



2nd Gen EVs and Charging Networks

Andrew Chewter
kootenayEVfamily.ca

October 4, 2017
Green Home and Energy Show
Nelson, BC

Introduction

Personal

- Rural EV Ambassador for Accelerate Kootenays
- Environmental engineer and owner of a Nissan Leaf EV for 3.5 years and an electrified cargo bike for 2 years
- Active family of 4, two young kids

EVs/PHEVs

- EV = electric vehicle, battery only
 - Sometimes known as a BEV (battery EV)
- PHEV = plug-in hybrid electric vehicle
 - More limited range, but typical daily driving pattern = can drive on electricity majority of the time

This presentation is going to be quick – go to my website/blog later to see the slides in detail:

www.kootenayEVfamily.ca



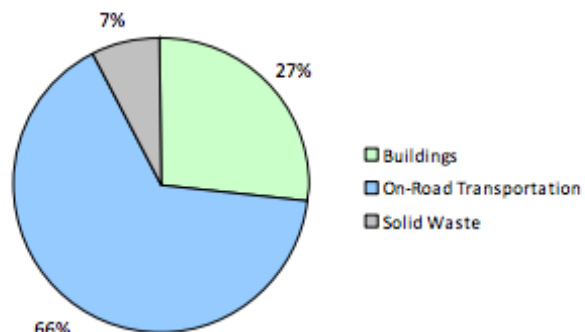
The Problem

RDCK Inventory

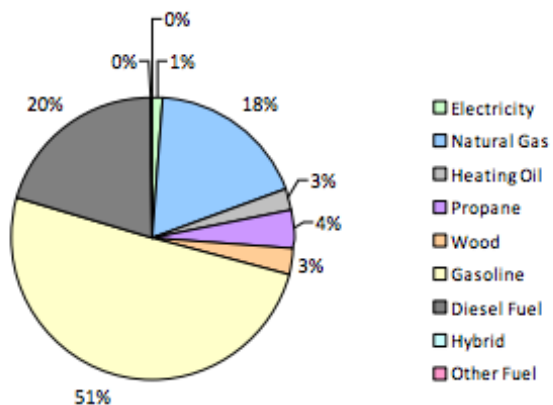


3

2010 GHG Emissions Sources (Total for this Community)



2010 Total Emissions by Fuel Type



Hierarchy of Reduction of Emissions for Transportation

- Improve walking and cycling routes and infrastructure
- Electrify buses (*reducing Op costs*), increase frequency and route density
- Add commuter buses
- Electrify personal transportation, encourage ride-sharing, car co-ops (*requires concurrent infrastructure improvements and supportive development bylaws*)

Why an EV?

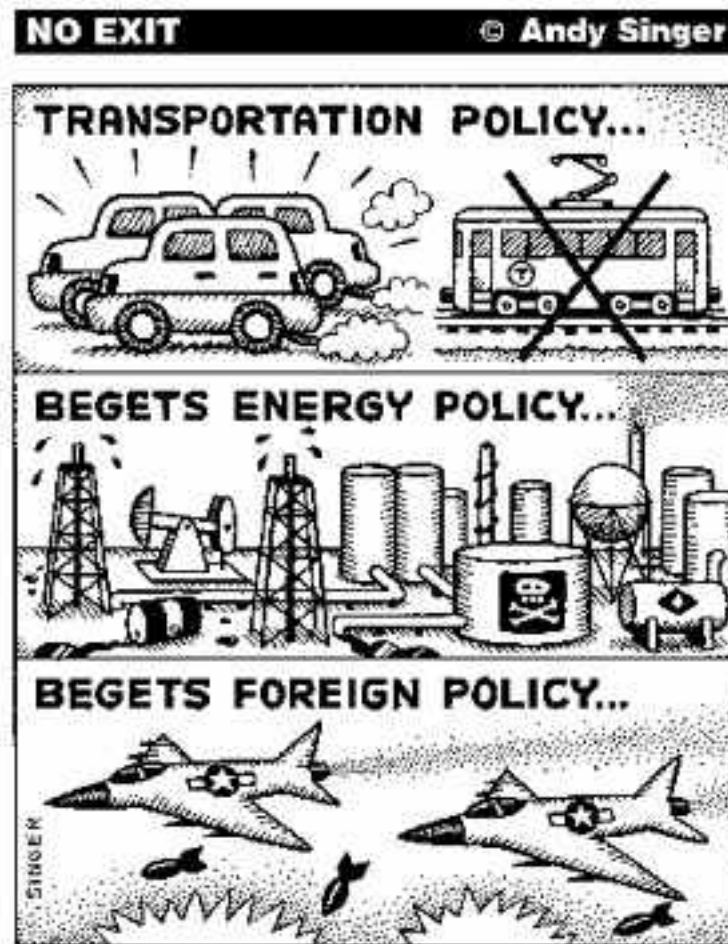
Environmental Improvements

- Improve local/global air quality (*no stinky bus idling downtown*)
- Lower energy/material use over total life-cycle
- 4 ■ In the Koots, “100 mile clean energy diet”

EVs are better than gas cars!

- Single gear + torque = instantaneous acceleration
- Smooth and quiet
- Easy home “refueling”
- Cheaper TCO, little maintenance

Also helps to avoid...



<http://www.lysistrataproject.org/oilandwar.htm>

1st Gen vs 2nd Gen

- 1st Gen – generally built between 2011 and 2016/2017 (year is different depending on manufacturer)
- 2nd Gen on the road now, and more coming all the time. More refined, more power, more range.
- Complete list at my website under “Available EVs in Canada”



Range (km)	Typ. PHEV	1 st Gen EV	2 nd Gen EV
Minor hills, -10C	25 - 50	90 - 150	200 - 300
Minor hills, +20C	30 - 60	120 - 180	250 - 400+
Flat, max range	40 - 80	140 - 200	300 - 500+

2nd Gen EVs



Available now



Early 2018



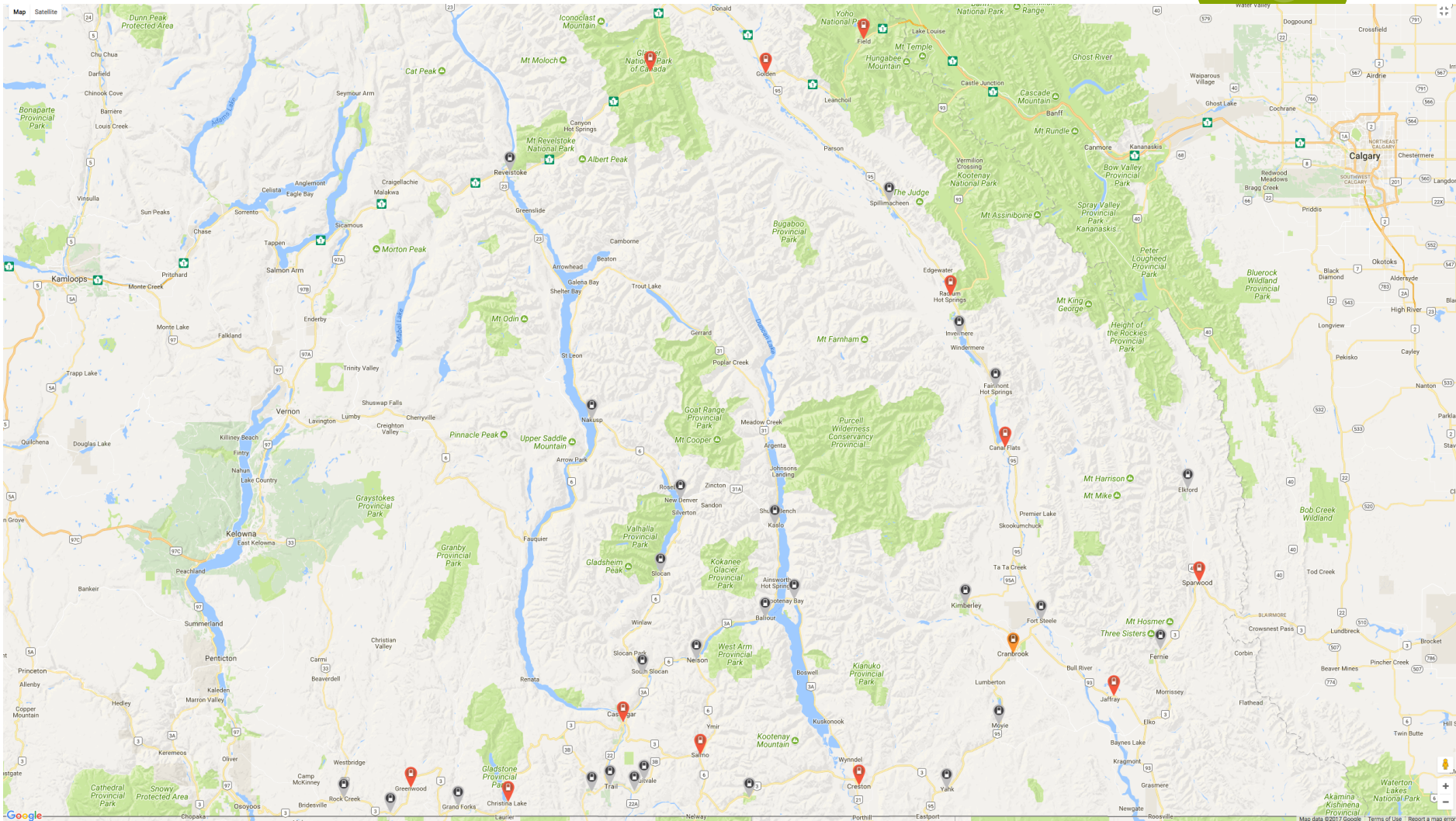
Late 2018



Mid to late 2018

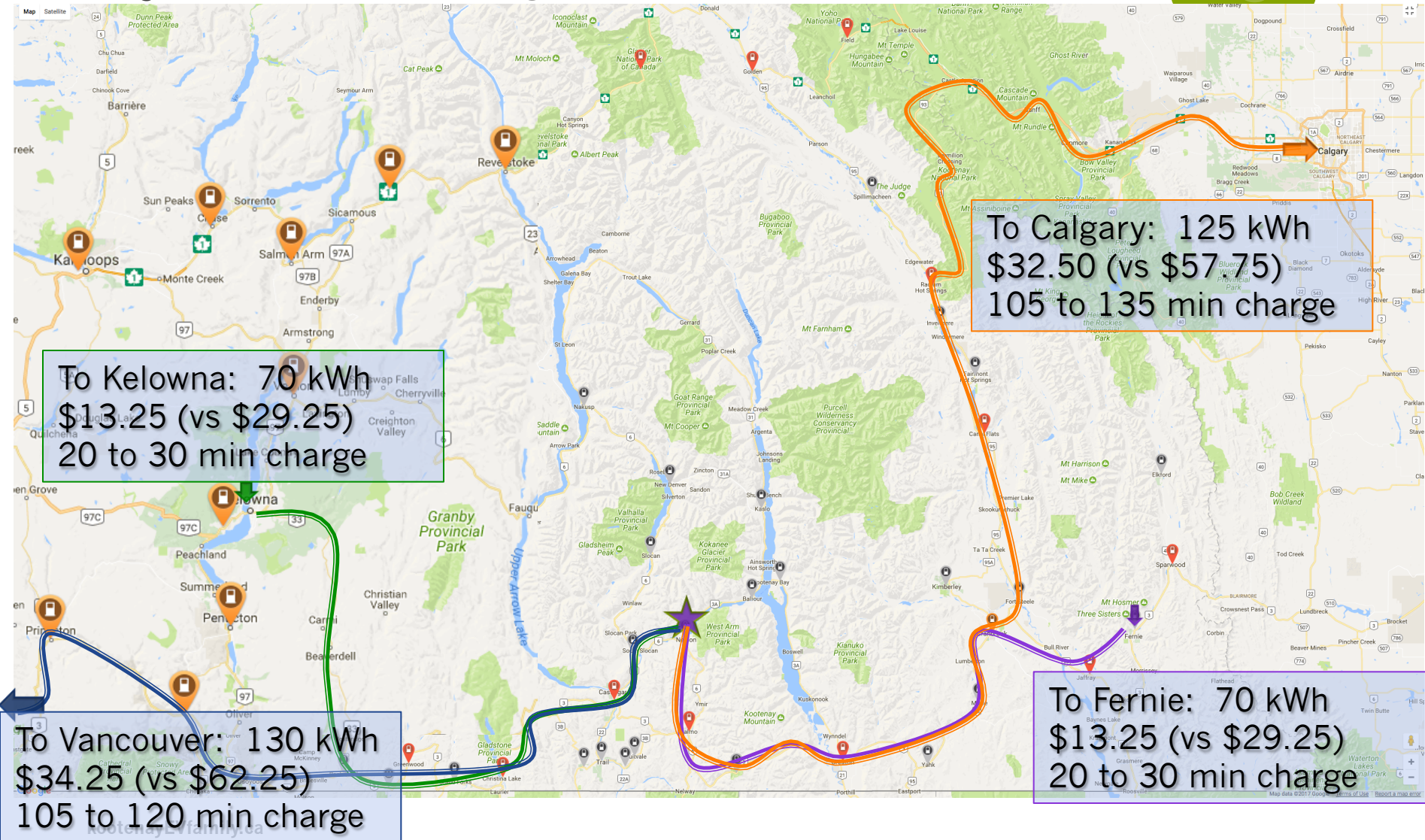


Infrastructure coming to the Kootenays



Fast Charging + 2nd BEVs

- Assumptions: mid-size car (e.g. Leaf, Bolt, M3, etc)
- Cost of electricity - \$0.10/kWh for first 45 kWh, \$0.35/kWh thereafter utilizing DC Fast Chargers. Cost of fuel for similar car @ 7.5 L/100km and \$1.20/L.



Questions?

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Electric vehicle tidbits
and adventures in the
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achewter@gmail.com
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