

Electric Vehicle Strategy Workshop

Plug'n Drive Discovery Centre Nov 8th , 2019

Thanks to the Brigham Foundation for their generous support of this project.



Objectives

1. **Share Results from EV Action Prioritization (survey results)**
2. **Gather additional feedback on survey results**
3. **Identify potential opportunities and barriers and key considerations for implementation of high priority actions**
4. **Gather input of draft action list/workplans**
5. **Gather input on how people think collaboration could best serve to advance your/our EV workplan and community support for Municipal EV Strategies**

Workshop Agenda


Time	Item
10:00	Welcome/Introductions/Review of Agenda/Workshop Goals
10:20	Gabriella Kalapos, CAP: Summary Results from EV Action Prioritization Survey
10:50	Desi Stefanova, CAP: EV Resource Hub Walkthrough
11:10	Ian Graham, Waterloo Region Electric Vehicle Association: Differentiating between EV Perceptions and Facts and the Potential of Community EV Owner Networks
11:40	Amy Yates and Adam Vaiya: Peel Region EV Strategy Update and Green Fleets Working Group Activities & Workplan
12:00	Nathaniel Magder, Peel Region's ZEV Strategy
12:20	Lunch
1:00	Group Discussions on EV Charging Infrastructure Activities & Workplan
1:30	Group Discussion on Education, Awareness Building and Advocacy Activities & Workplan
2:00	Group Discussions on Regional EV Activities & Workplan
2:30	Workshop Wrap Up & Next Steps





























Actions build upon Amazing Work from NRCan, Pollution Probe, BC & Quebec Municipalities, Dunsky's work on Toronto EV Strategy, and Peel Region's EV Fleet Efforts

Municipal Zero Emission LDV Matrix of Actions

Fueling & Charging Infrastructure	Education & Awareness	Incentives	Complementary Mechanisms
Public charging network partnerships (including inter-municipal) M C U A D I R P C S	Public education programs and campaigns M C U A C S	Vehicle and/or charger voucher or rebate M C U D I	Advocate for changes to provincial/federal regulations: MURBs M C U P C S
Public charging stations and charging hubs including on-street parking M U I	Curriculum at local schools, colleges, and universities M C S	E-bike/scooter voucher or rebate M C A	Advocate for changes to provincial/federal regulations: other regulatory barriers M C
Charging at municipally owned facilities M U I	Information at charging points M C I C S	Vehicle scrappage incentives M C D C S	Amend or introduce local bylaws to address barriers (e.g., anti-ICEing bylaw) M C
Seek external infrastructure funding opportunities M C U	Promotion at workplaces, Workplace Charging Challenge M P C S	Multi-unit residential building retrofit and load management incentives M C P	Explore adding ZEV infrastructure to Community Amenity Contributions M R
ZEV-ready new single-family homes M C U I R	Address knowledge gaps surrounding home charging M U A D I C S	Preferential or free parking M P	Research partnerships, innovation, and field testing M U A C S
ZEV-ready new commercial and institutional buildings M C U I R P	Provide information on city website (including charging/fueling infrastructure locations; total cost of ownership calculator) M	Toll discount M C	Collect data on usage of charging facilities, ZEV purchases, infrastructure availability M U D I
ZEV-ready new multi-unit residential buildings M C U I R P	Create resource connecting EV owners and their experiences to potential adopters M C S	Explore instituting congestion charges for non-ZEVs in priority areas M C S	Seek regulatory clarity on charging for charging M C U I P
Address challenges and barriers to charging for multi-unit residential buildings and garage orphans M C R P C S	Troubleshooting assistance for homeowners and building managers (especially regarding charging infrastructure) M U I	Carpool lane access (HOV/ HOT lane) M C	Analyze data to enhance the availability of charging where most needed M U C S






Category 1: Charging Availability (1 of 3)



Levers	Actions	Barriers Addressed	Impact
Home (Single Family) Charging	Financial Incentives (rebates, tax incentives) to support EVSE installation	  	HIGH
	Maintain building code requirement of EV ready / capable new construction*	 	HIGH
	Develop policies to support EVSE in existing buildings*	 	MED
	Incorporate EVSE into development permits evaluation criteria*	 	MED
	Provide financing option for EVSE installation (e.g. integrate into HELP)	  	MED
Home (MURB) Charging	Financial Incentives (rebates, tax incentives) to support EVSE installation	  	HIGH
	Amend building codes requiring a proportion of parking be EV ready / capable*	 	HIGH
	Establish building retrofit threshold that triggers EVSE requirement*	 	MED
	Pilot program for car-sharing in existing MURB		LOW
	Maintain existing condominium act standard for "right-to-charge"	 	MED
	Provide financing option for EVSE installation (e.g. integrate into HI-RIS)	  	MED
	Financial Incentives for shared EV chargers in MURBs	  	HIGH

* Policy/programs

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Barriers  Access to EVSE  Cost  Convenience  Information  Industry Capacity

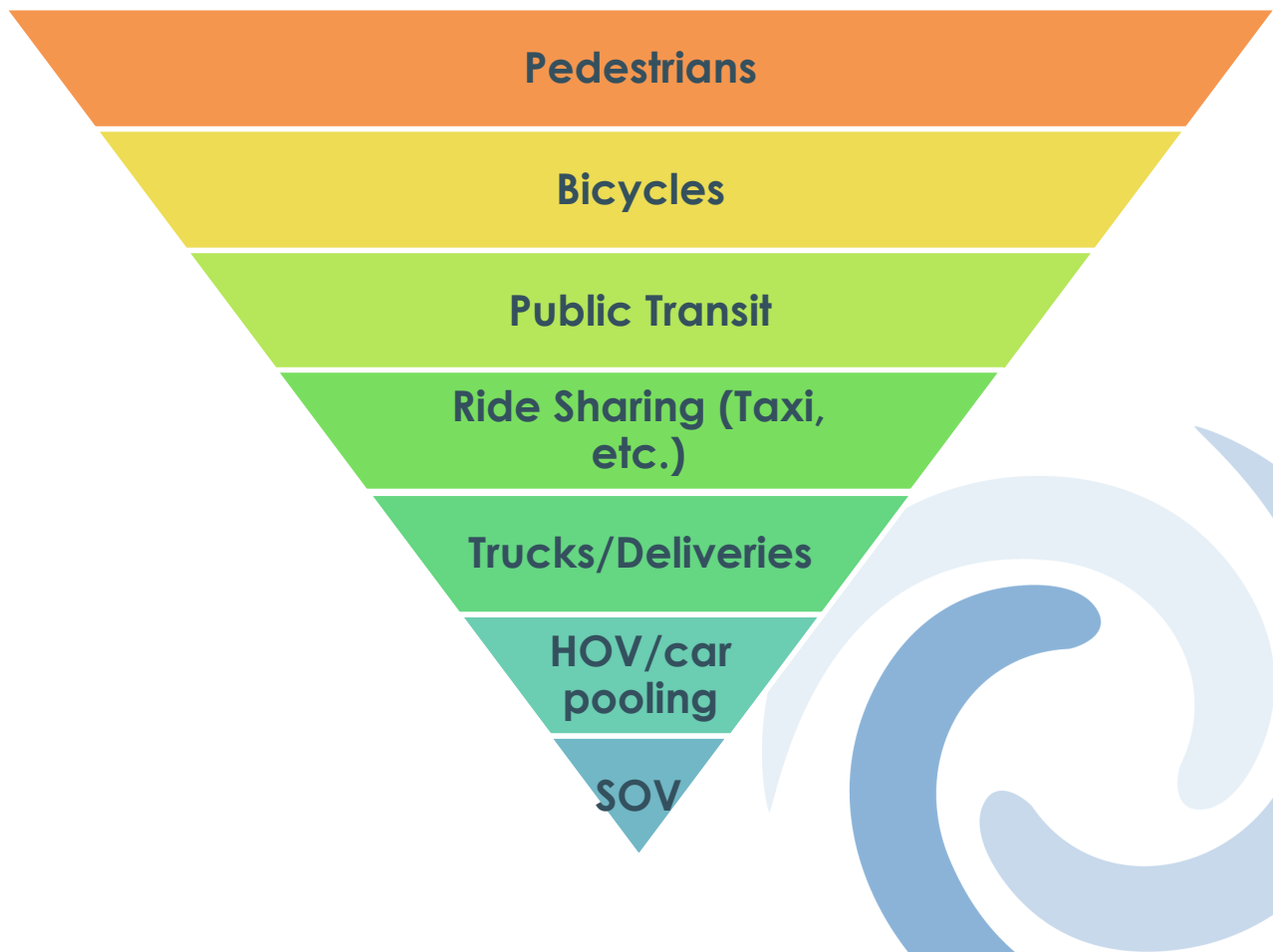
References:

Pollution Probe: [Framework for Municipal ZEV Deployment Report](#)

Dunsky: Toronto EV Strategy

Transportation Hierarchy

**EVs will not solve
our congestion,
transportation
and GHG issues**



EV Strategy Actions Survey Results

- What actions do municipalities see as most relevant for inclusion in their Municipal Electric Vehicle Strategy?
- Is there common actions that seem to be considered most relevant for different community archetypes?



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Total Participants - 17

Rural

North Perth
Clarington
Caledon
King

Suburban

Brampton
Oakville
Oshawa
Whitby

Urban

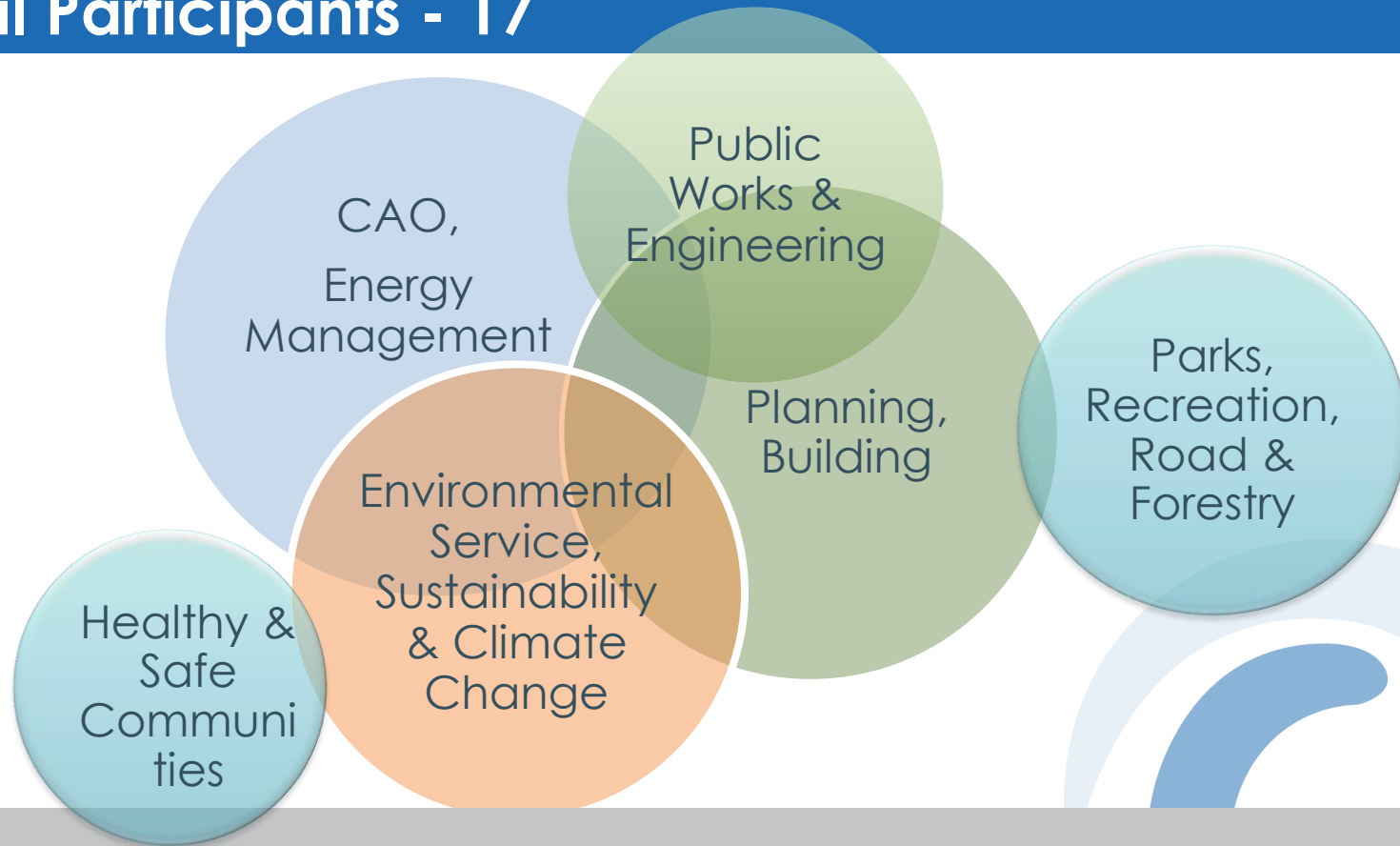
Hamilton
Burlington
Mississauga
Vaughan
Guelph
London

Regions:

Waterloo
Peel
York

Q:How relevant would you rate the below actions based on their applicability to your municipality?

Total Participants - 17



Who answered?

EV CHARGING INFRASTRUCTURE – Total majority responses

Very relevant:

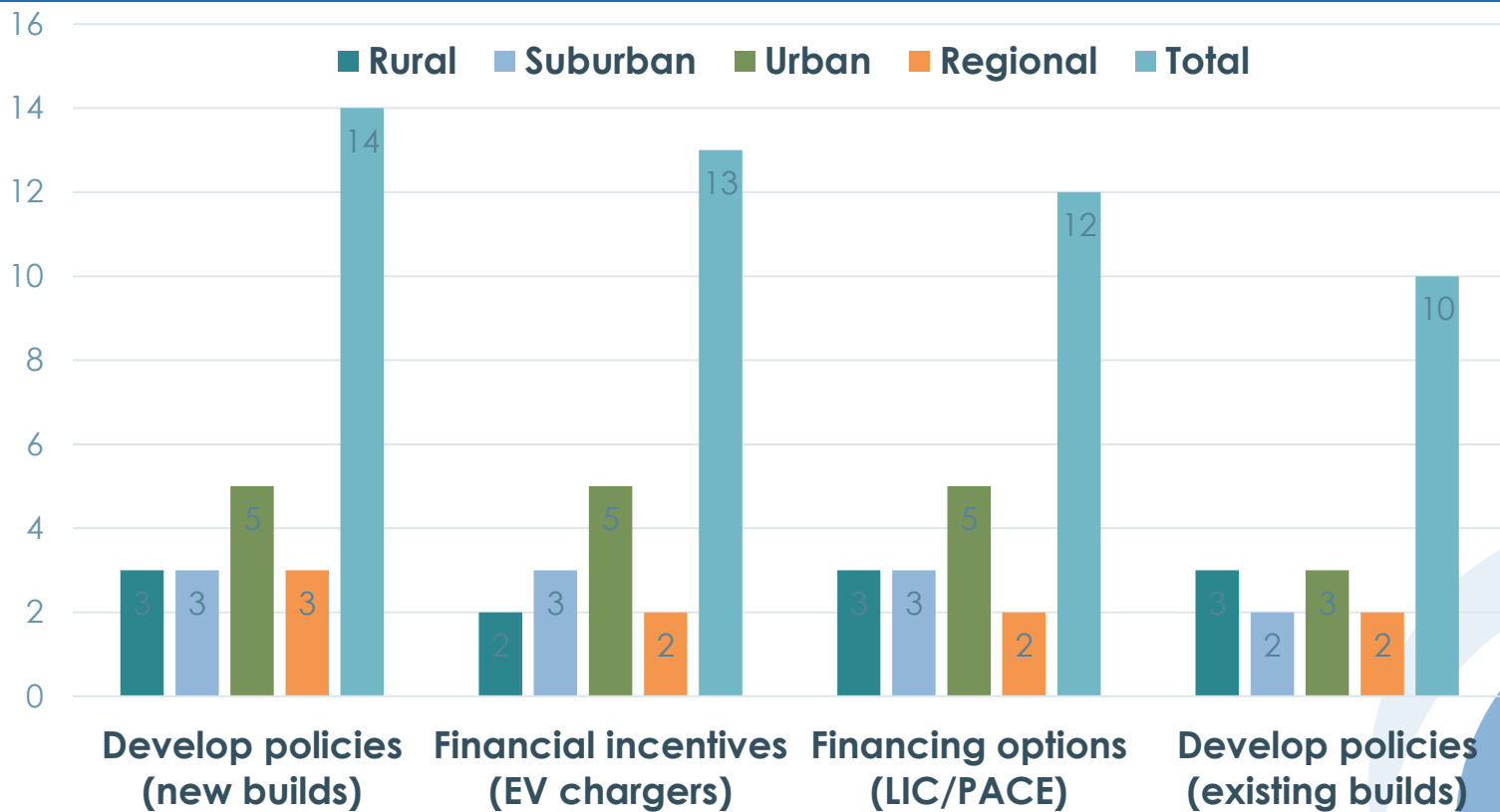
1. Develop policies to support EV charging infrastructure in new buildings (R/C/MURB) - (14/17 municipalities)
2. Explore providing financial incentives to support EV Charging infrastructure installation (R/C/MURB/) - (13/17)
3. Provide financing options/programs for EV charging infrastructure installation. Ex. LIC/PACE - (12/17)

EV CHARGING INFRASTRUCTURE – Total majority responses

Very relevant:

4. Advocate for Building Code EV readiness Requirements (R/C/MURB) – (11/17)
5. Develop policies to support EV charging infrastructure in existing (R/C/MURB) – (10/17)
6. Install City-owned/managed EV charging infrastructure for public use - (9/17)

EV Charging Infrastructure



EV CHARGING INFRASTRUCTURE – **RURAL** majority responses

Not relevant:

1. Explore establishing low or zero-emission vehicle zones
2. Modify regulations for taxis, ride-sharing, car-sharing to increase the use of Evs
3. Reduce/exempt electric vehicles from potential future road tolls/congestion charges

EV CHARGING INFRASTRUCTURE – SUBURBAN/URBAN

Not relevant:

1. Explore establishing low or zero-emission vehicle zones



FLEET SECTION- Total majority responses

Very relevant:

1. Establish targets/develop plans for fleet conversion to EVs - (11/17)
2. Green Revolving Fund for upfront additional capital costs of EVs (paid back via operational savings) – (9/17)

FLEET SECTION- Total majority responses

Somewhat relevant:

1. Work with utility to evaluate electric grid capacity and upgrades needed; ensure access, readiness, and resilience (12/17)
2. Work with others to establish/participate in a bulk purchase of EVs (8/17)
3. Integrate active transportation, EVs into public transit and shared mobility (8/17)

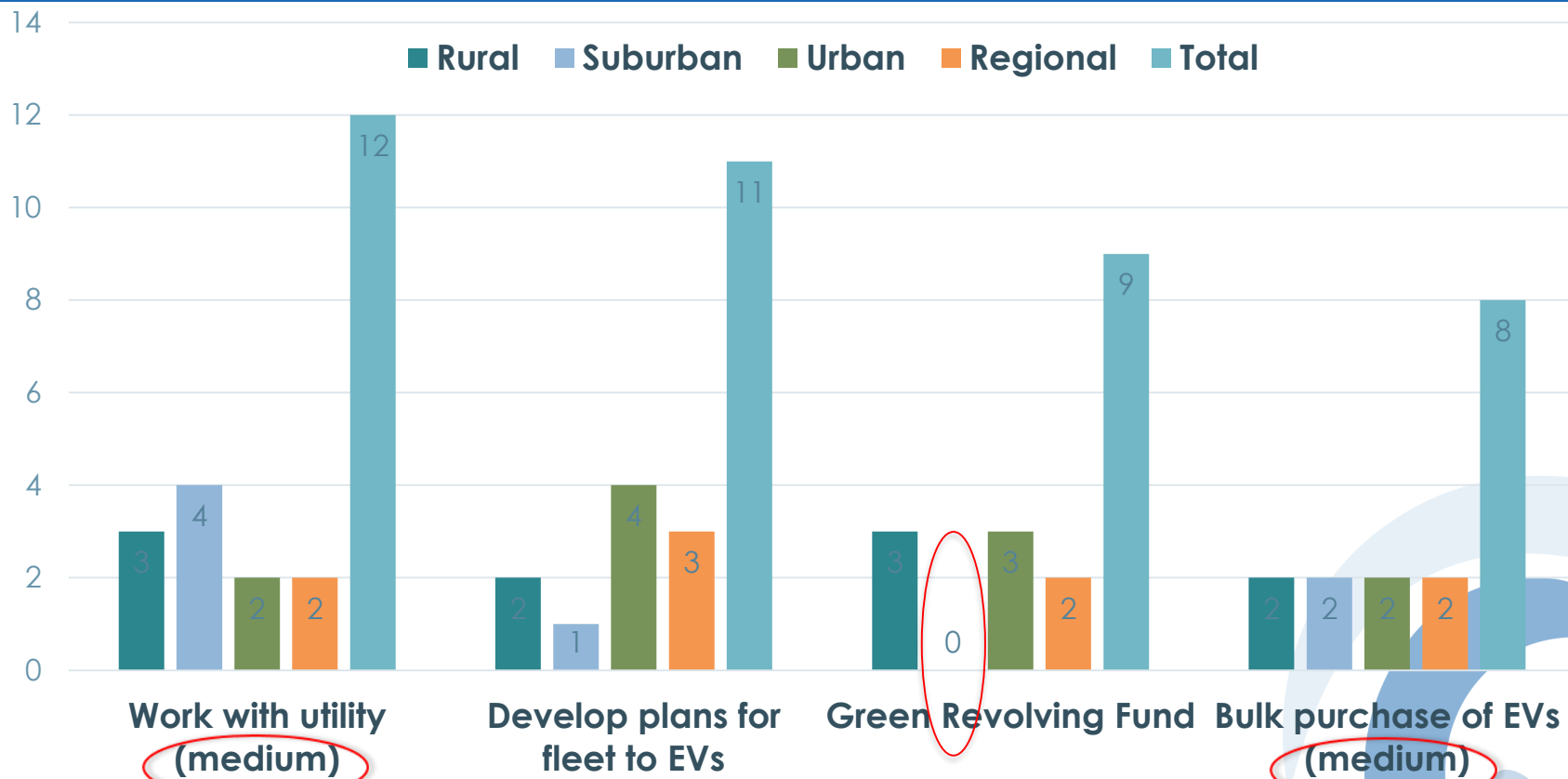
FLEET SECTION- SUBURBAN – majority responses

Medium/Not relevant:

1. Green Revolving Fund for upfront additional capital costs of EVs (paid back via operational savings)



FLEET



EDUCATION, AWARENESS BUILDING, AND ADVOCACY- Total majority responses

Very relevant:

1. Advocate for provincial/federal policies that encourage a transition to EVs – (16/17)
2. Partner with key stakeholders to implement education and outreach to engage the public on EV Uptake – (10/17)

EDUCATION, AWARENESS BUILDING, AND ADVOCACY – Total majority responses

Somewhat relevant:

1. Create/support/participate in an EV Community Champions network – (8/17)
2. Fund/provide strategic guidance/in-kind support for university-based EV research (8/17)

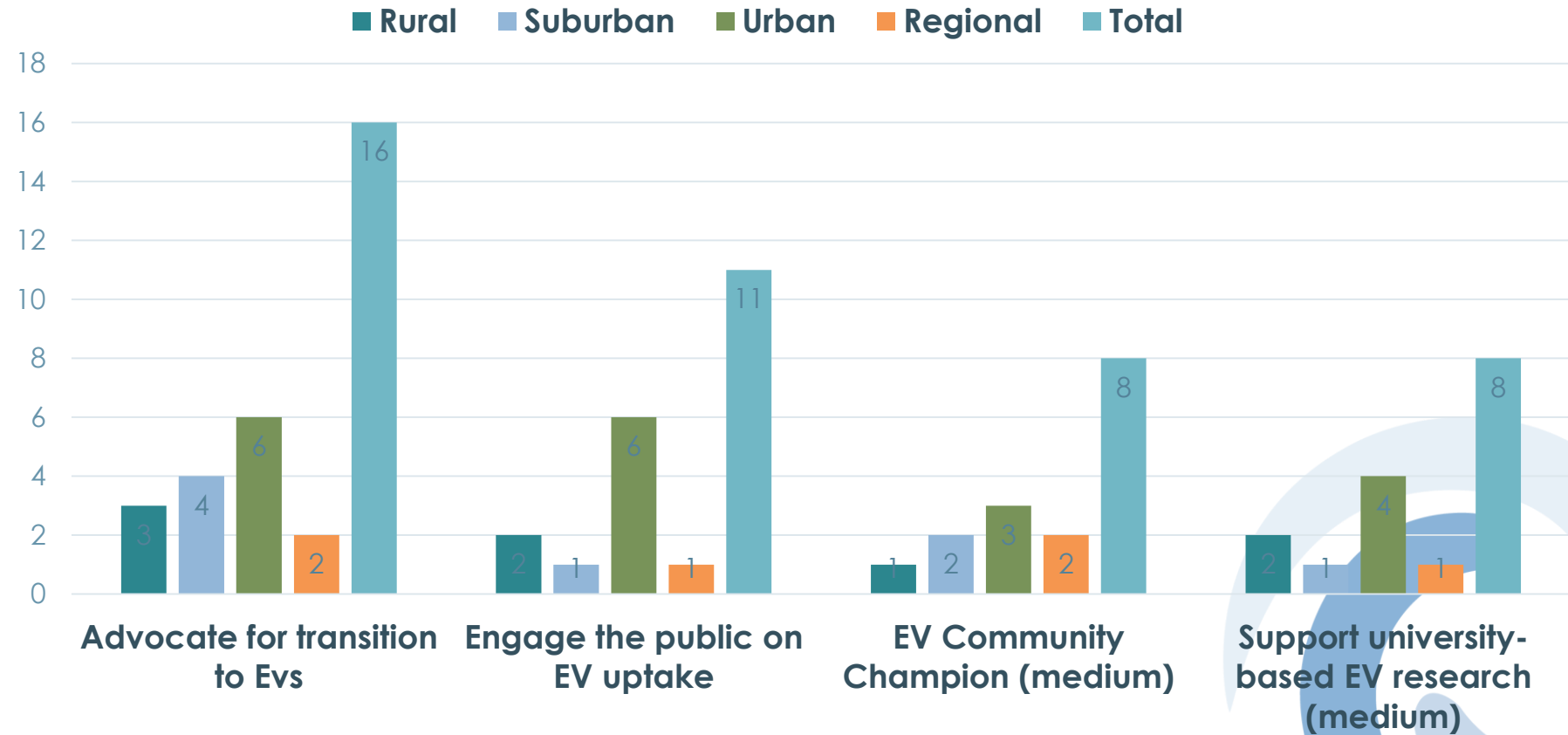
EDUCATION, AWARENESS BUILDING, AND ADVOCACY- **RURAL** – majority responses

Not relevant:

1. Explore systems and processes to avoid waste/support end-of-life vehicle use
2. Develop e-bikes and e-scooter policies



EDUCATION, AWARENESS BUILDING, AND ADVOCACY



REGIONAL SCALE OPPORTUNITIES RELATED TO ELECTRIC VEHICLE – Total majority responses

Very relevant:

1. Advance GHG and health co-benefits of EV uptake and acceleration – (10/17)



REGIONAL SCALE OPPORTUNITIES RELATED TO ELECTRIC VEHICLE – Total majority responses

Very to **Somewhat** relevant:

1. Advance GHG and health co-benefits of EV uptake and acceleration – (10 - 6/17)
2. Work with others to develop and deliver outreach and information materials on EVs (7-10/17)
3. Collaborate with regional partners, universities and other stakeholders (6-11/17)
4. Partner with Economic Department and other stakeholders to attract/support EV-related industries/Businesses – (5-11/17)



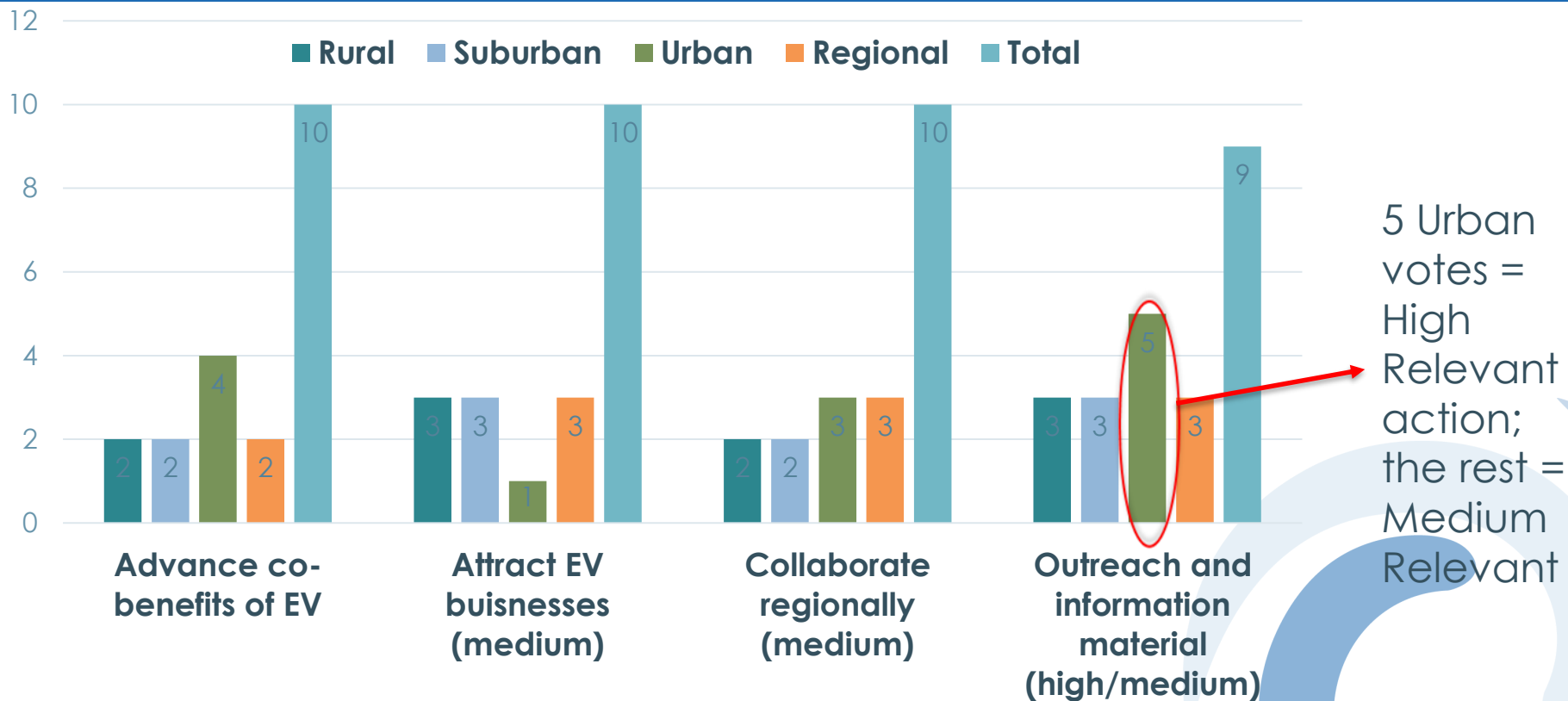
Urban
votes

REGIONAL SCALE OPPORTUNITIES RELATED TO ELECTRIC VEHICLE – URBAN - majority responses

Very relevant:

1. Advance GHG and health co-benefits of EV uptake and acceleration – (4/6)
2. Work with others to develop and deliver outreach and information materials on EVs (5/6)
3. Partner with Economic Department and other stakeholders to attract/support EV-related industries/Businesses (4/6)

Regional scale opportunities for EV



Conclusion from Survey Results

Corporate Leadership

1. **Develop policies to support EV charging infrastructure for new/existing buildings**
2. **Fleet Conversion to EVs**

Advocacy

1. **Building Code EV readiness Requirements**
2. **For provincial /federal policies that encourage a transition to EVs**

Communication & Collaboration

1. **Advance GHG and health co-benefits of EV uptake**
2. **Work with others to develop and deliver outreach and information materials on EVs**

Group Sessions

Identify barriers, actions/tasks, KPIs

1h30min

EV Charging Infrastructure
Education and Advocacy
Regional EV Activities

30min

30min

30min



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Group Session: Identify barriers, opportunities, KPIs

	Action 1	Action 2	Action 3
What are the likely obstacles?			
What are the enabling actions?			
How to measure progress/impact? KPIs			

Group Session: Identify barriers, opportunities, KPIs

Policies to support EV charging infrastructure (New Buildings)

Sub Actions:	<ul style="list-style-type: none">• Requiring EV charging in new homes through Green Development Standard/Parking Requirement (consultation with stakeholders, senior management/council education on value of action; education for home purchasers to ask for the feature in their discussions with sales staff/developers; educating builders, developers and buildings owners/managers about technical options available, others...• Bring together a coalition of stakeholders to advocate for EV incentives with provincial and federal. Collective input to province and feds from municipalities; council recommendations to higher levels of government; others....
Missing sub actions?	
What are the potential obstacles?	
Ways to address obstacles ?	
How to measure progress? KPIs	

Menti go to

- Missing sub actions/questions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

EV CHARGING

Policies to support EV charging infrastructure (Existing Buildings)

Sub Actions:

- Retrofit Code/ Energy
- Right to charge legislation
- Public Charging Infrastructure
- Promoting private charging sharing
- Encouraging partnerships between car companies/dealers and EV charging suppliers to sell EV/charging packages

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles?

How to measure progress? KPIs

Menti

- Missing sub actions/questions?
- What are the potential blockers?
- What are the enable actions?
- How to measure impact? KPIs



Group Session: Identify barriers, opportunities, KPIs

EV CHARGING

Explore providing financial incentives/programs

Sub Actions:

- Develop and incorporate EV eligibility into LIC/PACE
- Utility on-bill repayment/financing, carbon credits, conservation demand management programs
- Develop tax rebates, vehicle registration rebates, HOV
- Adopting Low Emission Zones and Ultra Low Emission Zones/ exemptions for EVs/ Augment incentives with a program to retire older vehicles

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles?

How to measure progress? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

EV CHARGING

Install City-owned/managed EV charging infrastructure for public use

Sub Actions:

- Researching and publicizing high priority areas for EV charging
- Street Charging
- Streamlining regulatory requirements (e.g., create secondary plans for pre-approval instead of zoning by law)

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles?

How to measure progress? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

GREEN FLEET

Establish targets/develop plans for fleet conversion to EVs

Sub Actions:

- Conduct feasibility studies to examine the potential for converting city fleets
- Commitments to city fleet conversion/Green Procurement
- Partnering to create a group purchase program
- Seek external funding (municipality organizations (e.g., FCM), utilities, and others

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles ?

How to measure progress? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

GREEN FLEET

Work with utility to evaluate electric grid capacity and upgrades needed; ensure access, readiness, and resilience

Sub Actions:

- Establish a process with the utility in your jurisdiction for developers to alert the utility when major charging infrastructure projects occur
- Supporting vehicle grid integration (VGI) technologies

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles?

How to measure progress? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

GREEN FLEET

Integrate active transportation, EVs into public transit and shared mobility

Sub Actions:

- Requirements/bylaws on electrification of fleets that transport both freight (e.g., mail & food delivery) and passengers
- Committed to establish a regulatory framework to encourage the deployment of car-share EVs by the private sector (taxis, tour vehicles, etc.)
- Pilot projects on bike-share programs, micro-transit programs, fleet management software solutions for public transit

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles?

How to measure progress? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

GREEN FLEET

Green Revolving Fund for upfront additional capital costs of EVs (paid back via operational savings)

Sub Actions:

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles ?

How to measure progress? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs EDUCATION, AWARENESS BUILDING, AND ADVOCACY-

Advocate for provincial/federal policies that encourage a transition to EVs

Sub Actions:	<ul style="list-style-type: none">• Common voice from CAC members on 3 asks from the province• Organize community engagement and education campaigns on EVs
Missing sub actions?	
What are the potential obstacles?	
Ways to address obstacles?	
How to measure progress? KPIs	

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs EDUCATION, AWARENESS BUILDING, AND ADVOCACY-

Partner with key stakeholders to implement education and outreach to engage the public on EV Uptake

Sub Actions:

- Work with others to develop and deliver outreach and information materials on EVs
- Fund/provide strategic guidance/in-kind support for university-based EV research
- Create/support/participate in an EV Community Champions network

Missing sub actions?

What are the potential obstacles?

Ways to address obstacles?

How to measure impact? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

REGIONAL SCALE OPPORTUNITIES RELATED TO EV

Advance GHG and health co-benefits of EV uptake and acceleration

Sub Actions:

Missing sub actions?

What are the potential blockers?

What are the enable actions?

How to measure impact? KPIs

Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Group Session: Identify barriers, opportunities, KPIs

REGIONAL SCALE OPPORTUNITIES RELATED TO EV

Collaborate with regional partners, universities and other stakeholders

Sub Actions:

Partner with Economic Department and other stakeholders to attract/support EV-related industries/Businesses

Missing sub actions?

What are the potential blockers?

What are the enable actions?

How to measure impact? KPIs



Menti

- Missing sub actions?
- What are the potential obstacles ?
- Ways to address obstacles?
- How to measure progress? KPIs



Thank you!

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