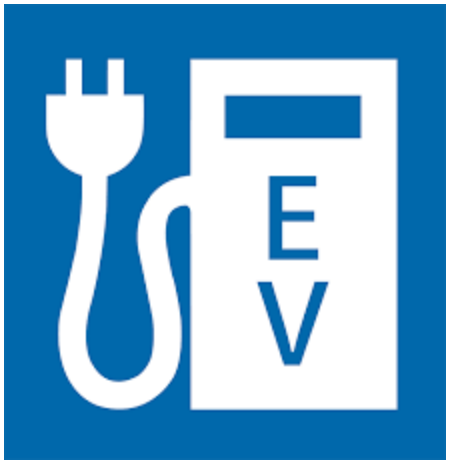
EVRoam - An Update and Potential EV Research Topics

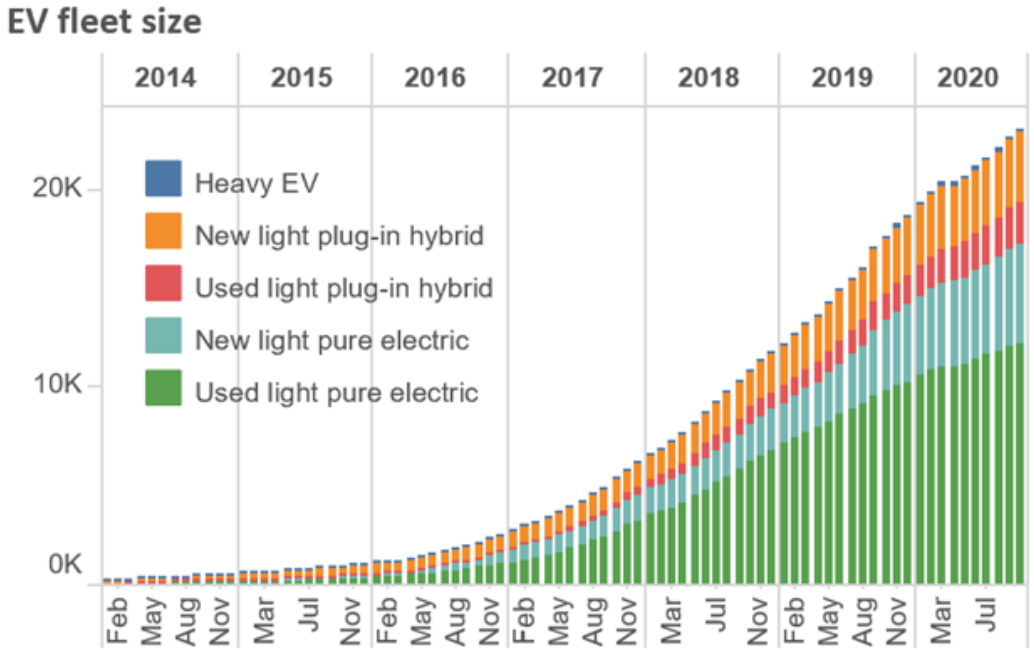
Transport Emissions Knowledge Hub – 3 Dec 2020



WAKA KOTAHI
NZ TRANSPORT AGENCY

New Zealand Government

NZ Electric Vehicle (EV) Fleet



- EV Fleet as at Oct 20
  23,046 EVs
  1.9% of new registrations
  0.55% of fleet (Dec 19)
  75% Individual owner
  77% BEV
  Concentrated in Auckland

EVROAM

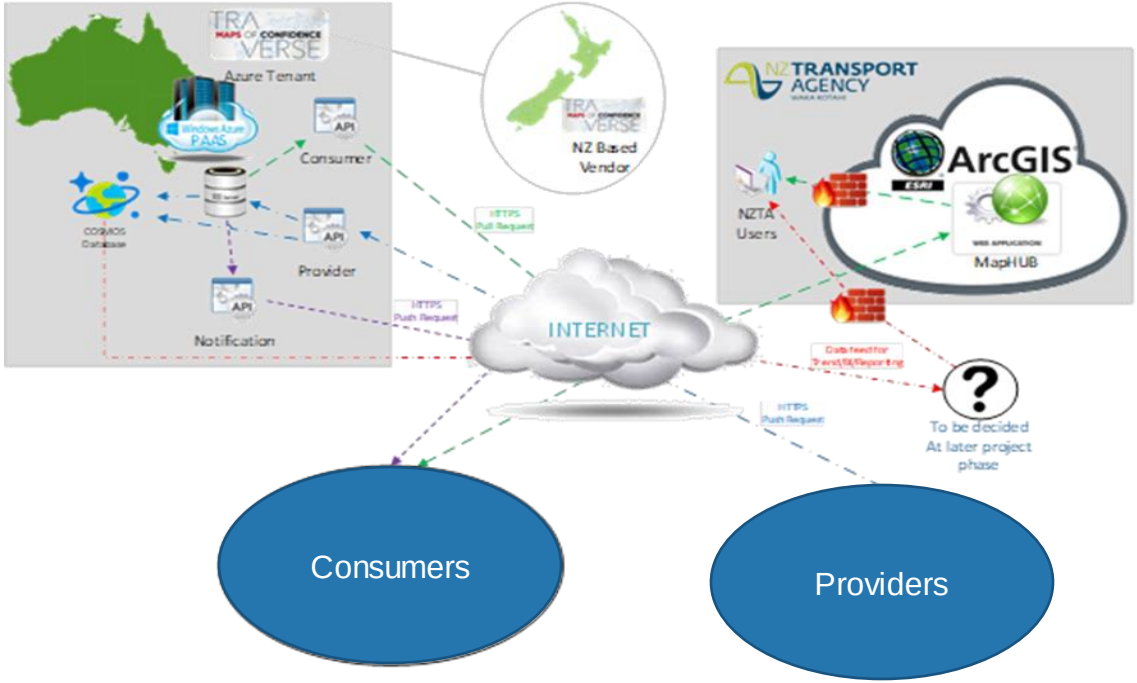
Background

- Developed as part of Waka Kotahi Electric Vehicle (EV) Programme of Work.
- An initiative launched in July 2018 to make travelling by EV safer and more reliable.
- Provides a real time data feed to take the uncertainty out of the location and availability of nationwide charging stations.
- The data is then made available to third party consumer-facing apps.

EVROAM VISION

A live database that is the single source of truth for the nationwide network of Electric Vehicle charging stations.

EVROAM


Azure Tenant
Windows Azure PAAS
API
Consumer
API
Provider
API
Notification
COSMOS Database
NZ Based Vendor
INTERNET
NZ TRANSPORT AGENCY
NZTA Users
ArcGIS
ESRI
MapHUB
?
To be decided At later project phase
Consumers
Providers

NZTA EVRoam Availability Dashboard

Use this dashboard to understand trends on how charging stations are used.

Charging Station Owner:

All

Current Type:

All | AC | DC

Usage: Daily Average kWh

0 — 1,000

Months Operational:

0 - 100

kWh has been calculated using the charging station's kW rating and the time it is occupied.

There is a rolling daily average for each month.

TRAVERSE MAPS OF CONFIDENCE

Percentage of charging stations by kW rating

7 kW	22.94%
22 kW	14.69%
25 kW	7.99%
50 kW	49.48%

Last update: a day ago

Overall daily average charging station use

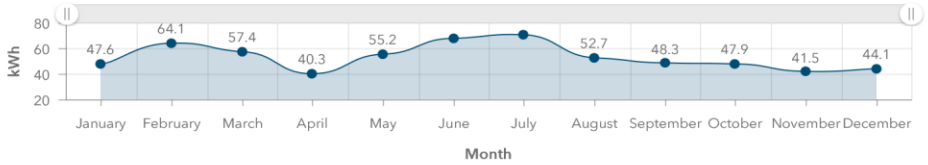
52.9 kWhs

By area selected

Last update: a day ago

Daily Average

Daily Average kWh usage per month

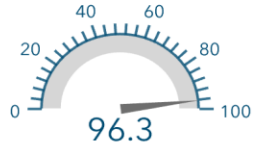


Rolling monthly average. This the sum of Charging Stations within selected area.

Last update: a day ago

Daily Average | Date Operational

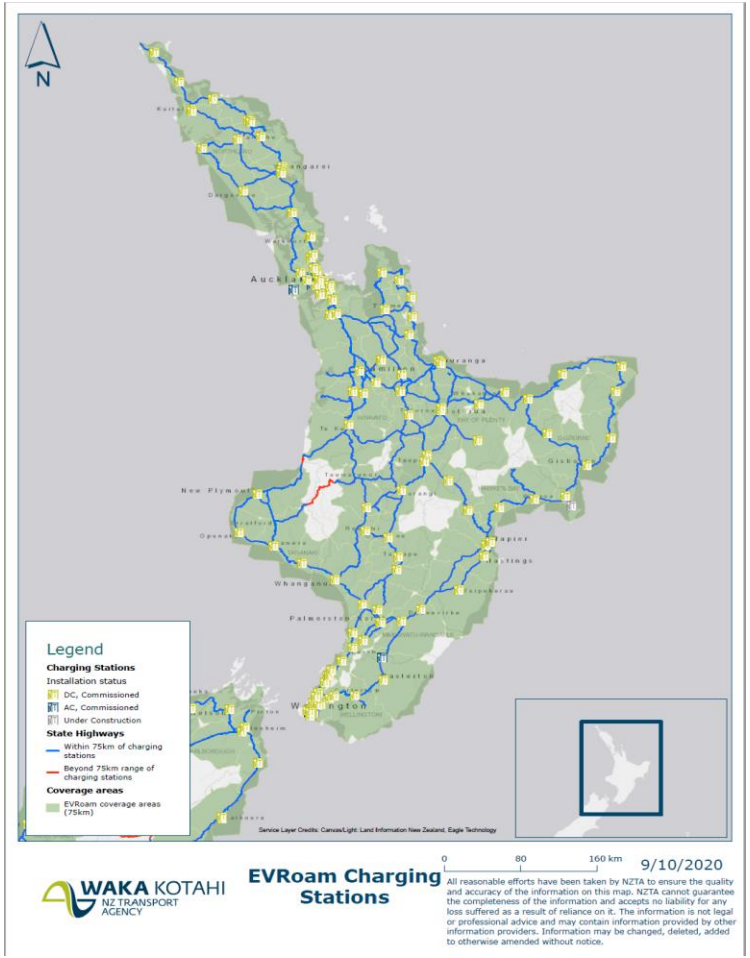
NZ Road Coverage Area*

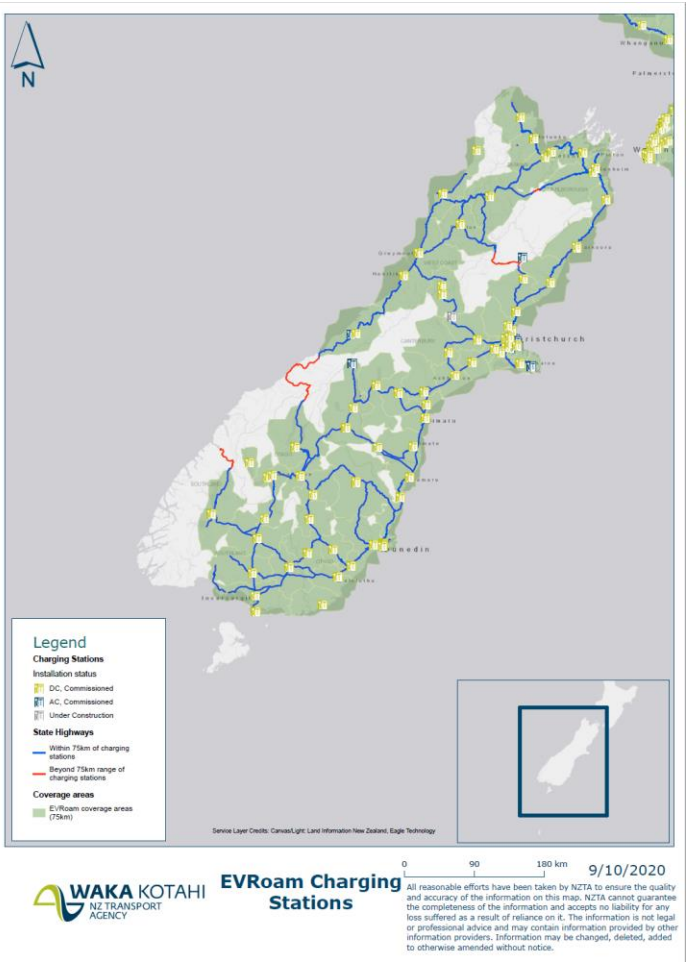


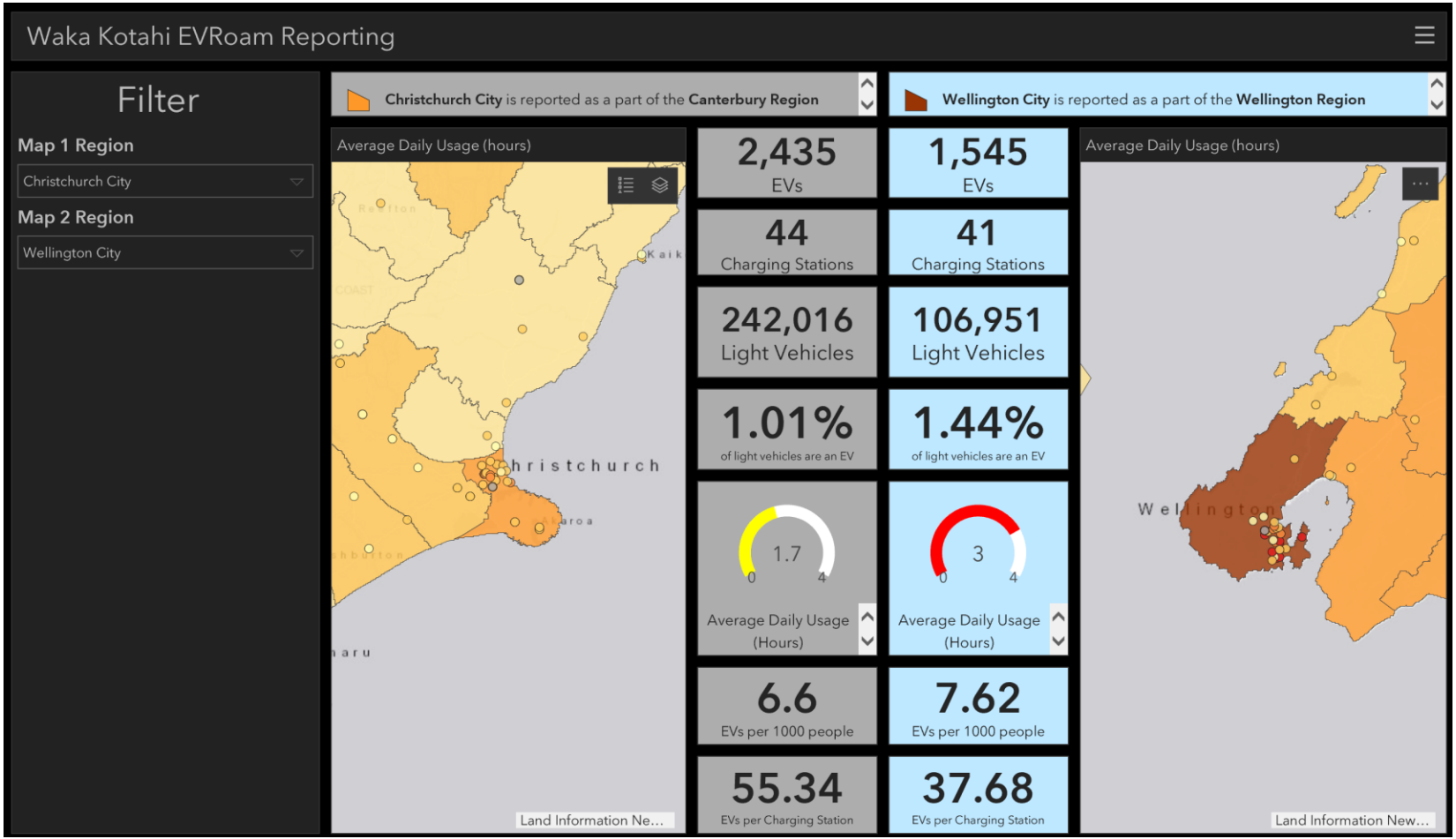
*The percentage of NZ roads covered by charging stations. Using the SH Network dataset

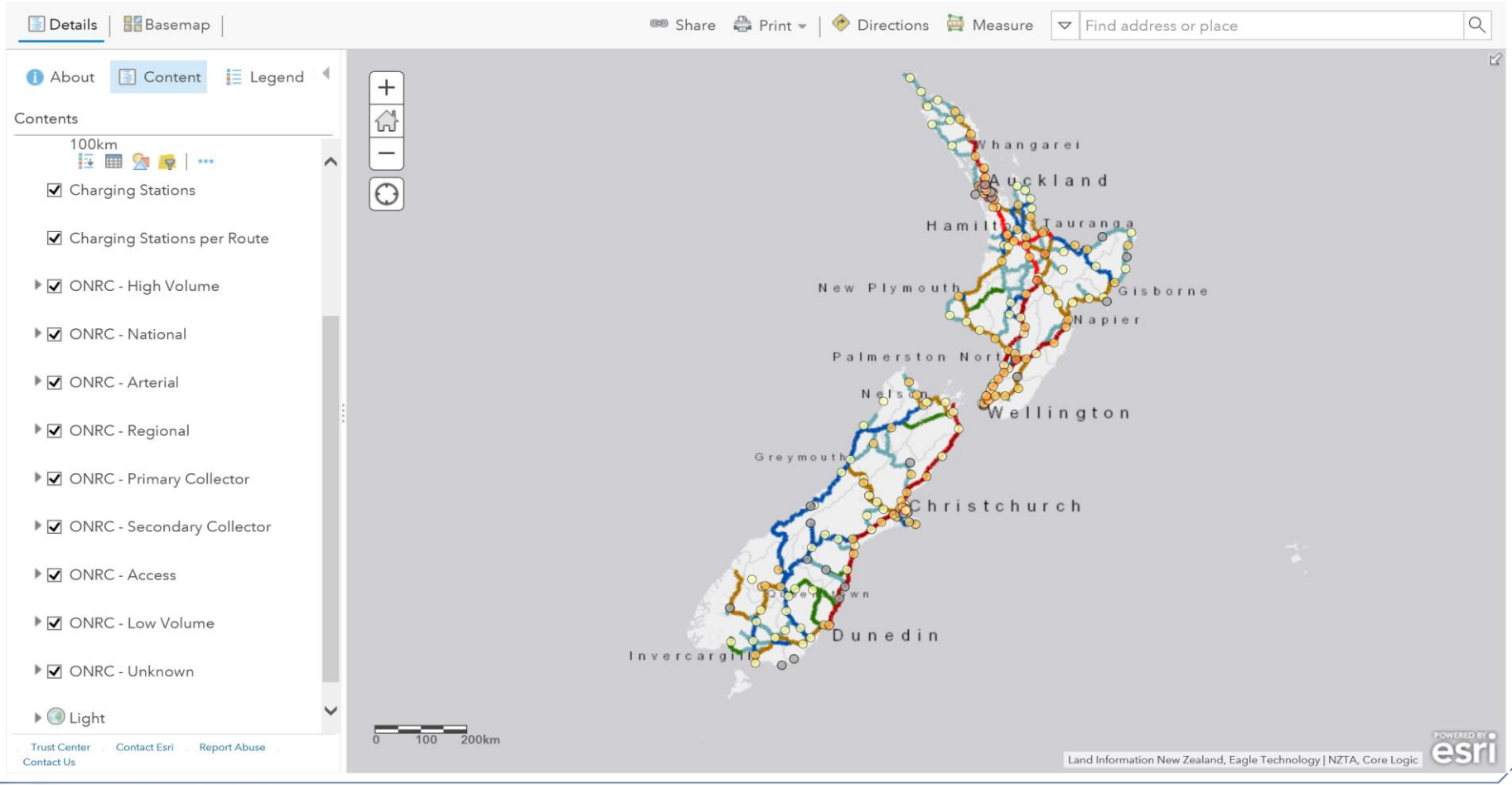
Last update: 4 days ago

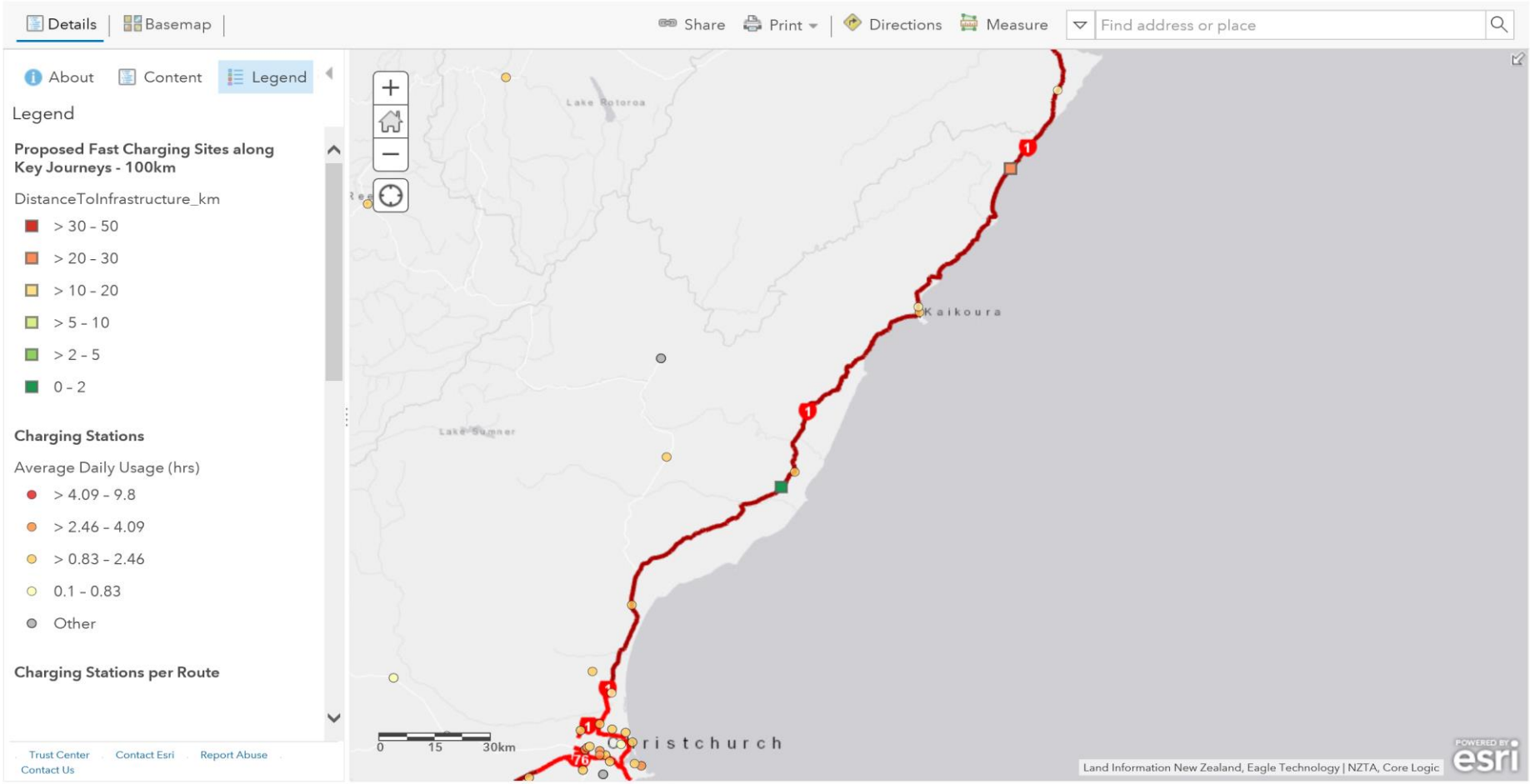
Road Coverage


N
Legend
Charging Stations
Installation status
DC, Commissioned
AC, Commissioned
Under Construction
State Highways
Within 75km of charging stations
Beyond 75km range of charging stations
Coverage areas
EVRoam coverage areas (75km)
Service Layer Credits: Canvas/Light: Land Information New Zealand, Eagle Technology
0
80
160 km
WAKA KOTAHI
NZ TRANSPORT AGENCY
EVRoam Charging Stations
9/10/2020
All reasonable efforts have been taken by NZTA to ensure the quality and accuracy of the information on this map. NZTA cannot guarantee the completeness of the information and accepts no liability for any loss suffered as a result of reliance on it. The information is not legal or professional advice and may contain information provided by other information providers. Information may be changed, deleted, added to otherwise amended without notice.


N
Legend
Charging Stations
Installation status
DC, Commissioned
AC, Commissioned
Under Construction
State Highways
Within 75km of charging stations
Beyond 75km range of charging stations
Coverage areas
EVRoam coverage areas (75km)
Service Layer Credits: Canvas/Light: Land Information New Zealand, Eagle Technology
0
90
180 km
WAKA KOTAHI
NZ TRANSPORT AGENCY
EVRoam Charging Stations
9/10/2020
All reasonable efforts have been taken by NZTA to ensure the quality and accuracy of the information on this map. NZTA cannot guarantee the completeness of the information and accepts no liability for any loss suffered as a result of reliance on it. The information is not legal or professional advice and may contain information provided by other information providers. Information may be changed, deleted, added to otherwise amended without notice.


Waka Kotahi EVRoam Reporting
Filter
Map 1 Region
Christchurch City
Map 2 Region
Wellington City
Christchurch City is reported as a part of the Canterbury Region
Wellington City is reported as a part of the Wellington Region
Average Daily Usage (hours)
2,435
EVs
1,545
EVs
44
Charging Stations
41
Charging Stations
242,016
Light Vehicles
106,951
Light Vehicles
1.01%
of light vehicles are an EV
1.44%
of light vehicles are an EV
1.7
0
4
Average Daily Usage (Hours)
3
0
4
Average Daily Usage (Hours)
6.6
EVs per 1000 people
7.62
EVs per 1000 people
55.34
EVs per Charging Station
37.68
EVs per Charging Station
Average Daily Usage (hours)
Land Information Ne...
Land Information New...


Details
Basemap
Share
Print
Directions
Measure
Find address or place
About
Content
Legend
Contents
100km
Charging Stations
Charging Stations per Route
ONRC - High Volume
ONRC - National
ONRC - Arterial
ONRC - Regional
ONRC - Primary Collector
ONRC - Secondary Collector
ONRC - Access
ONRC - Low Volume
ONRC - Unknown
Light
Trust Center
Contact Esri
Report Abuse
Contact Us
Whangarei
Auckland
Hamilton
Tauranga
New Plymouth
Gisborne
Napier
Palmerston North
Nelson
Wellington
Greymouth
Christchurch
Dunedin
Invercargill
0
100
200km
Land Information New Zealand, Eagle Technology | NZTA, Core Logic
esri


Details
Basemap
Share
Print
Directions
Measure
Find address or place
About
Content
Legend
Legend
Proposed Fast Charging Sites along Key Journeys - 100km
DistanceToInfrastructure_km
> 30 - 50
> 20 - 30
> 10 - 20
> 5 - 10
> 2 - 5
0 - 2
Charging Stations
Average Daily Usage (hrs)
> 4.09 - 9.8
> 2.46 - 4.09
> 0.83 - 2.46
0.1 - 0.83
Other
Charging Stations per Route
Trust Center
Contact Esri
Report Abuse
Contact Us
Lake Rotoroa
Kaikoura
Lake Sumner
Christchurch
0
15
30km
Land Information New Zealand, Eagle Technology | NZTA, Core Logic
esri

Additional Data and Potential Research Topics

- To continue to support a level of public fast charging infrastructure that - together with home charging and slow public charging - will make it convenient to travel across town and New Zealand in a light electric vehicle, we need to add more data and research in areas such as;
  - Areas with seasonal or highly variable travel patterns
  - Changing urban landscapes – high density developments with no off street charging options
  - EV owners and their experiences to shape up future needs in a changing environment
  - Electricity network demand
  - Battery and charging technology trends