Electric Vehicle Initiatives
City of Vancouver

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OUTLINE

1

Vancouver's goals & policy framework

2

A little history

3

The EV Ecosystem Strategy – Why & What

4

EV Fleet Strategy

Vancouver adopted the Renewable City Strategy in 2015.

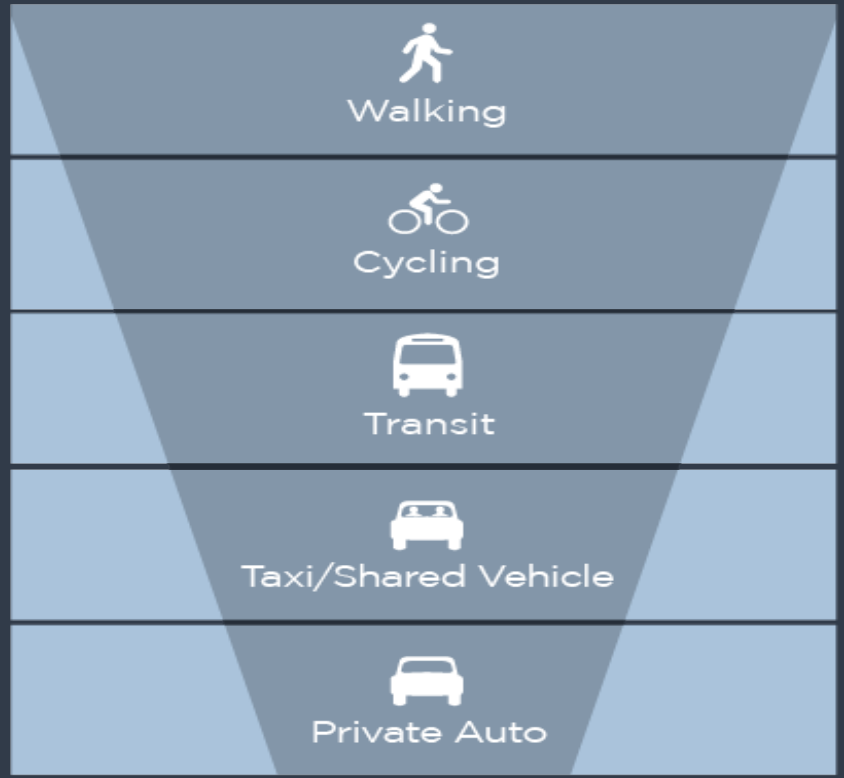
TARGETS

	2020	2030	2050
renewable energy		-55%	100%
carbon pollution	-33%	-50%	-80%

VANCOUVER POLICY CONTEXT

» Renewable City Strategy
» Greenest City Action Plan
» Transportation 2040
» Healthy City Strategy

EV Ecosystem Strategy supports these areas



EV Policy History in Vancouver & Metro Vancouver

City of Vancouver

- First EV policy in 2009: new home requirements
- Public charging deployments began 2012
- 2016 EV Ecosystem Strategy

BARRIERS TO EV ADOPTION IN VANCOUVER

Lack of home charging access

Current network does not meet user needs

Range < peak driving need

Business risk

Lack of vehicles

Use is on the rise.

17,000+
charging sessions at 16 key locations in 2016

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Use is on the rise.

35,000+
charging sessions at those same locations in 2017

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THE CITY'S ROLE IN SUPPORTING ZEVs

Equity

Market support

Land-use and building policies

Coordination with other jurisdictions

THE EV ECOSYSTEM

Charging needs by neighbourhood and building use

Integrated and adaptable; Part of City planning process;

CITY OF VANCOUVER | GREENEST CITY

THE EV ECOSYSTEM

Expand access to home and workplace charging

Improve the public charging network

Integrate EV infrastructure planning into core City processes

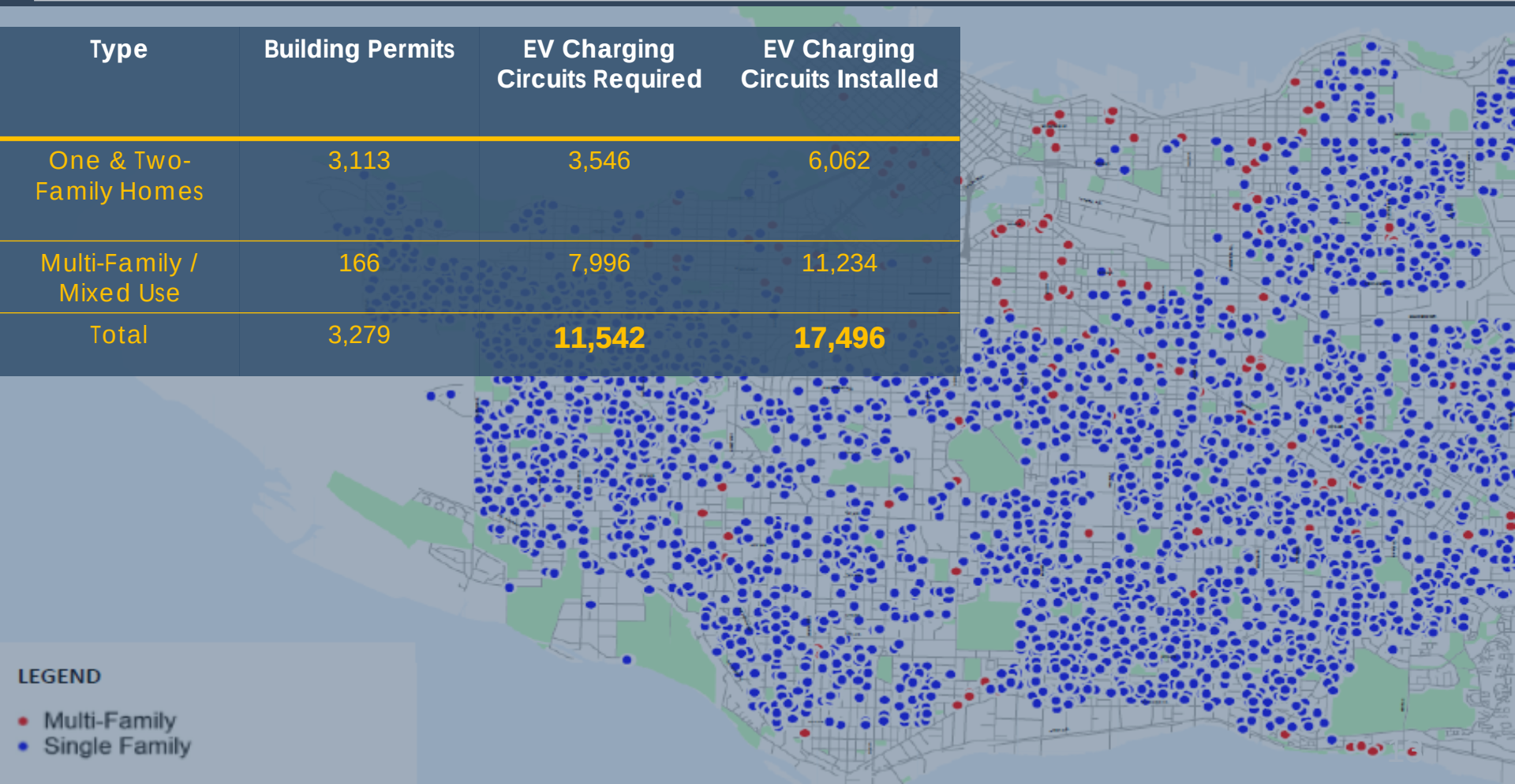
RESIDENTIAL CHARGING CONSTRUCTION 2014+

2011-2018 NEW BUILDING REQUIREMENTS FOR EV-READINESS

One-/Two-family homes	Each garage/carport
MURBs	20% of parking stalls
Commercial buildings (c.2013)	10% of parking stalls

RESIDENTIAL CHARGING CONSTRUCTION 2014+

Type	Building Permits	EV Charging Circuits Required	EV Charging Circuits Installed
One & Two-Family Homes	3,113	3,546	6,062
Multi-Family / Mixed Use	166	7,996	11,234
Total	3,279	**11,542**	**17,496**



LIMITATIONS OF CURRENT MURB REQUIREMENTS

No guarantee of access

Buildings will not meet future EV demand

Retrofit approvals difficult

Costs penalize later adopters

SUMMARY OF UPDATES

1

Require 100% EV-ready parking in new multi-unit residential buildings

2

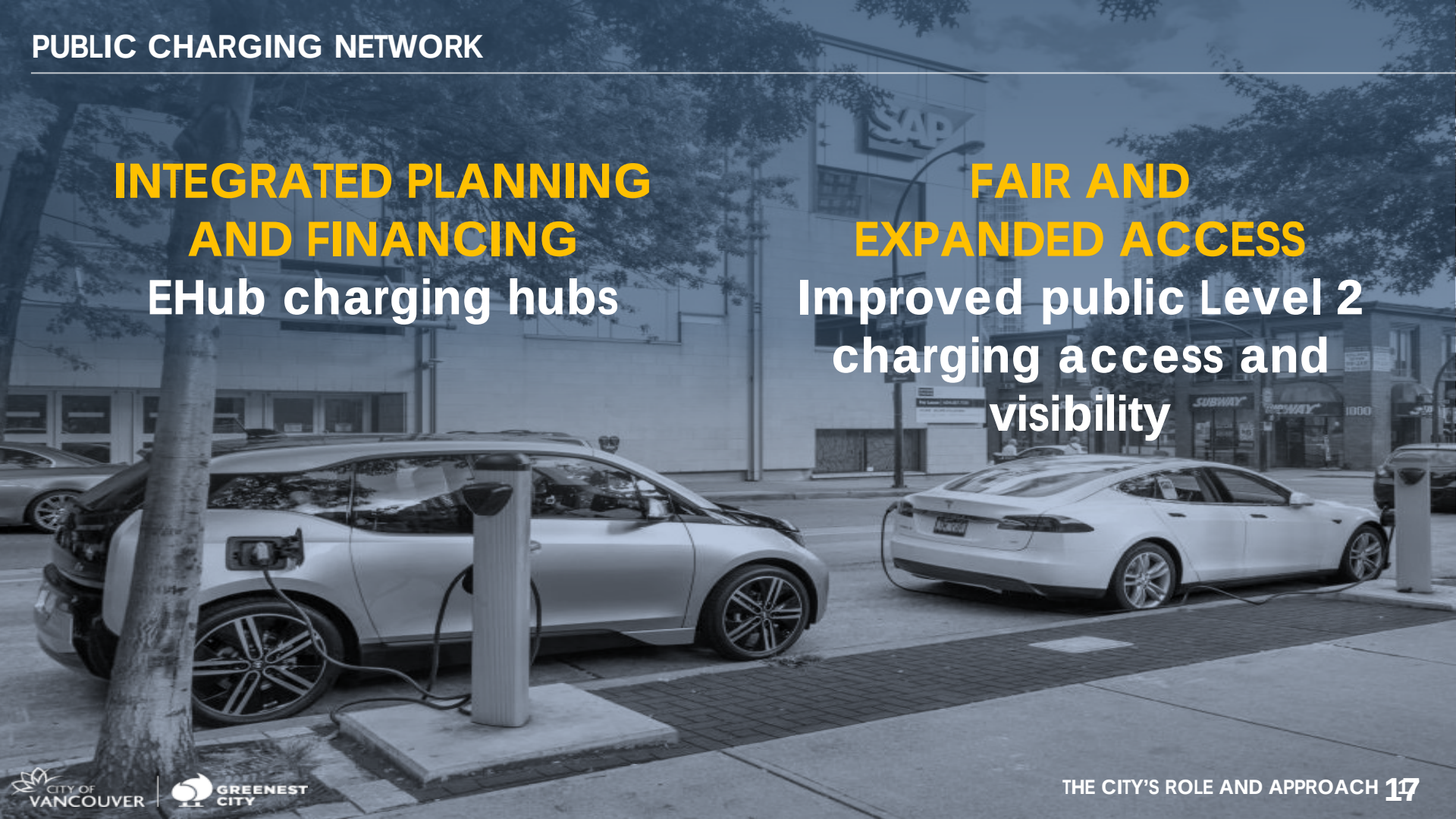
Move most EV requirements from Building Bylaw to Parking Bylaw

3

Two compliance options

- Prescriptive
- Performance

PUBLIC CHARGING NETWORK



INTEGRATED PLANNING AND FINANCING

EHub charging hubs

FAIR AND EXPANDED ACCESS

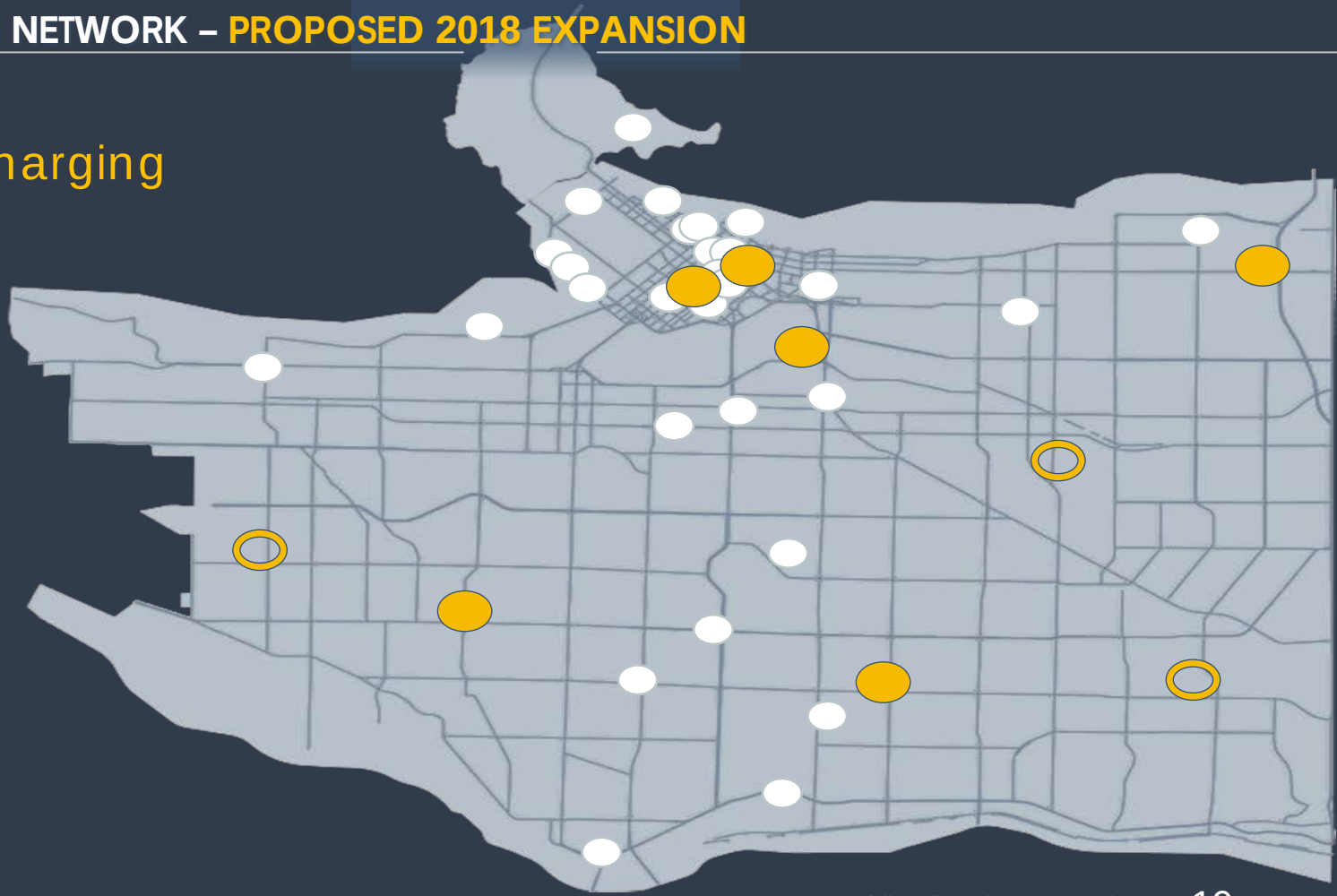
Improved public Level 2 charging access and visibility

PUBLIC CHARGING NETWORK - EXISTING

PUBLIC CHARGING NETWORK – PROPOSED 2018 EXPANSION

Level 2

DC Fast Charging



Public charging network expansion

PUBLIC CHARGING NETWORK – STRATEGIC DIRECTION

Increase access to charging → **EV market expansion** → **Better ROI on public charging** → Private-sector uptake of public charging infrastructure

Estimated # of EVs in Vancouver

~1,000 *in 2016*

~90,000 *by ~2030*

~200,000 *by 2050*

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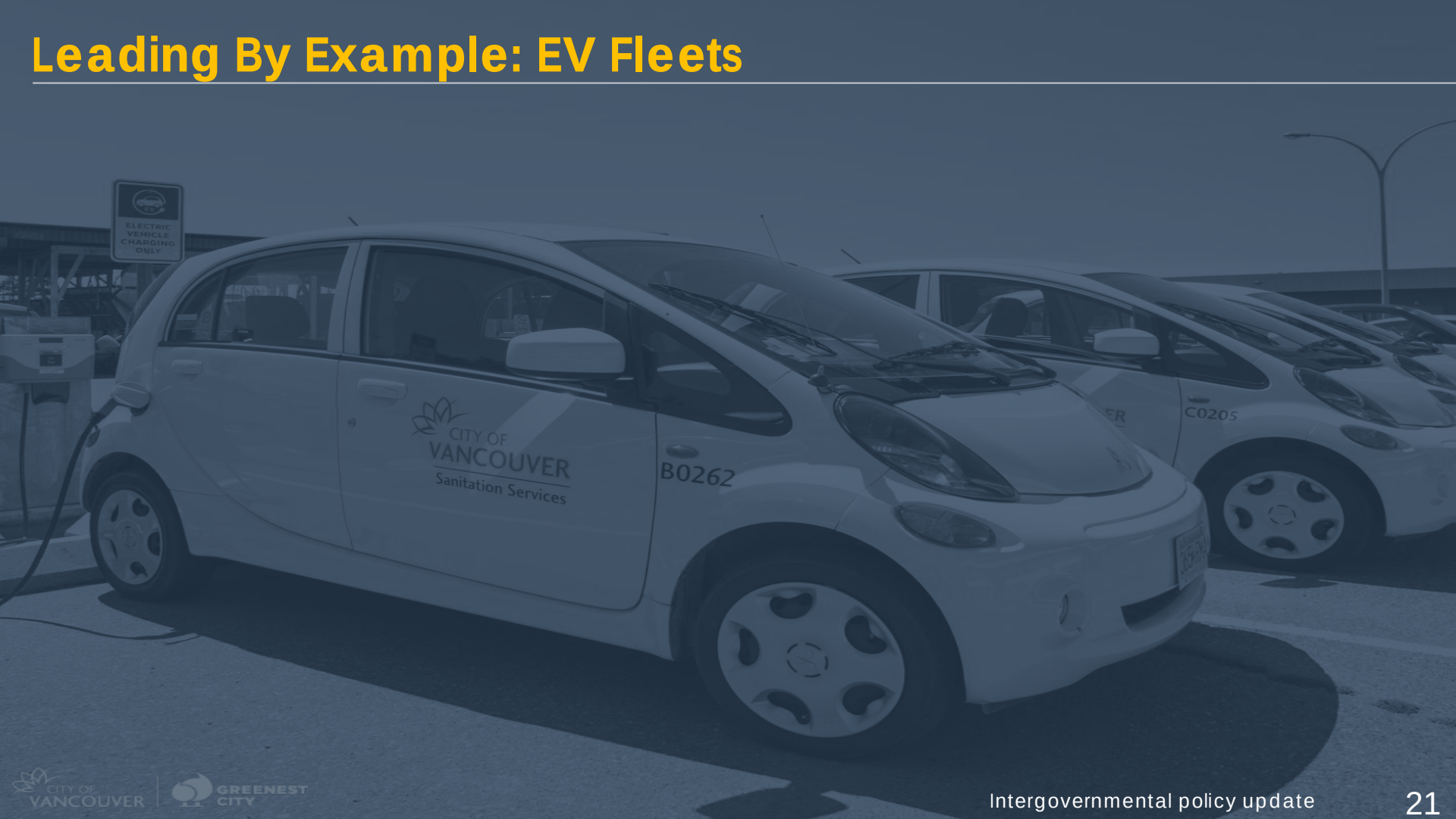
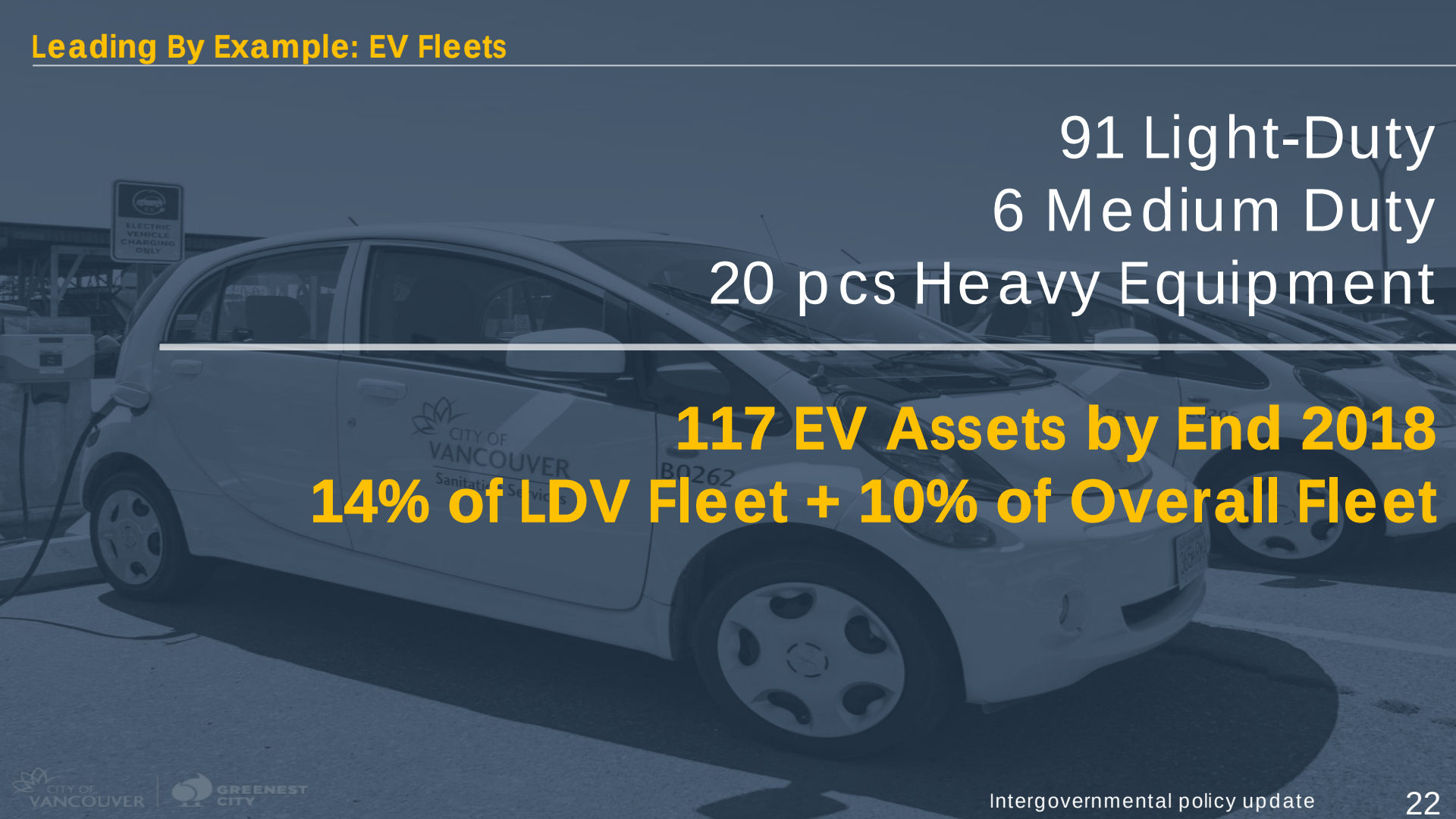
Leading By Example: EV Fleets



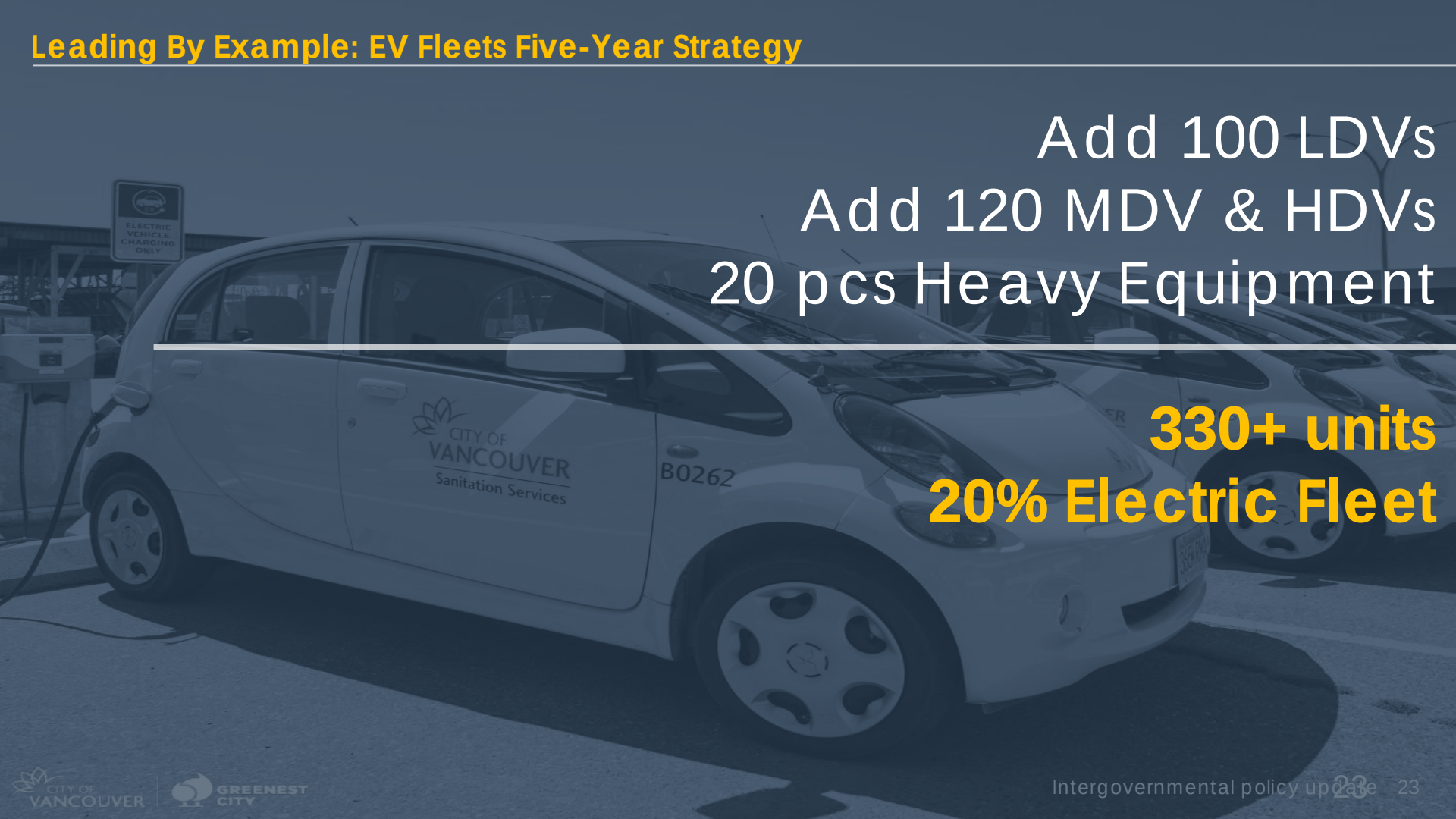
Leading By Example: EV Fleets



91 Light-Duty
6 Medium Duty
20 pcs Heavy Equipment

117 EV Assets by End 2018
14% of LDV Fleet + 10% of Overall Fleet

Leading By Example: EV Fleets Five-Year Strategy



Add 100 LDVs

Add 120 MDV & HDVs

20 pcs Heavy Equipment

330+ units

20% Electric Fleet

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Questions?

Investigate Options for Commercial Buildings

Support for Employees, Tenants

Residential (Level 2) Charging	***Level 2 Charging***	***DC Fast Charging***
$0.86/hr no time limit	$2.00/hr + parking	$0.26/min + parking
		*user fee**
~30km/hr charged	~ 30km/hr charged	~ 200km/hr charged
		range

** fees subject to change based on supply/demand*

FEE LEVELS AND STATION USE ARE INTERDEPENDENT

Too low

Too high

Ideal

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Costs to Fuel

	Cost to Travel 100km – Public	*Cost to Travel 100km - Home*
Ford Focus ST (Gasoline)	$12.55 – Regular @$1.35 $14.41 – Premium @ $1.55	Not Possible
Ford Focus EV	$6.00 - Level 2 $6.01 – DC Fast Charger	$2.53 + taxes

BC Utilities Commission EV inquiry

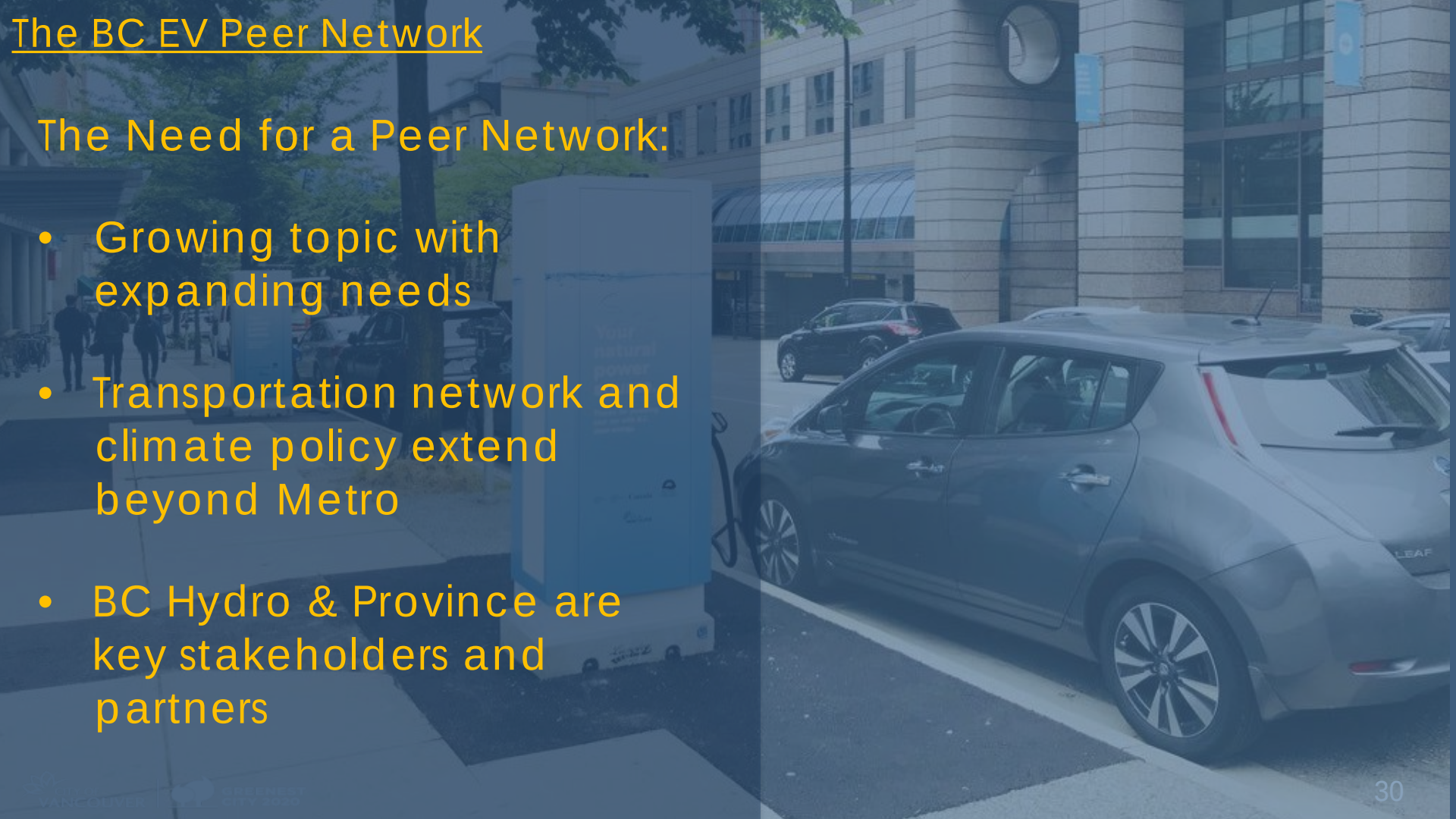
- Only public utilities & local governments can charge fees
- Landlords can pass on utility bills

- Should the BCUC regulate EV charging?
- Are there business opportunities?
- Is the public protected?

The BC EV Peer Network

The Need for a Peer Network:

- Growing topic with expanding needs
- Transportation network and climate policy extend beyond Metro
- BC Hydro & Province are key stakeholders and partners



Lessons Learned

- Scope creep is real and continuous
- Terms of Reference can define level of ambition, alignment with goals
- Difficulty in assessing value to communities outside Metro (early days)
- Broad mix of municipal contexts = varying strategic needs

POTENTIAL SOLUTIONS FOR ZEV PREFERENTIAL PARKING

Reserved EV infrastructure

Preferred placement of stalls

Access for large commercial ZEVs