Planning for Evs, Climate Change & Community Health

Gateway Centre of Excellence in Rural Health Webinar
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What is a Healthy Rural Community?

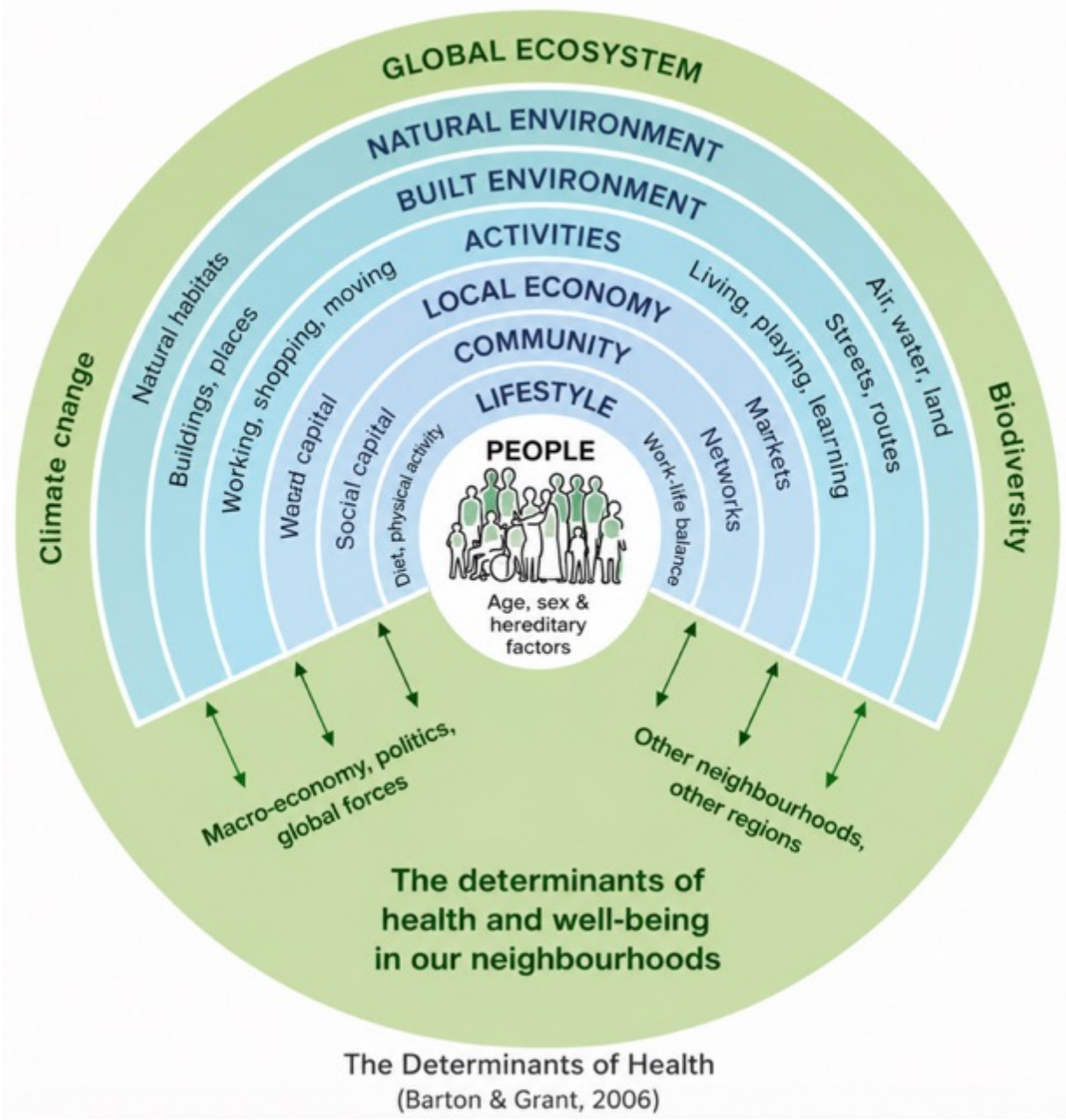
A community that supports the well-being of people, the environment, and the local economy—now and into the future

- **Physical health** – clean air, active living, safety
- **Economic health** – affordability, jobs, resilience
- **Environmental health** – climate, land, water
- **Social well-being** – access, inclusion, connectivity

rural and small town

Climate Change, Transportation and Rural Health

- Rural lens: distance, access, vulnerability
- Climate change is a health issue
- Transportation is a key determinant of rural health
- EVs may seem like a transportation issue—but they are tied to rural health outcomes.



The Determinants of Health
(Barton & Grant, 2006)

So… What Do EVs Have to Do With It?

- Transportation - 32% of emissions (Ontario)
- Rural communities - higher reliance on vehicles
- EVs - lower emissions and lower operating costs
- Access to services depends on mobility

- EVs help address **climate action** and contribute to **community resilience**

EVs: From “Future” to Reality

- EV Adoption is Growing—But Not Evenly
  - **Global:** Rapid growth (~20% of new sales)
  - **Canada:** Mid-range (~10–15%, fluctuating - 170,000 EVs sold in 2025)
  - **U.S.:** Slower (~5–6%)

- The transition is underway—but rural communities will only benefit if we plan for it…

This is where rural Ontario differs …

- Typically, longer distances to travel
  - $300 vs $3000 + Lower operating costs
- In rural areas often easier to charge at home (95%)
- EV’s are increasingly affordable

Rural Communities: Economic & Environmental Considerations

- Economic (lower fuel costs, tourism)
  - Level 3 chargers for the travelling public or your community may be left behind…
- Climate (emissions reduction)

Role of Municipalities

Municipalities are key to building the conditions for successful EV adoption and healthier, more resilient rural communities.

Although there are many details here – the focus is on Planning, Partnerships and Enabling Infrastructure

Planning

Plan today for a low-carbon, accessible future.

- Integrate EVs into official plans, transportation plans and climate action plans
- Consider land use, parking, and future charging needs
- Plan for equity—ensure rural and underserved communities benefit
- Use local data to guide decisions and investments

Partnerships

Work together to leverage resources and expertise.

- Collaborate with utilities, provincial/federal governments, and Indigenous communities
- Engage local businesses, non-profits, and community organizations
- Share knowledge and coordinate efforts across regions
- Build public trust through engagement and transparency

Enabling Infrastructure

Support the build-out of reliable, convenient infrastructure.

- Identify priority locations for public charging
- Streamline permitting and reduce regulatory barriers
- Support fleet electrification for municipal and community use
- Ensure infrastructure is reliable, accessible, and future-ready

When municipalities plan, partner, and enable infrastructure, we accelerate the transition to EVs—and build healthier, more resilient communities.

Chargers

Level 1	Level 2	Level 3
1.3 kW and 2.4 kW AC current	3kW to under 20kW AC current	50kw to 350kw DC current
5 km of range per hour of charging; up to 24 hours to fully charge a battery	30 to 50km of range per hour of charging; overnight full battery charge	Up to 30 km of range per minute; full battery charge in under an hour
A cable provided with your car plugged into a 120 V plug.	A professional installed charger with smart components.	A large scale, commercial charger in a public location.

One Driver's Experiences with EVs

- We wanted an EV to get away from Fuel consumption.
- Plug 'N Drive was an invaluable resource on my EV journey.
- Research, Research, Research (but I'm also a Data Nerd).
- Plan ahead.
- You maybe need to change your mindset.

- Owner of a 2023 Ford F-150 Lightning and a 2024 Hyundai Ioniq 5
- We are road-trippers.
- Daughters are heading to college.
- Daily commute is not always the same.
- Sometimes the pluses are unplanned for.

What We're Learning from Experience

- Most charging happens at home
- Fast chargers shape travel decisions
- Long distance rural travel is workable—but needs planning

Regional Partnership – Rural ReCharge

Goals of the partnership

- Develop a regional electric vehicle charging network
- Reduce greenhouse gas emissions
- Bridge the gap in charging infrastructure between Highway 401 and the Lake Huron and Georgian Bay
- Accelerate EV adoption
- Boost tourism and economic development

Regional Partnership – Rural ReCharge

DCFC Station Government-owned

DCFC Station Private-owned

DCFC Station Private-owned Limited availability

Level 2 Station

Regional Partnership – Rural ReCharge

Where is the project at now

- Working alongside an implementation partner to own and operate the network
- Five Counties remaining in the partnership
- Received MTO ChargeOn Funding
- Desire for the social, economic and environmental benefits of EV adoption

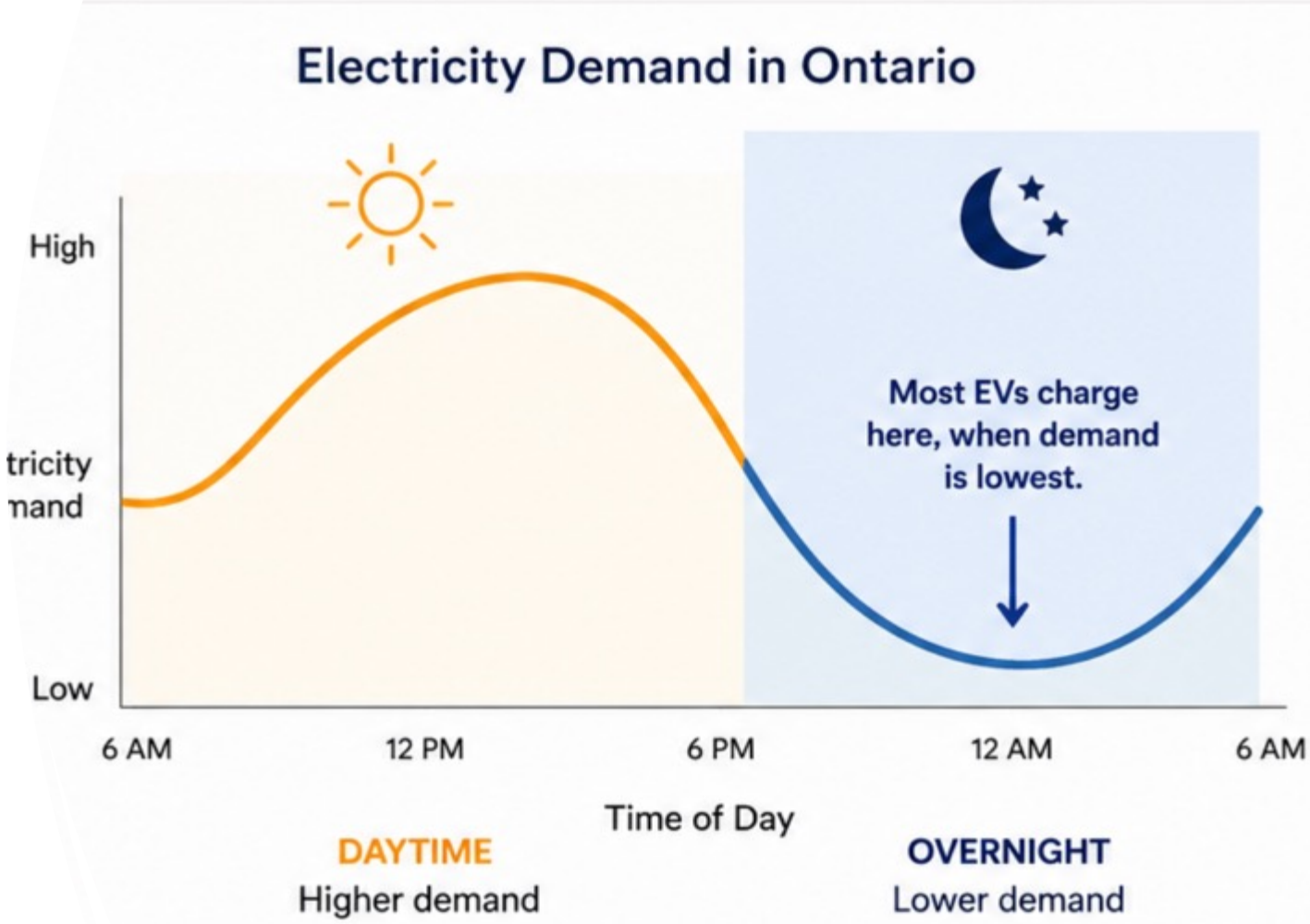
EVs: 6 Myths *(ask yourself: have I heard these?)*

Myth 1:
EVs will overload the electricity grid

Reality:

- Most charging happens **at home, overnight**
- Charging occurs during **off-peak hours**
- **Time-of-use pricing** supports this behaviour
- Smart meters and timers help **manage demand**

Most EVs charge at home, **overnight**—when electricity demand is lowest.



Myth 2: We've got public chargers—problem solved

Reality

- Many communities have Level 2 chargers
- Good for longer stays (workplaces, community centres, tourism)
- But not designed for travellers or quick stops

What's Missing

- Level 3 fast chargers are essential
- Enable through-travel and multiple stops
- Shape where people choose to go

In the words of one EV owner:

“Many municipalities have installed Level 2 chargers...

But for someone travelling through, or making multiple stops, they’re often not enough. In my own experience, I actually plan my route based on where fast chargers are located. If a community doesn’t have one, I tend to go to one that does.”

Myth 3: EVs are too expensive.

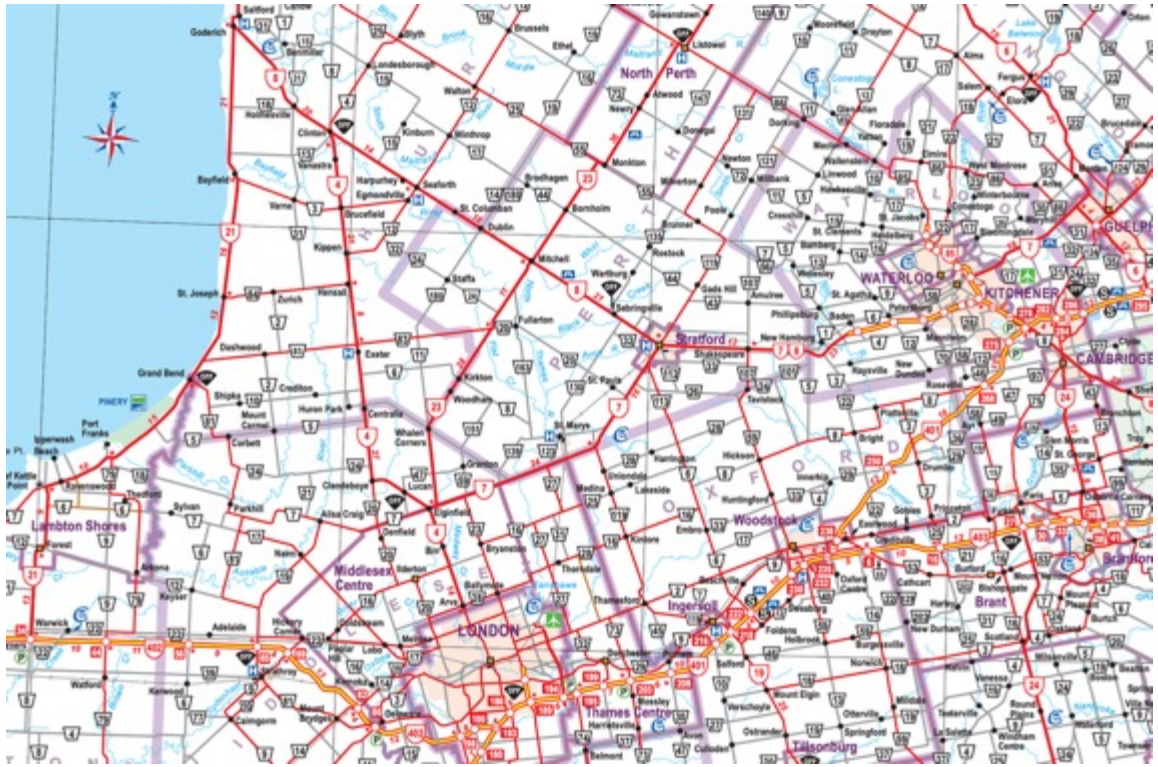
- Some models still have a higher upfront cost (although this is changing)
- But operating costs are much lower
- Charging at home is significantly cheaper than fuel
- Less maintenance (no oil changes, fewer moving parts)
- Reduced brake wear (regenerative braking)

Myth 4: EVs Don’t Work in Rural Areas

Reality:

- Rural households often have off-street parking: easier home charging
- Many EVs now offer 400–500 km of range
- Most daily travel is well within that range
- Less congestion can help maximize efficiency

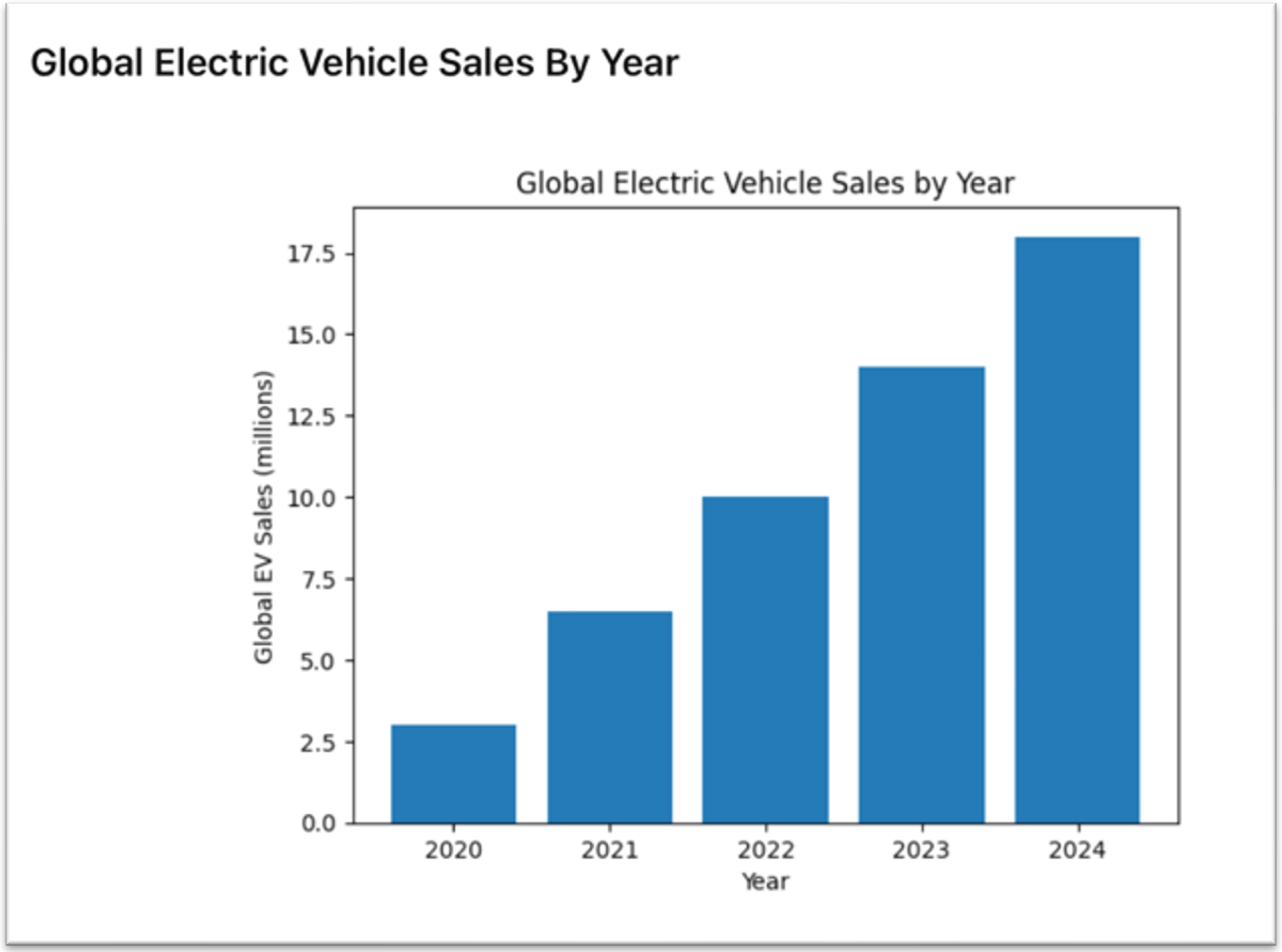
“*In many cases, rural conditions aren’t a barrier—they’re an advantage*.”



Myth 5: EV adoption has already peaked

Reality:

- EV adoption is **still growing globally**
- Growth has **slowed—but is continuing**
- Infrastructure and affordability are **catching up**
- Governments and manufacturers remain **committed**



Reference: International Energy Agency – Global EV Outlook 2025

Myth 6: EVs are worse for the environment than gasoline vehicles

- EV production (especially batteries) has environmental impacts
- But over their lifetime, EVs produce substantially fewer emissions than gasoline vehicles
- Ontario's electricity grid is relatively low-carbon
- Battery recycling and technology are continually improving
- Conventional vehicles also have significant lifecycle impacts

Not perfect—but better and improving over time.

Key Takeaway from Myths

- Many concerns are:
  - outdated
  - misunderstood
  - already being addressed

What Can Municipalities Do?

Five Practical Actions:

- Update zoning + site plan policies
- Plan for equitable charger placement
- Design for accessibility
- Facilitate partnerships
- Lead by example

Final Thoughts

- EVs are coming
- The question is not *if*, but *how*
- Rural communities can lead

Questions/ Discussion

What is:

- your experience with EV's
- your experience charging

- Other observations?

For further details:

"*Planning for electric vehicles- myths, realities and rural opportunities*". Authors W. Caldwell and D. Wallis in Municipal World, September, 2025.