wait times and negating the need to stop unnecessarily on the way.
- 5.8. This is the type of public infrastructure New Zealand needs to develop to successfully transition to an EV fleet.

6. HIKOTRON TECHNOLOGY AND SERVICES

- 6.1. The Hikotron technology inside the post is connected via 4G so the live status of the post can always be seen, meaning drivers can confidently travel to their destination knowing the charger is available.
- 6.2. It is operated via a free and simple app-based payment system and it can easily integrate idle and parking fees, charged via the mobile app.
- 6.3. Real-time data about the charging session is visible on the app so that users know their car is actively charging and if there is a problem (i.e. the charging has stopped) the user will be notified immediately.
- 6.4. Variable charging rates can be offered as well as load sharing capabilities for sites with restricted power. Thereby, allowing the first user to charge at the maximum rate and when a second, third or fourth user starts charging the maximum rate will be shared amongst all users.
- 6.5. Two patents pending which address common EV charging pain points to do with payment and user experience.
- 6.6. The charging posts have the ability to support future spot pricing of power, for example encouraging people to charge overnight when power is cheap by offering a night-rate.
- 6.7. The smart software in each charging post together with the mobile app account-based system means that one charger handles multiple users and pricing plans i.e. public, fleet, business and visitors.
- 6.8. The Hikotron post software can be updated in real time over-the-air enabling real time response to issues and ensuring a good user experience with minimal expense.
- 6.9. As the Hikotron network expands this will connect existing users to multiple new destinations.
- 6.10. The Hikotron system encourages EV adoption as it makes charging convenient and accessible to all especially for those who cannot afford to install expensive at home chargers and for those who rent or live in multi tenanted properties, which is currently approx. 1/3 of the population in New Zealand.

7. CONCLUSION

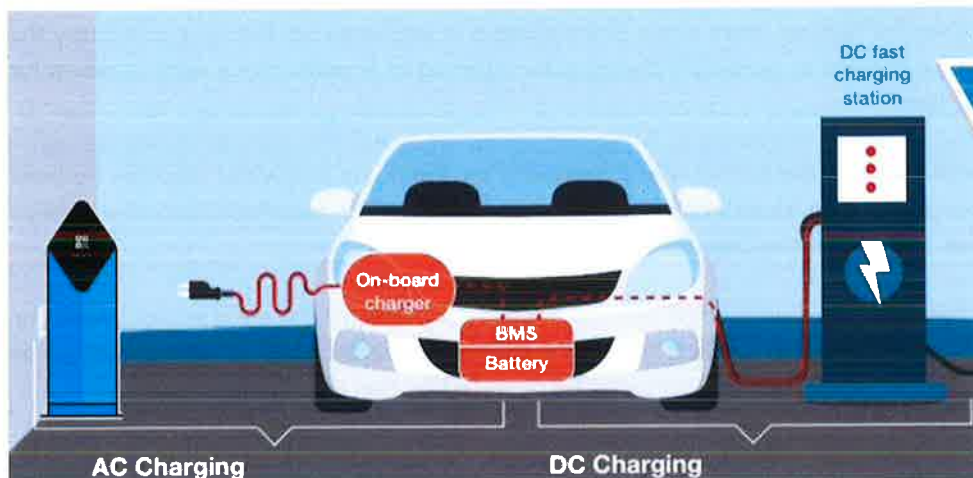
- 7.1. The Hikotron proposal to instal public high-tech EV chargers around Raglan will provide much needed EV charging infrastructure serving both the current EV drivers and will also encourage the uptake of EVs and thereby supporting New Zealand's climate change ambitions.
- 7.2. The technology in the charging post enables one piece of infrastructure to serve multiple users and the post has been designed to be future proofed with the ability to update the software remotely and in real time.
- 7.3. Hikotron will cover the high up-front costs of installation in exchange for the right to occupy the parking spaces for the use as public EV charging, for a period of 5 years with a right to renew for a further 5 year term.
- 7.4. Hikotron will also maintain the software and hardware for the posts and wider Hikotron network as well as manage the user experience, thereby ensuring reliability, excellent customer service and a hassle-free system for the community.
- 7.5. A partnership between Hikotron and the community will also highlight the great achievements on a New Zealand based company working towards a cleaner Aotearoa and decreasing reliance on foreign and domestic fossil fuels. Kiwi cars, can be powered by Kiwi renewable energy!

DOCUMENT 1 – AC VS DC VEHICLE CHARGING

When talking about EV charging there are two main types.

Firstly, there is DC or Direct Current. This is a faster means of charging, where the charger communicates directly with the battery. These high speeds however, degrade the car's battery life and installation costs are much greater due to the need for large transformers.

Then there is AC or Alternating Current, which is a slower means of charging than DC. The charger communicates with the Car's onboard AC to DC converter.



Although limited to 7kW (single phase) or 22kW (three phase), AC charging offers many advantages:

- ◆ The Type 2 socket ensures safety for both the user and vehicle
- ◆ The slender design results in lower land usage
- ◆ The simple installation requires only a domestic power supply
- ◆ It does not require a transformer, which are expensive and typically noisy
- ◆ It has significantly lower infrastructure costs when compared to DC
- ◆ And charging via AC reduces battery degradation

AC charging should be encouraged wherever possible.

DOCUMENT 2 – DRIVER SUPPLIED CHARGING CABLE SYSTEM

NATIONAL GUIDANCE FOR ELECTRIC VEHICLE PUBLIC CHARGING INFRASTRUCTURE

CONNECTORS AND SOCKET OUTLET RECOMMENDATIONS

