

**EV Ready**  
**Requirements for**  
**Municipalities**  
**May 11<sup>th</sup>, 2022**  
**We will get started at**  
**1 pm**





- Why EVs are part of the climate change solution (but not the silver bullet), Air pollution and economic benefits
- The role of EV requirements in driving EV uptake and reducing future retrofit costs
- Results of EV Costing Study
- Municipal Authorities
- Input from Consultations
- City of Toronto 100% EV Ready Requirements in parking by-law, Micheal Hain

# Land Acknowledgements



Joining you all today from the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee and Mississaugas.

This land is covered by the Dish With One Spoon Wampum Belt Covenant, which was an agreement between the Haudenosaunee and Anishinaabek to share and care for the resources around the Great Lakes.

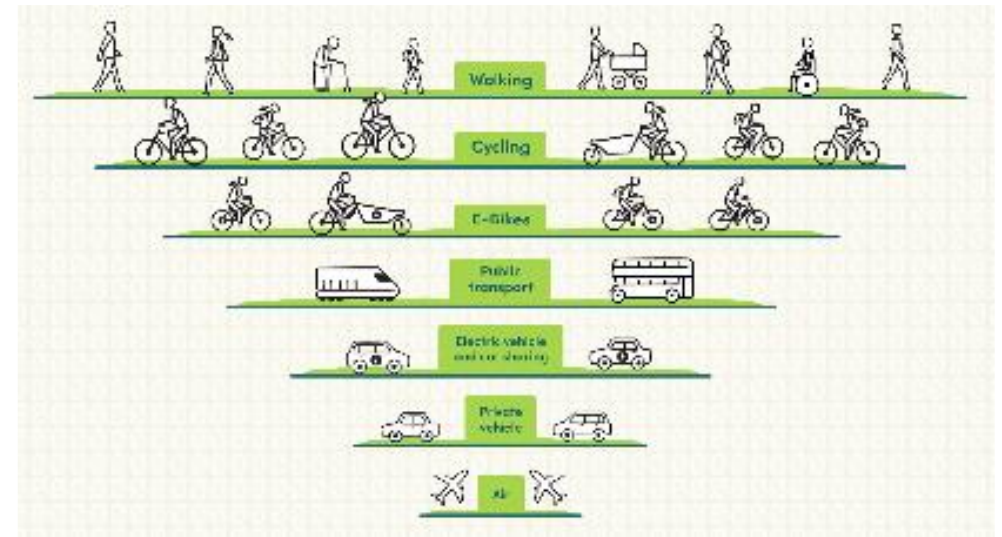
- <https://www.youtube.com/watch?v=AZ6gvd-HaP8>



# Climate Change and Transportation Emissions

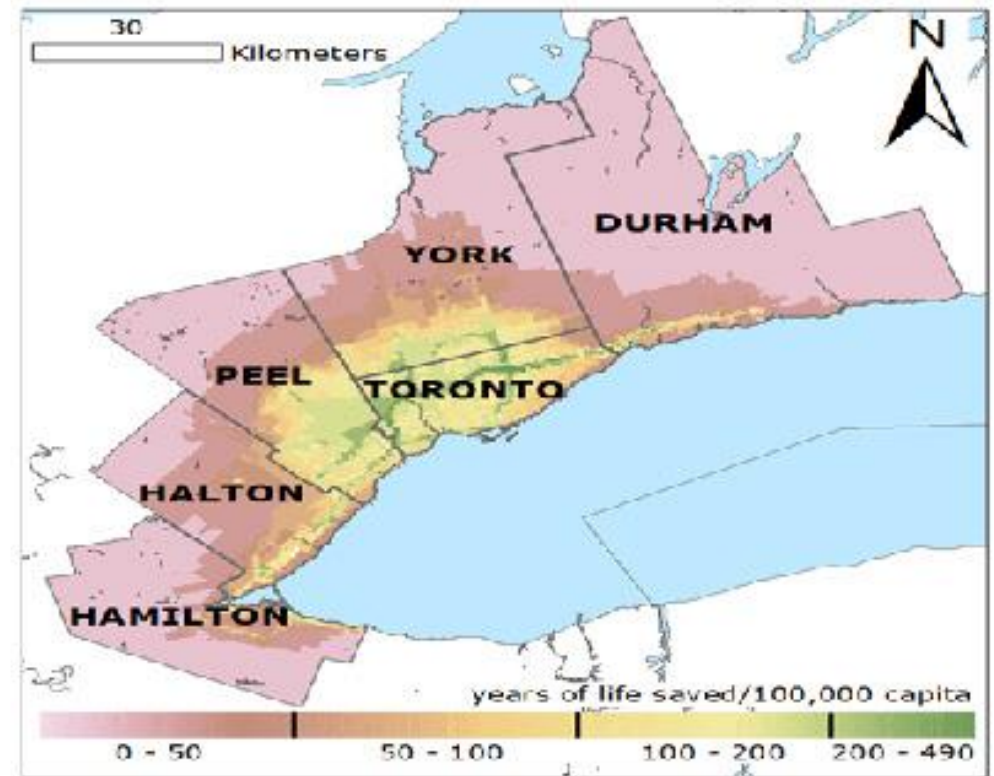


- No addressing climate change without addressing transportation emissions
- EVs are definitely part of the solution but not a silver bullet
- Need to address land use, transportation options, moving people instead of vehicles
- Addressing equity issues across land use and how much investments for different transportation options.





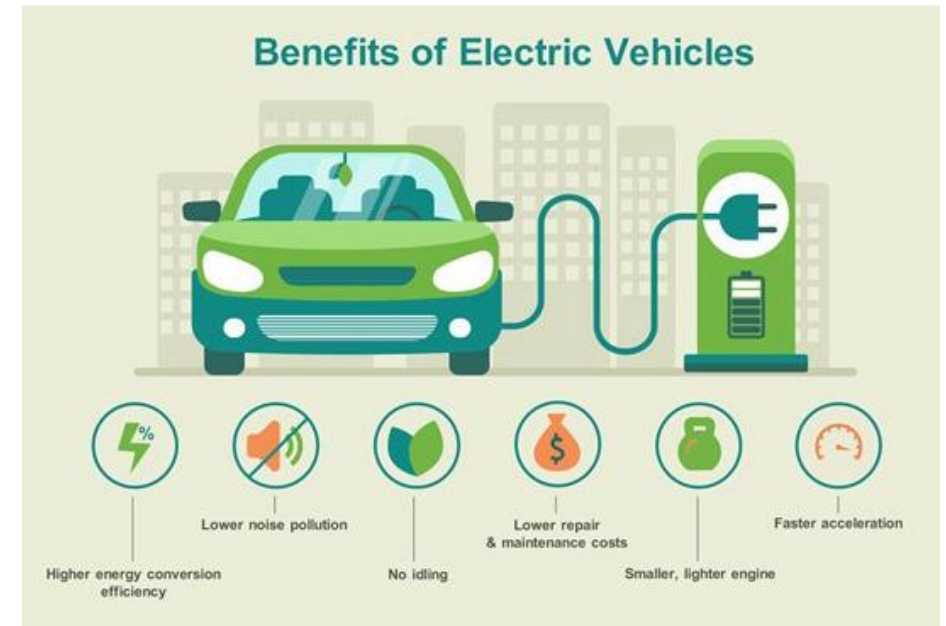
- Environmental Defense's [Clearing the Air](#) report: air quality improvements could prevent hundreds of premature deaths every year
- Lead to billions of dollars in social benefits, including about \$10,000 in social benefits for every gas powered car replaced with an EV.
- Health care spending accounting for 37.5% of Ontario's total 2021 budget



# Economic Value of EVs in Ontario



- The fuel cost to charge an EV at home in Ontario is equivalent to roughly \$0.20 per litre gasoline
- Maintenance costs of EVs are about half that of gasoline vehicles.
- Very strong business case over life of vehicle
- When price parity is achieved the market will change quickly
- Price parity expected mid 2020's
- In 2019, the auto sector contributed 16% of Ontario's manufacturing GDP (equivalent to 1.9% of Ontario's total GDP).
- It employs approximately 100,000 Ontarians and generates spin off jobs across Ontario.

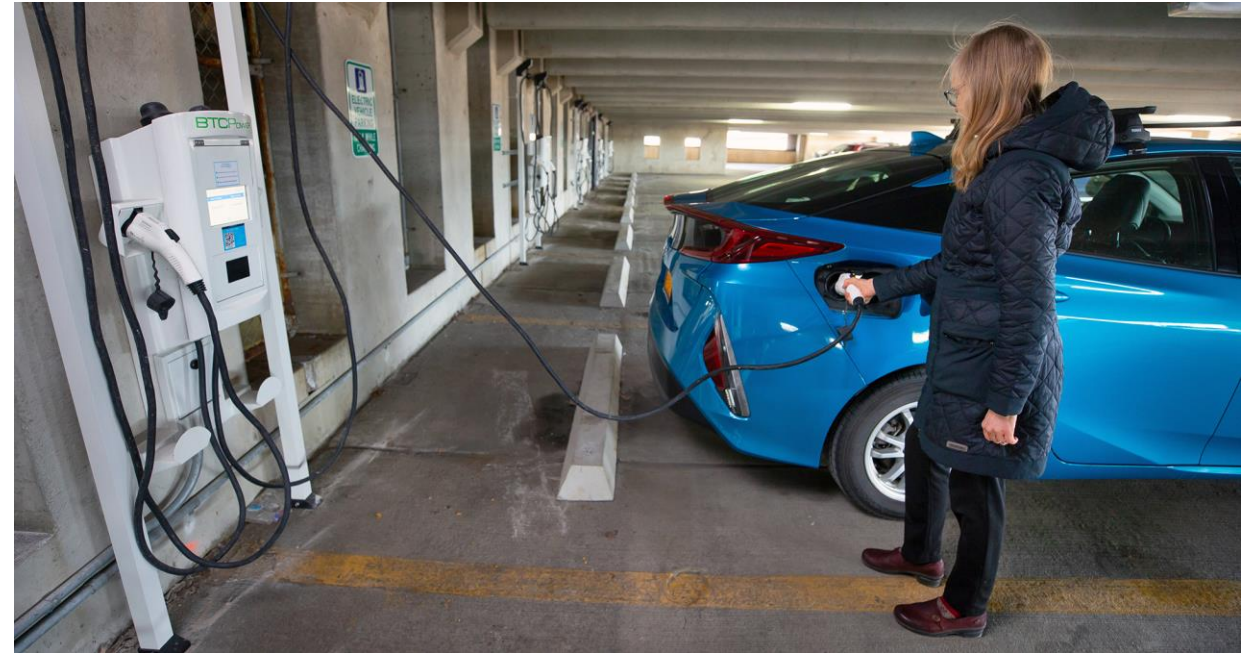




# Rationale for Resistance to OBC EV Ready Requirements



- Did not include energy sharing
- Increased electricity allocations costs
- Resulted in Ontario falling behind other jurisdictions in EV uptake and readiness (EV incentive removal also didn't help)
- Utility infrastructure deposit system (Capital Cost Recovery process)





- Energy sharing helps address electricity allocations costs
- Degree of sharing that works for EV drivers as well as reducing electricity allocations costs as much as possible.
- Energy sharing should be a core design consideration

Circuit Breaker Size	Maximum number of EVs (by mean daily weekday VKT)					
	45km or less	50km	55km	60km	65km	70km
20A	1					
30A	2	2	1	1	1	1
40A	4	3	3	2	2	2
50A	5	4	4	3	3	2
60A	6	5	5	4	4	3
70A	8	7	6	5	5	4
80A	10	8	7	6	6	5
100A	12	10	9	8	7	7
125A	15	14	12	11	10	9

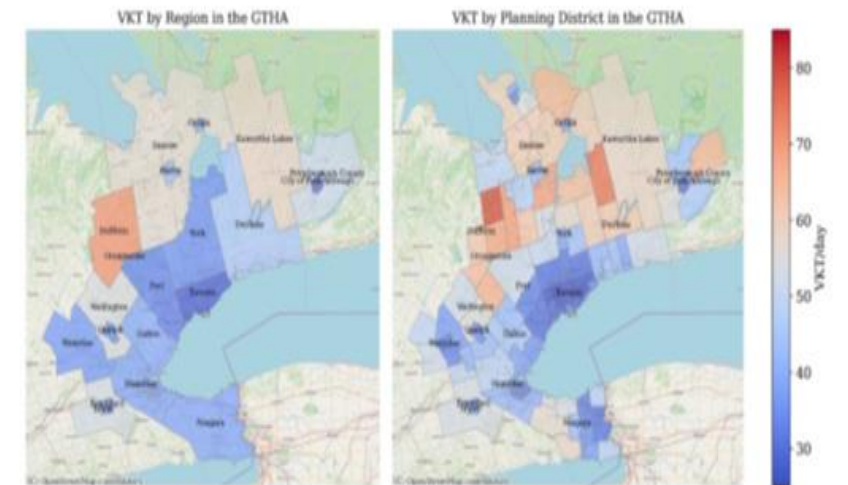


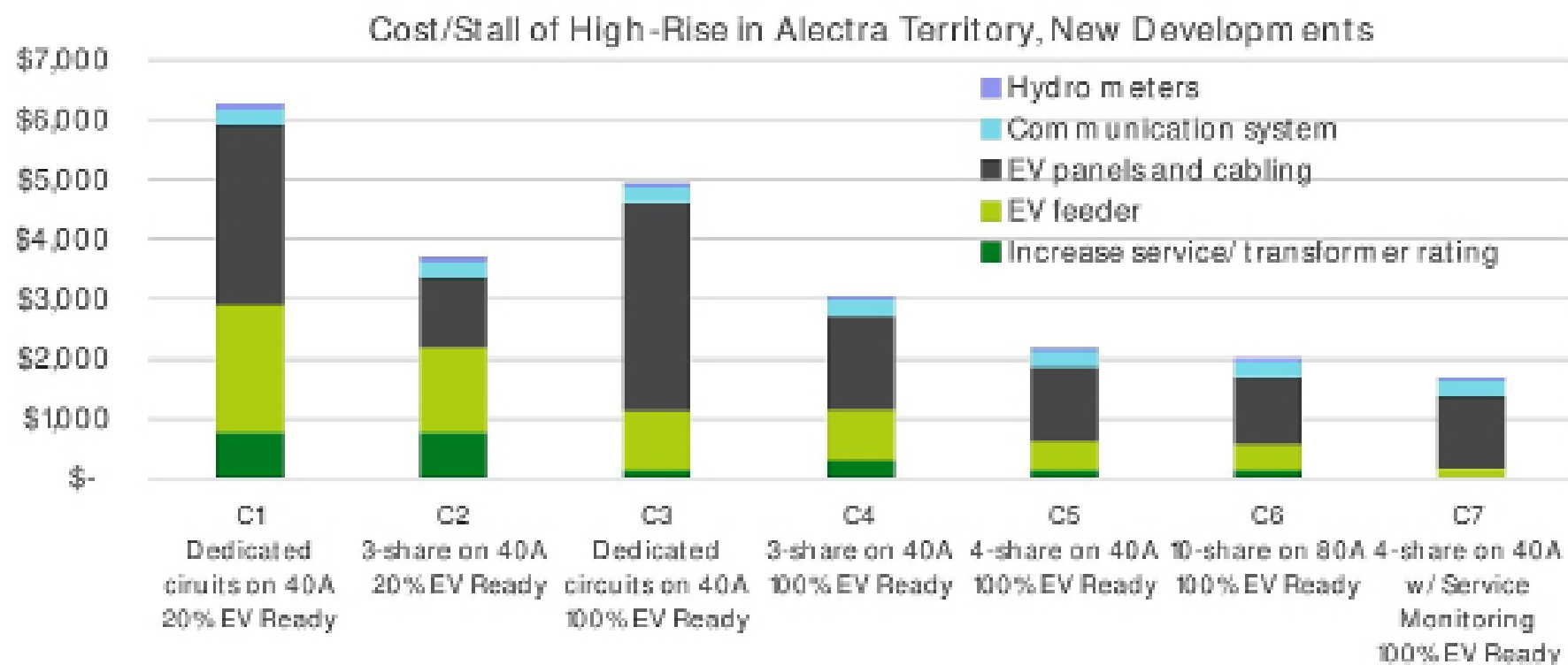
Figure 5: VKT by Region and Planning District in the GTHA. Data from Transportation for Tomorrow Survey.

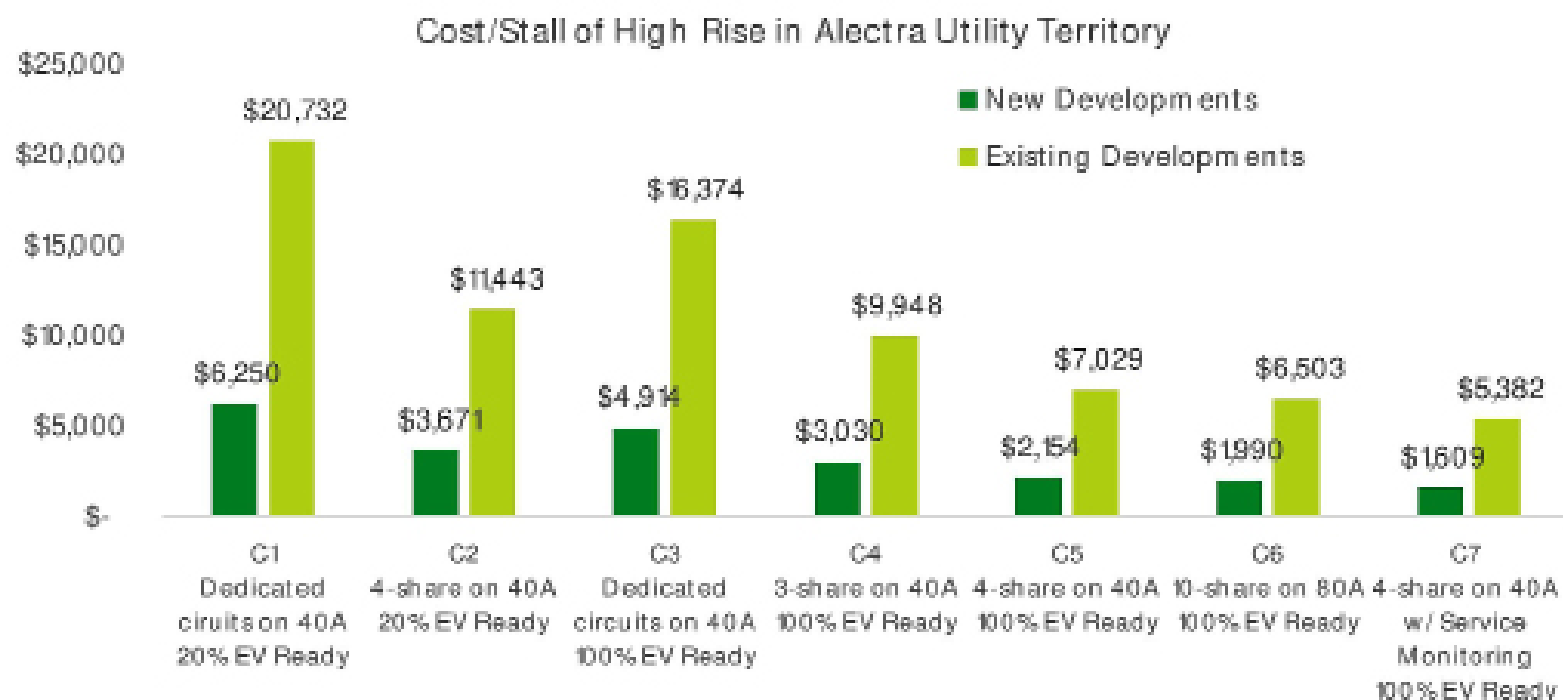


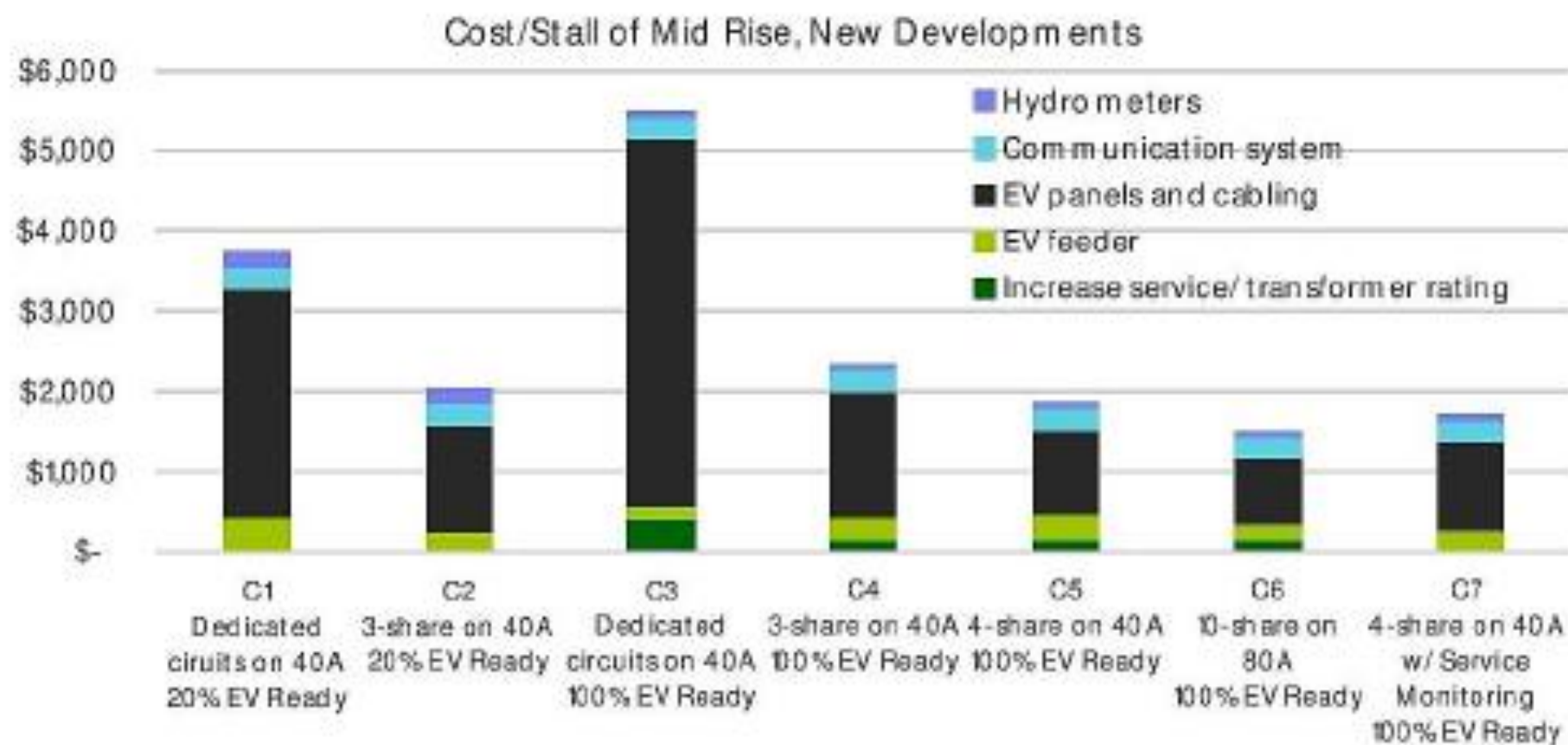


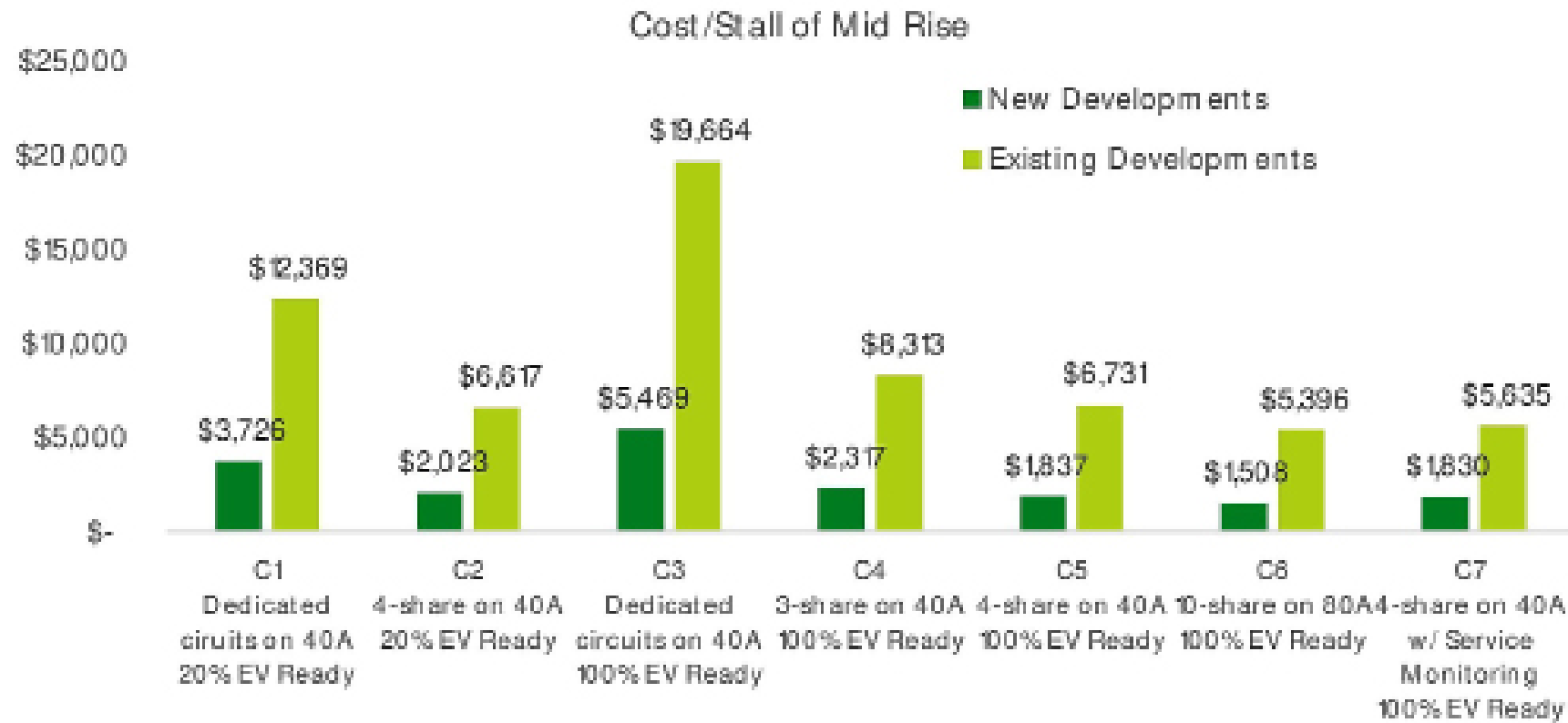
- Developers were wondering what the commercial EV charging market will look like? Do we really need EV charging at home was the question. Or will the commercial EV charging meet that need?
- Being able to charge a vehicle at home critical for present EV uptake
- It will be the most cost effective and convenient option for EV drivers
- Commercial EV charging will grow in market but there will still be a demand for EV charging at home



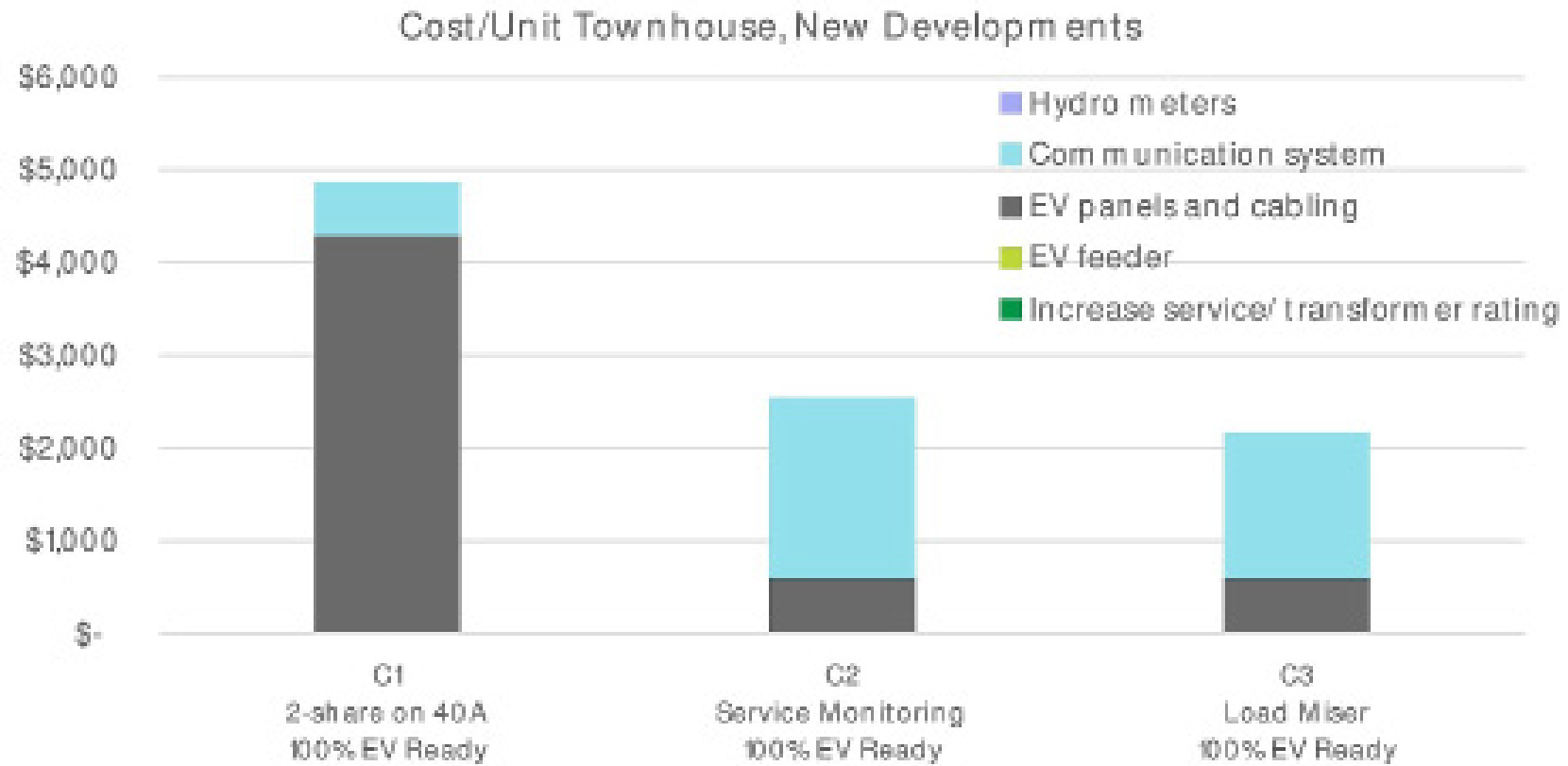


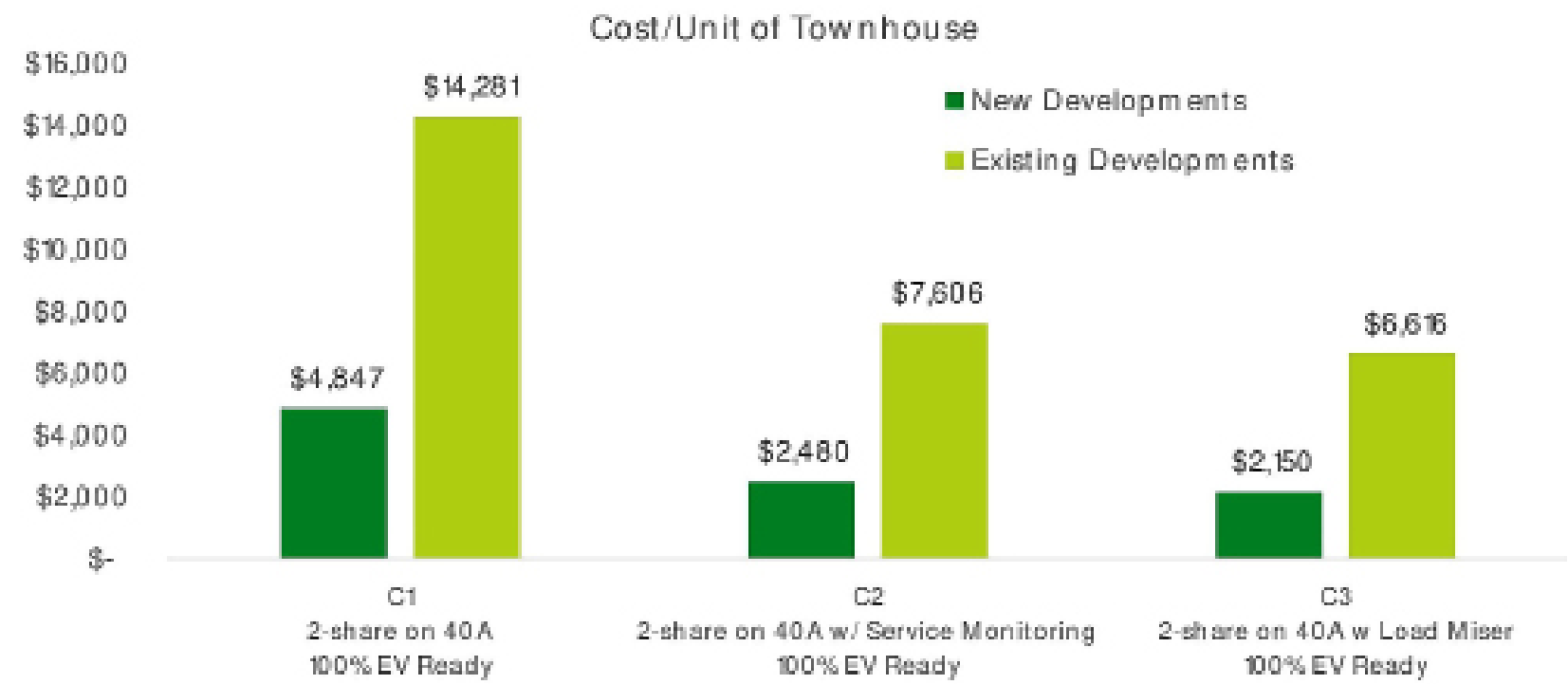


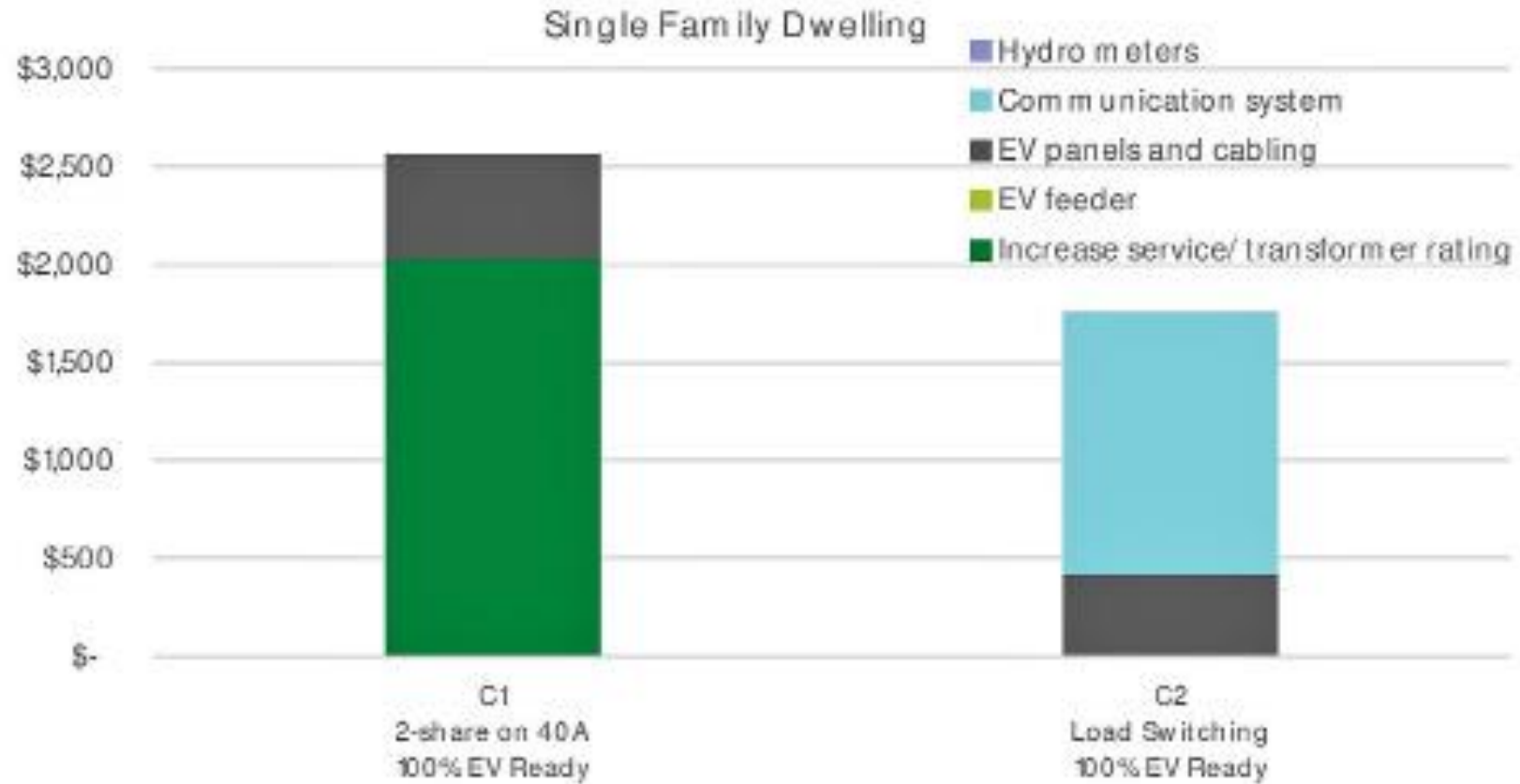














- Planning Act and Site Plan Authorities – Via Green Standards
- Parking Requirements via Zoning By-laws
- Climate Change By-law Authorities
- EV Ready Requirements and the Ontario Building Code



# Recommendations for Advancing EV Ready Requirements



- Electricity allocation and utility deposits
- Time frame for deposit system may not align with EV uptake
- Electricity allocation not specifically about EV charging
- Deposit system is directed by OEB not utilities







- No one want to increase peak electricity needs if we don't have to
- Load management plays a critical role here and is an option where EV requirements may impact deposit system
- Extend the deposit system to 10 years
- Remove the EV ready requirements from deposit system
- Use load management



# EV Ready Requirements and Parking Minimums – What's the Connection?



- A lot of value in bringing discussions regarding EV ready requirements and parking minimums together
- There is apparently overbuilding of parking spots taking place in certain areas (especially for developments in TOD locations)





- Most cost effective time to achieve EV readiness is at time of construction
- All stakeholders acknowledged that
- High costs of parking stalls (regardless of EV ready or not)
- Different archetypes face different issues re retrofitting with MURB and Townhomes w communal parking spots being the biggest issue
- Those in those archetypes will face a very difficult and expensive retrofits

**Pay Now  
or  
Pay More Later**





- Opportunity to improve consistency regarding EV Ready requirements in Ontario
- Scan of existing EV ready requirements in Guide







MUNICIPALITY	METRICS/ REQUIREMENTS	NOTES
AJAX	Going to Council in early 2022 with Ajax Green Standard: Tier 1 calls for 50% of dwelling units to have EV chargers or are EV ready. T2 is 75%.	
AURORA	No EV Ready Metrics/Requirements	
BRAMPTON	Will be going to Council in mid 2022 with update to Sustainability Metrics. Aiming to include EV ready requirements in update.	
BURLINGTON	Electric Vehicles: A voluntary metric of a minimum of 3% of parking spaces provide charging stations to accommodate electric vehicles and design additional areas to be EV conversion ready.	<a href="https://www.burlington.ca/uploads/92/">https://www.burlington.ca/uploads/92/</a>
CALEDON	No EV Ready requirements at present. In the process of developing Green Standards	
CLARINGTON	An EV Plan has been developed for the Municipality of Clarington and was approved by Council in early 2022. Development of Green Standards is planned. Timeframe for green standards not finalized.	<a href="#">Clarington EV Plan</a>





MUNICIPALITY	METRICS/ REQUIREMENTS	NOTES
HALTON HILLS	Added in EV to Green Standards: Provide 5% of parking spaces or a minimum of 1 space with plug-ins for electric vehicles.	<a href="https://www.haltonhills.ca/en/your-government/resources/Documents/Green-Development-Standards-Checklist.pdf">https://www.haltonhills.ca/en/your-government/resources/Documents/Green-Development-Standards-Checklist.pdf</a>  Green Standard as the mechanism to advance EV Readiness
KING	Menu Approach Green Standard in place: Minimum target: if parking in provided on-site, a minimum of 25% of parking spaces have the infrastructure for electric vehicle charging conduits.	<a href="#">King Green Standards</a>  Green Standard as the mechanism to advance EV Readiness
KITCHENER	Using Zoning By-law 2019-051 to secure 20% (non-residential is 17.5%) of parking spaces required for multiple dwellings shall be designed to permit the future installation of electric vehicle supply equipment	Page 26 of <a href="https://cleanairpartnership.org/cac/wp-content/uploads/2022/02/Kitchener-ZBL-Section-5-Parking-Regulations.pdf">https://cleanairpartnership.org/cac/wp-content/uploads/2022/02/Kitchener-ZBL-Section-5-Parking-Regulations.pdf</a>  Using Zoning Authorities to secure EV Ready requirements
MARKHAM	No EV Ready requirements at present. No EV ready metric in Sustainability Metrics.	



MUNICIPALITY	METRICS/ REQUIREMENTS	NOTES
MISSISSAUGA	No EV Ready requirements at present. In the process of developing green standards but looking to bring EV ready requirements into parking by-law.	
NEWMARKET	No EV Ready requirements at present	
OAKVILLE	No EV Ready requirements at present	
PICKERING	Pickering in the process of developing their green standard. Aiming to have EV ready metric in green standard.	
RICHMOND HILL	No EV ready requirements at present.	



MUNICIPALITY	METRICS/ REQUIREMENTS	NOTES
TORONTO	<p>Ev Ready Requirements Were Previously In The Tgsv3: Aq 1.3 Electric Vehicle Infrastructure Design The Building To Provide 20 Per Cent Of The Parking Spaces With Electric Vehicle Supply Equipment (Evse). The Remaining Parking Spaces Must Be Designed To Permit Future Evse Installation (Conduit). T2 Of V3 Was 25%. In Mid 2021 The Tgsv4 Approved An Increase To 25% Ev Ready For Tier 1.</p> <p>Toronto In Late 2021 Moved To Using Zoning By-Law Authorities. City Council Directed The Chief Planner And Executive Director, City Planning To Revise The Performance Measures For Electric Vehicle Requirements In The Toronto Green Standard Version 4 In Accordance With The Revised Zoning By-Law. Toronto Is Planning On Moving Towards 100% Ev Ready As The New Ev Ready Requirement As Was Identified In The Ev Strategy. The Ev Ready Requirements Were Advanced While Toronto Was Also Reviewing Minimum Parking Requirements.</p>	<p><a href="#">Toronto Council Report: Recommended Parking Requirements for New Development</a></p> <p><a href="#">EV Ready Requirements in Toronto Green Standard</a></p> <p><a href="#">Toronto Electric Vehicle Strategy</a></p> <p>Toronto was previously using the Toronto Green Standard to secure EV Ready requirements but are in the process of transferring their EV Ready requirements into their parking by-law authorities</p>
VAUGHAN	No EV Ready Metrics/Requirements	



MUNICIPALITY	METRICS/ REQUIREMENTS	NOTES
WATERLOO	Will be going to Council in mid 2022 with update to Sustainability Metrics. Aiming to include EV ready requirements in update.	<p>Page 151 of <a href="https://www.waterloo.ca/en/government/resources/Documents/Zoning-bylaw/Zoning-Bylaw-2018-050.pdf">https://www.waterloo.ca/en/government/resources/Documents/Zoning-bylaw/Zoning-Bylaw-2018-050.pdf</a></p> <p>Using Zoning Authorities to secure EV Ready requirements Amendment: <a href="https://www.waterloo.ca/en/government/resources/Documents/Zoning-bylaw/General-amendments/2020-061-to-modify-regulations-pertaining-to-electric-vehicle-parking.pdf">https://www.waterloo.ca/en/government/resources/Documents/Zoning-bylaw/General-amendments/2020-061-to-modify-regulations-pertaining-to-electric-vehicle-parking.pdf</a></p>
WHITBY	<p>Using Whitby Green Standard to advance EV readiness of new builds. No mandatory requirements in Tier 1 of WGS. Tier 2 is: At least 20% of parking spaces are equipped with electric vehicle charging stations. Tier 3: At least 20% of parking spaces are equipped with electric vehicle charging stations. All remaining spaces are designed to enable future charging station installation. Tier 4:</p> <p>At least 30% of parking spaces are equipped with electric vehicle charging stations. All remaining spaces are designed to enable future charging station installation.</p>	<p><a href="https://www.whitby.ca/en/work/whitby-green-standard.aspx">https://www.whitby.ca/en/work/whitby-green-standard.aspx</a></p> <p>Whitby has used their Green Standard as the mechanism to advance EV Readiness</p>



JURISDICTION	RESIDENTIAL	COMMERCIAL
City of Toronto, ON	100% EV Ready	25% EV Ready
Province of Quebec	100% EV Ready (single family)	
Ville de Laval, QC	50% EV Ready	
City of Vancouver, BC	100% EV Ready	45% EV Ready
City of North Van, BC	100% EV Ready	45% EV Ready
City of Port Moody, BC	100% EV Ready	20% EV Ready
City of Surrey, BC	100% EV Ready	20% EV Ready
District of North Van, BC	100% EV Ready	20% EV Ready
District of Saanich, BC	100% EV Ready	Varies, ~5% EV Ready
City of Victoria, BC	100% EV Ready	5% EV Ready
Town of View Royal, BC	100% EV Ready	~5% EV Ready
City of Richmond, BC	100% EV Ready	
City of Burnaby, BC	100% EV Ready	
City of New West, BC	100% EV Ready	
District of Squamish, BC	100% EV Ready	
City of Coquitlam, BC	1 EV Ready / dwelling	
District of West Van., BC	100% EV Ready	
Township of Langley, BC	1 EV Ready / dwelling	
City of Nelson, BC	1 EV Ready / dwelling	10% EV Ready