Accelerate Kootenays

A project summary

accelerate Kootenays

A project of:

Regional District of Central Kootenay

Regional District of East Kootenay

Regional District of Kootenay Boundary

Facilitated by:

Community Energy Association

Photo Credit:
Travis Rousseau (@travisrousseau)

Acknowledgments

The Community Energy Association (CEA) graciously thanks the following for their leadership and contribution to Accelerate Kootenays:

To the lead regional governments that took inspiration from the Mayors' and Chairs' Coalition of Highway 3 to provide seed funding for Accelerate Kootenays:

To the partner funders who supported the innovative vision of the Regional Districts, providing funding for implementation:

To FortisBC and BC Hydro for their commitments to long term ownership and operation of the DC Fast Charging stations.

And our key collaboration partners:

Ktunaxa Nation for their partnership and leadership to install 118 rooftop solar panels associated with the Level 2 station at the government building.

Kootenay Rockies Tourism for the funding and support to attend the Portland EV Roadmap conference and promote the region for EV tourism.

Emotive for the provision of collateral and promotion of the network.

Solar Now for engaging with site host communities to provide additional funding toward solar installations.

FLO for partnering on our home charger contest.

Power Pros Electrical for facilitating installation of stations.

Finally, we would like to thank the local EV drivers, our Ambassadors, who gave so much time and energy to helping us communicate the benefits and viability of electric vehicles. In particular, thank you to Andrew Chewter, Dave Cornelius, Braeden Fairbairn, Daniela Gadotti and Greg Hill.

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About Community Energy Association

The Community Energy Association is a charitable organization that supports BC local governments with climate action in their community and own corporate operations. CEA helps to accelerate building energy efficiency, renewable energy projects and sustainable transportation through community energy planning and project implementation.
To download a copy of our guide or additional resources for local governments, please visit: www.communityenergy.bc.ca.

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Community Energy Association


BC Hydro
Power smart
A collaborative
East Kootenay
Columbia Basin Trust
British Columbia

Summary

Canada's first community driven collaborative strategy to build a clean transportation network is complete. The 3-year, $1.89 million project brought together multiple partners with varying expertise to transform a rural region into one that facilitates EV travel to and within the region.

The Accelerate Kootenays project:

- Successfully demonstrated how regional governments and organizations can collaborate to deploy a charging network through:
  - Strategic partnerships
  - Strategic station siting
  - Regional-appropriate technology & outreach
- Accelerated the adoption of EVs in a rural context:
  - Increased traffic at charging stations
- Bolstered economic development opportunities for local businesses
- Contributed to reduced GHG emissions in the transportation sector
- Demonstrated innovative partnerships to leverage investment
- Confirmed replicability of community-led regional approach
- Has been recognized provincially, nationally and internationally

What started as a technical barrier to EV adaptation has become an opportunity for tourism, economic development and emission reductions across the rural region. The impact of Accelerate Kootenays will continue for years to come and should be celebrated as a legacy project by the Regional Districts that demonstrated the leadership and innovation to make it happen

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By The Numbers

$90,000
(3 x $30,000)
Seed funding from 3 Regional Districts

$1.98 Million
Total cash investment

1,870kms
Highway connected for EV travel.

$11,500
Average cost of a Level 2 station

$98,000
Average cost of a DC fast charge station

7,000+
Number of views of the #RuralEV Experience Videos

1,492
Charging sessions in 2018

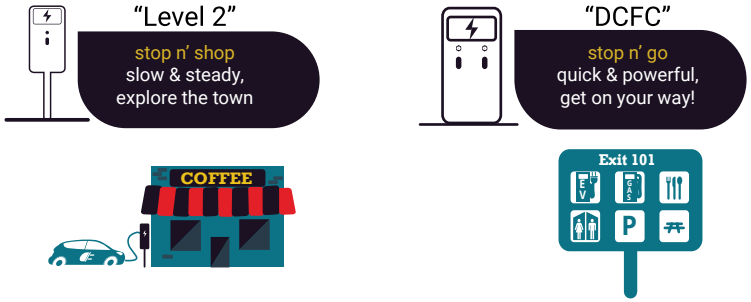
52%
Increase in uses from April 2018 to January 2019 (entire network)

194% Castlegar
Biggest % increase in uses from April 2018 to January 2019

Photo Credit:
KootenayEVFamily.ca / Andrew Chewter

Technology

Strategic siting of 13 DC fast chargers and 40 Level 2s ensured a network that holistically supported electric travel to and within the region. Balancing fast charging stations with Level 2 stations maximized project budget while providing tourism opportunities for host communities.



Equipment

It became clear early in the planning and research that the geographic and climatic characteristics of our region created a challenge for charging equipment. In order to ensure operability of the stations during weather extremes, lots of snow and unreliable cell coverage, the equipment must have been tested in, and warranted for, -40C. While this is the extreme end of winter weather, the communities needed to ensure that even on the harshest winter day, a driver would not be stranded because the equipment was not manufactured for such temperatures. To that end, FLO/AddEnergie was selected for their compliance with this key criteria, among other key requirements of the project. FLO stations at the time were being deployed throughout Quebec in areas with similar winter weather. In addition, the equipment is manufactured in Canada with customer support services in Canada, as well. The stations run on the FLO network and can be monitored remotely.

Clockwise from top left: A Level 2 pedestal charger; Castlegar Mayor, Lawrence Chernoff opening the FortisBC-owned DCFC in Castlegar; The BC Hydro-owned DCFC and Level 2 kiosk in Glacier National Park; DCFC in Greenwood, a key stop for travel between the Okanangan and the Kootenays; the DCFC in Sparwood.

Partnerships

Funding Partners

After initial seed funding was committed by the three Kootenay regional districts - Kootenay Boundary, Central Kootenay and East Kootenay - the implementing organization, Community Energy Association, secured over $1.94 Million dollars in project funding from and additional 6 partners. This unprecedented collaboration, which included two ministries from the Province of BC - the Ministry of Energy and Mines and the Ministry of Transportation and Infrastructure - ensured the entire planned network could be installed.

Implementing Partners

In all sites, communities were engaged during the site selection phase to ensure local needs and expertise were incorporated. And given the expansive project area, significant collaboration was needed to facilitate the installation of all stations. In addition to local elected officials and staff in each host community, the follow partners facilitated the installation of charging stations:

DCFC Owner/Operators

The nature of the Kootenays, and arguably one if its greatest assets, is long stretches of rural highway between small communities. Because the defining characteristic of this project was to acknowledge and value local context, it was unrealistic to burden small communities with operating and maintaining fast charging equipment. For this reason, and as a long term commitment to the communities in their service area, both FortisBC and BC Hydro agreed to own, operate and maintain the fast charging equipment. This alleviated small communities of the liability of ownership while ensuring they could benefit from $100,000 of investment.

For BC Hydro, this was a new opportunity to engage with an EV infrastructure project led by communities. For FortisBC, Accelerate Kootenays was the first time the utility has owned and operated charging equipment. FortisBC is now expanding on the network to increase charging opportunities in their service area.


flo
Charging Network

Partnerships continued

Leveraged Partnerships

With momentum and early successes, Accelerate Kootenays garnered the attention of organizations across the region who recognized the opportunity to partner with the project to create even more positive impact. These included:

1. Kootenay Rockies Tourism
2. Solar Now / Clean Energy Canada
3. Teck
4. BC Ministry of Transportation and Infrastructure
5. Parks Canada
6. Ktunaxa Nation
7. Various elementary schools
8. Kootenay EV Ambassadors (local EV drivers)

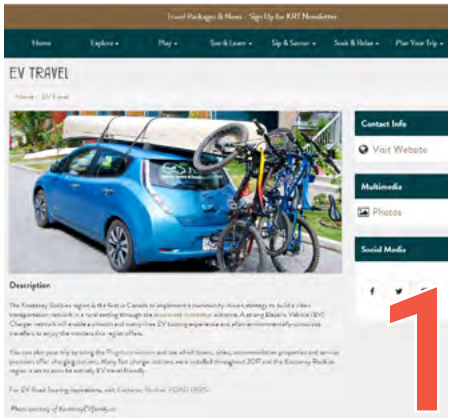


Photo Details:

1. EV travel integrated into Kootenay Rockiest Tourism website; 2. Opening of Solar Array/EV charging station at Ktunaxa Government Building; 3. Opening of Sparwood DCFC with Teck; 4. Level 2 Station at Kootenay Bay Ferry Terminal; 5. DCFC/Level 2 Station at Rogers Pass Interpretive Centre - Glacier National Park; 6. Opening of ʔAq̓am Trading Convenience store with 2 Level 2 stations; 7. School groups interact with EVs in Sparwood; 8. EV Ambassador Greg Hill helping with the creation of creative assets

Site Selection

"Great place to charge! Walk up to the main drag for coffee shops and pubs.

~via PlugShare.com check-in at Creston DCFC

Phase 1: Mapping

In early 2016, CEA was granted permission to access a computer-based model developed by Kelly Carmichael of BCIT. This tool was used to identify critical fast charging locations in the region, taking into consideration terrain and potential climate extremes, as well as car make and model.

Phase 2: Map Refinement

Once a preliminary map of sites was established, project partners refined the map locations, considering travel patterns and availability of services as well as cost implications of fast chargers. Local knowledge was key at this stage, allowing locations to be adjusted to balance driver convenience while maximizing benefits for communities and the region as a whole.

With map locations selected and site host communities identified, specific charging station siting began.

Phase 3: Site Criteria

Final site selection was done collaboratively with input from site hosts, project contacts and utilities. While a primary goal of siting was to maximize economic benefits for the local community, it was critical to balance these criteria with technical considerations like year-round access and the availability of adequate power supply.

Walkability to local amenities

Available power source

Visibility

Accessible from all directions

Dedicated parking available

Government-owned land

Contributes to overall network

Opportunity for cultural branding

Impact

Since its conception, Accelerate Kootenays aspired to increase adoption of EVs in the Kootenays, but also demonstrate how collaboration across rural jurisdictions can address gaps in access to pubic charging infrastructure.

> *I've definitely noticed A LOT of drivers who stop to charge will come into the Dragonfly Cafe for breakfast, lunch or coffee and snacks, and as a small business owner in a small community, I'm thrilled the charger is here. I think many drivers are happy to have a reason to stop in our great town, and we're grateful for the additional business these travelers bring.*
>
> *~Lamiah, Owner, Dragonfly Cafe, Salmo*

Local

1. Inspired adoption of electric vehicles by Kootenay residents:
   - City of Kimberley purchase of Mitsubishi Outlander PHEV
   - Regional District of the East Kootenay purchase of a Chevrolet Bolt
   - Teck purchase of Mitsubishi Outlander PHEV
2. Leveraging the opportunity to enhance charging station sites with solar in partnership with Solar Now
3. Established communication and partnership with dealers:
   - Supported local dealers with communication materials about the charging network and winter driving tips.
   - Invited dealers to events to offer information and test drives

Broader

Accelerate Kootenays was Canada's first community-driven collaborative strategy to build a clean transportation network, and was designed to be a replicable template for other jurisdictions. Since the success of Accelerate, two other regional EV charging network have been initiated:

1. In Northern and Central BC, 6 Regional Governments are collaborating to deploy chargers from Haida Gwaii to Valemount and south to Kamloops. This project is currently in the study phase.

2. Two economic development collaboratives in Southern Alberta are working with the Cities of Calgary, Medicine Hat and Lethbridge, and Medicine Hat College, to deploy 20 fast chargers. This project is fully funded and is in the installation phase.

3. Other Regions are interested in learning more: Vancouver Island, the Government of Alberta, and Montana.

> *I just wanted to let you know that after test driving the Bolt at your recent event in Kimberley we finally decided to just do it! We brought home our beautiful bouncing baby [Chevrolet] Bolt yesterday and we are so excited! Thank you for giving us the chance to try it out and the confidence to know we would be happy with it!*
>
> *~Dave & Ilona Hale, Kimberley, BC*

Photo Credit:
Dave Heath

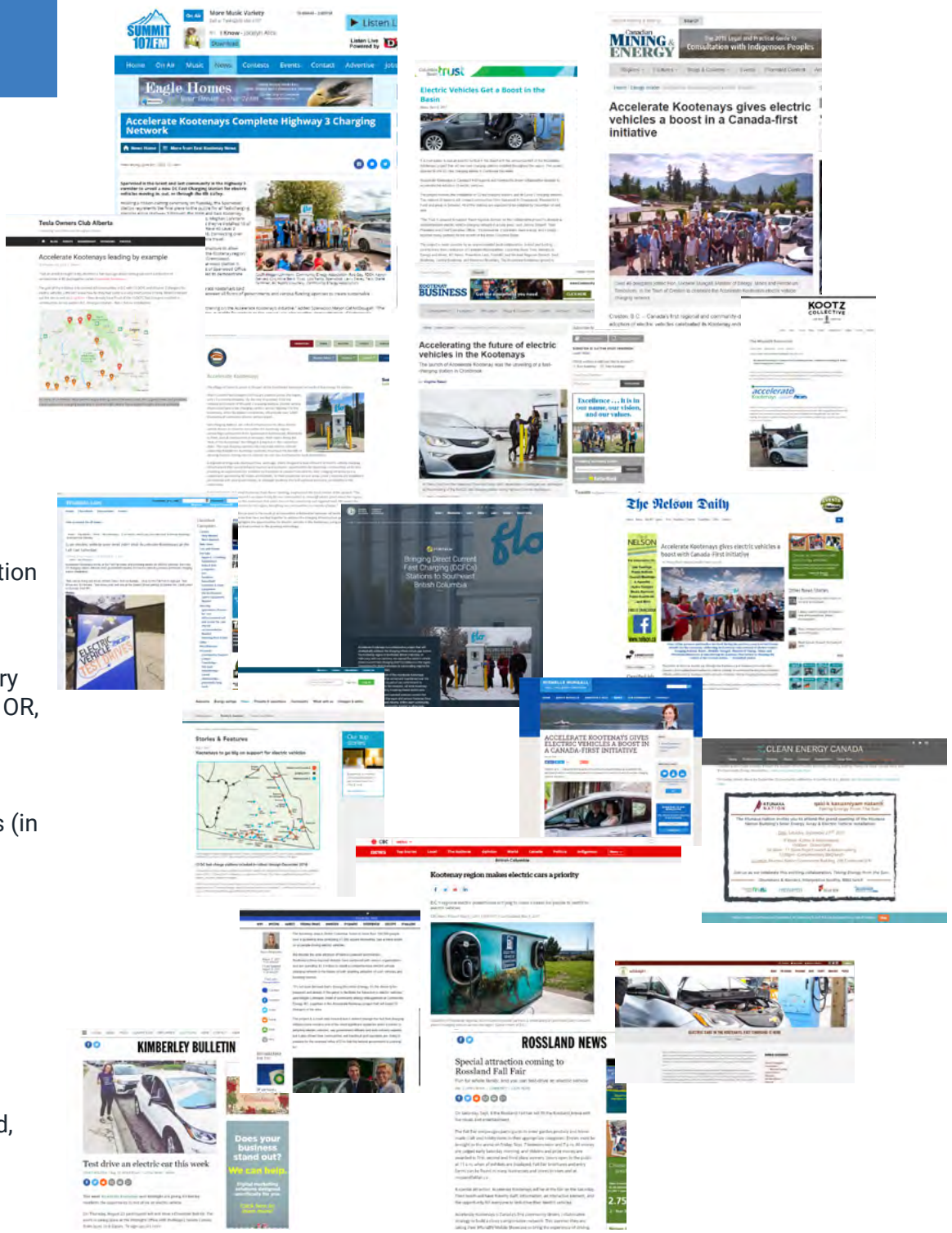
Impact continued

Recognition

Accelerate Kootenays has been recognized in a number of ways locally, provincially, nationally and even internationally as an innovative model of how local governments can support the adoption of EVs.

This came in the form of:

- invites to deliver addresses at conferences across the country (e.g., Vancouver, Kelowna, Ottawa, Toronto), and in Portland, OR,
- an award (see below),
- local media coverage,
- the presentation of our EV Experience videos at film festivals (in Jackson Hole and Mountain Film Festivals for example)



Awards

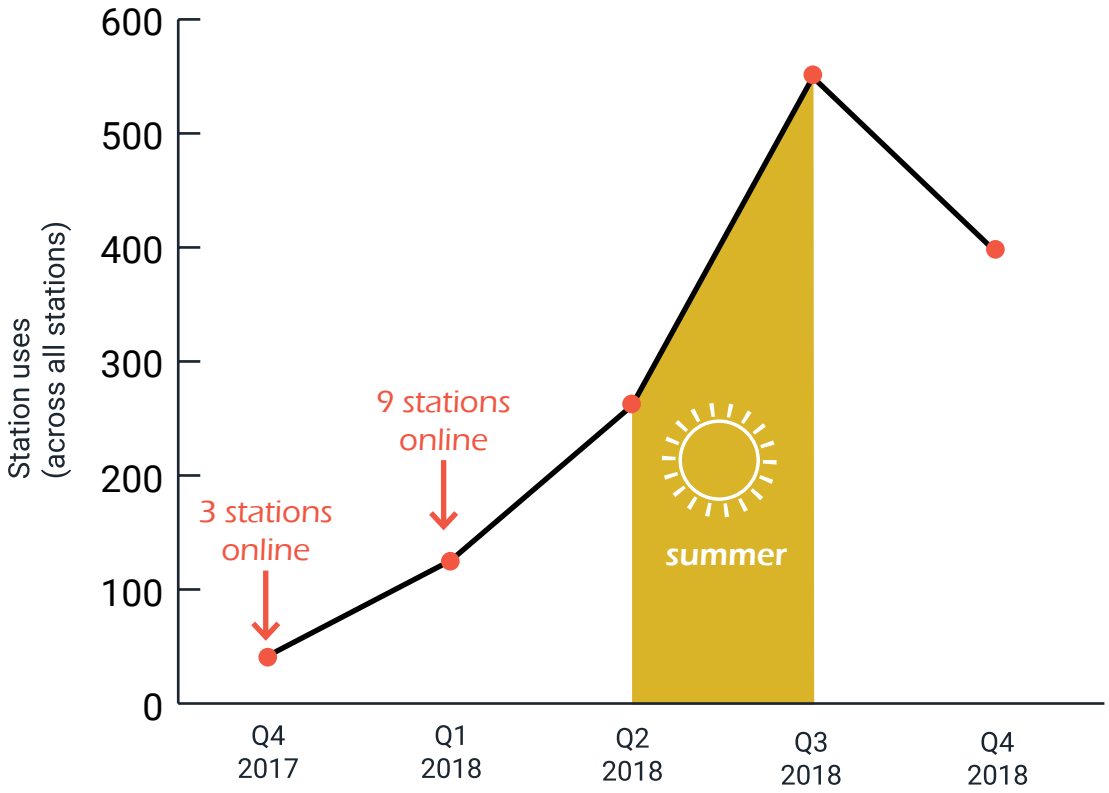
Union of BC Municipalities 2018 Community Excellence Award, Excellence in Sustainability.

Station Usage Summary

The usage metrics from 2018 confirm two main assumptions about usage that were made at the project outset:

1. Station use will peak during summer months
2. Station usage will escalate when the network is connected to surrounding networks (i.e., Hwy 1 and Hwy 3)

> *"I was able to do a Kootenay ski resort and brewery tour because of this DCFC network! I only have 1 car - a Chevy Bolt - and would not have been able to visit the Kootenays from Vernon if not for these fast chargers."*



Line ups during the summer at Radium DCFC. This station was highly used during summer months, facilitating travel from Hwy 1 (Alberta) to the southern Kootenay communities, which is a notable vacation area for Albertans. Station visits increased 158% from Q2 to Q3!

The jump in station uses between Q4 2017 and Q1/Q2 2018 was not just a case of more stations resulting in more uses. Rather, the deployment of the stations at Greenwood, Christina Lake, Salmo, Castlegar, Creston and Jaffray in Q2 resulted in an increase in uses at the initial 3 stations (Cranbrook, Canal Flats, Radium). In other words, a charging network must connect to neighbouring regions allowing visitors to get here, and residents to move freely!

Environmental Impacts

The environmental legacy of Accelerate Kootenays will continue to be realized post-implementation as more local residents learn about the applicability of electric vehicles in the Kootenays. The charging stations installed as part of the project create a base network intended to catalyze the transition to clean transportation in the region. The impact of this network has been immediate, and has inspired further investment in fast charging infrastructure.

> *"The adoption of electric vehicles during the implementation phase of Accelerate Kootenays was almost double what was projected."*

GHG emission reductions

The Accelerate Kootenays project has realized both direct and induced GHG emission reductions. Direct emission reductions result from station usage – they are measurable and can demonstrate the litres of gas and kilometers of travel that were 'fueled' by electricity.

However, direct emission reductions do not tell the full story, as not all kilometers traveled in EVs are captured through DC Fast Charging station data. In fact, most charging is done at home and there are a number of Level 2 stations in the region for which we do not have data and which would have seen increased use as a result of the fast charging network. Therefore, the gross emission reductions are likely to be at least ten times greater than the measurable, direct emission reductions.

Over the course of the project:

- Over 30 electric vehicles were purchased by local Kootenay residents
- Two municipal fleets incorporated at-work charging stations and an electric vehicle into their fleet
- The equivalent of 9,250 litres of gasoline were displaced by low carbon electricity dispensed through the fast charging stations
- Direct reduction of 21 tonnes of CO_2e as a result of charging at the Accelerate Kootenays stations

The implementation phase of Accelerate Kootenays project saw immediate environmental benefits through reduction in gasoline consumption and reduction of greenhouse gas emissions as a result of the adoption of electric vehicles locally. The network of fast charging in the Kootenays is expanding, thanks to additional investments by FortisBC in 2019. Municipal fleets are recognizing the potential for cost savings associated with gasoline and maintenance and more dealers today are stocking electric vehicles than prior to the project.

A Tesla charges at the Sparwood DCFC. This location amplifies the District's investment in renewable energy given the solar array on the District office in the background.

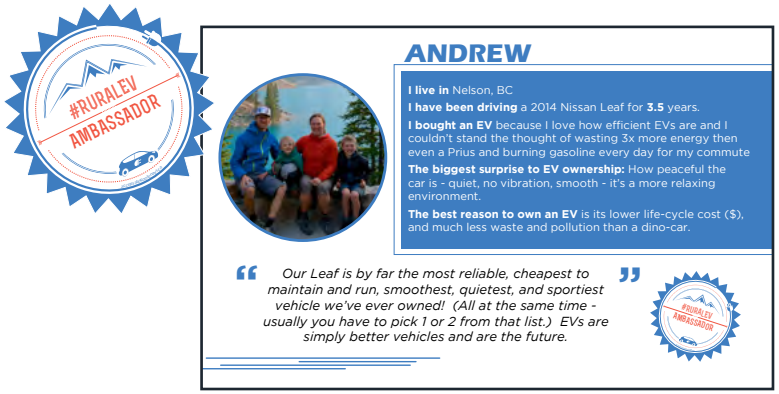
Marketing & Outreach

While the majority of funding was dedicated to the deployment of infrastructure, it was critical to simultaneously communicate to Kootenay residents and beyond that the stations were coming and precisely why.

To this end a broad marketing and communications strategy was created to show the value and efficacy of electric vehicles in our region. The concept and strategy that was developed embraced the unique local challenges and opportunities of the Kootenays. With rural BC values at its centre, our materials and messaging normalized EVs in the mountainous context and demonstrated that the rural, adventure-centric lifestyle can be maintained.

The first and arguably most valuable asset was local EV drivers - "EV Ambassadors". These individuals were not only knowledgeable and enthusiastic about EVs, but they were also were living, relatable proof of EVs working in the Kootenays. Their contribution can not be understated and we sincerely thank them for their time and energy.

EV Ambassadors provided real-world examples for us to talk about at events, and, when present, they displayed their vehicles and answered questions about the technology and their experiences. In some cases they even lent us their time and cars to film our EV Experience videos!



Primary marketing milestones include:

- Branding and visual identity
- Social media presence
- Print material (EV myths brochure, 10 reasons to drive an EV card, project business card, project brochure)
- Info booths at local events
- Ambassador cards (example below, left)
- Winter EV Experience video
- Fall EV Experience video
- Rural EV Mobile Showcase

Clockwise from top left: EV display at the CBT Symposium (2017); EV Ambassador Braeden Fairbairn explaining how charging works; Andrew Chewter (of Nelson); Dave Cornelius (of Rossland)

2016

2019

Existing DCFC

Accelerate Kootenays DCFC & Level 2

Accelerate Kootenays Level 2