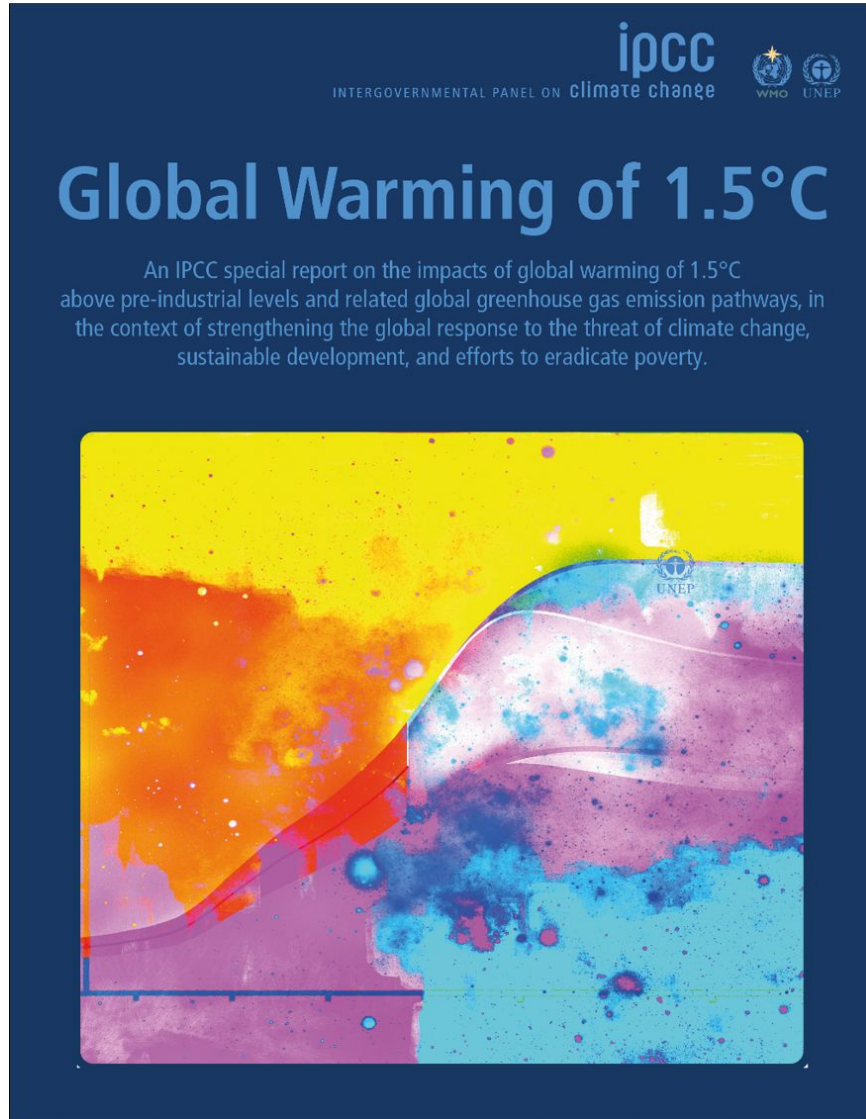


# Agenda Item #6:

Legistar #61929

## Electric Vehicle Parking

Plan Commission – Monday, Nov. 9 2020

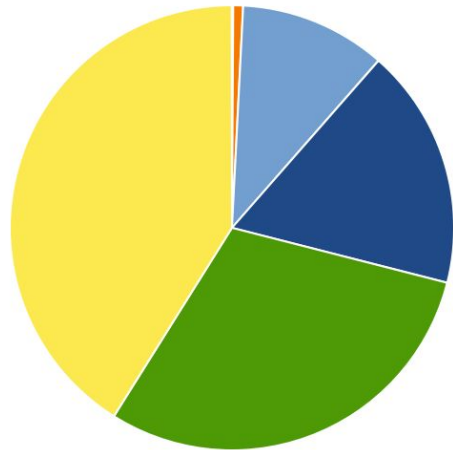


**Avoiding 1.5 degrees Celsius of warming requires the world to slash emissions by about 45 percent from 2010 levels by 2030. Then it must reach net-zero around 2050.**



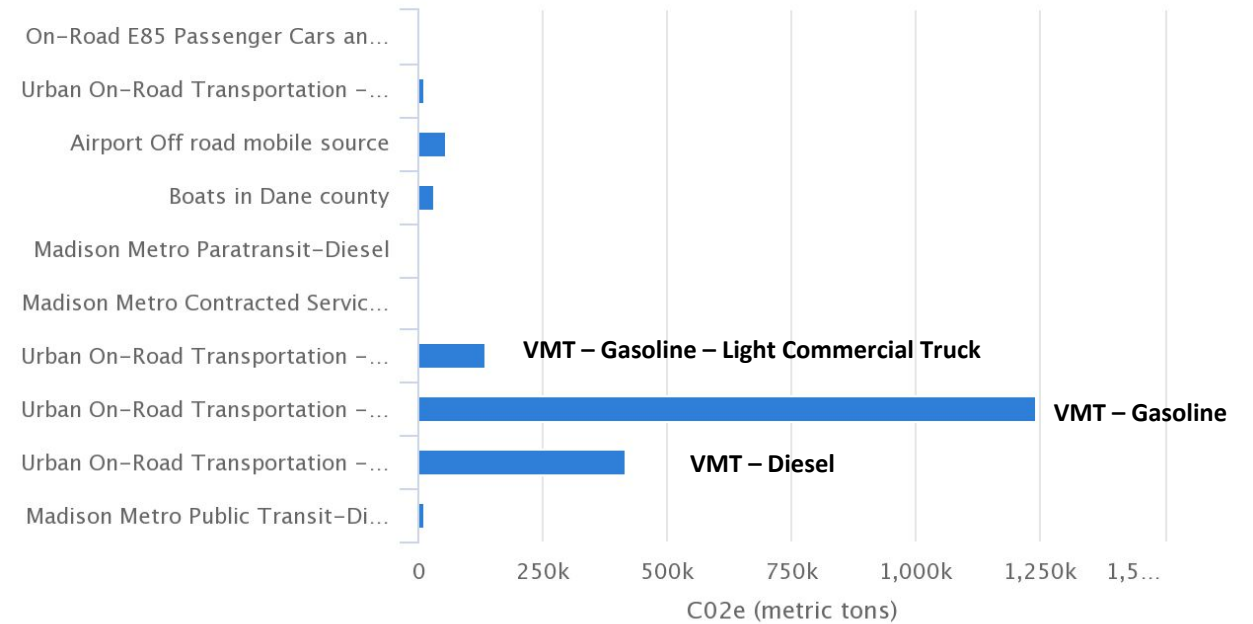
# 2014 City of Madison Community Inventory

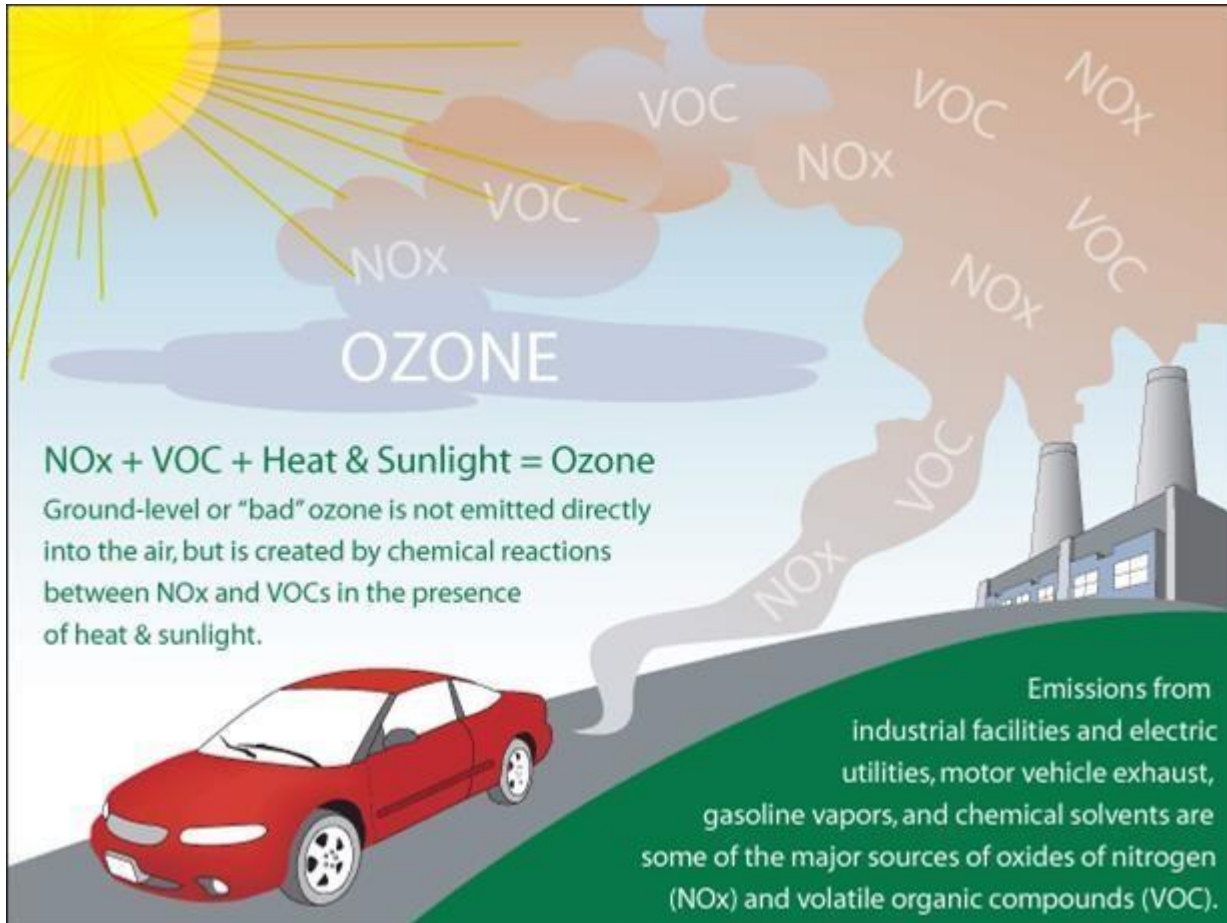
CO2e By Category



● Solid Waste   
 ● Water & Wastewater   
 ● Industrial Energy  
● Residential Energy   
 ● Commercial Energy   
 ● Transportation & Mobile Sources

CO2e By Record

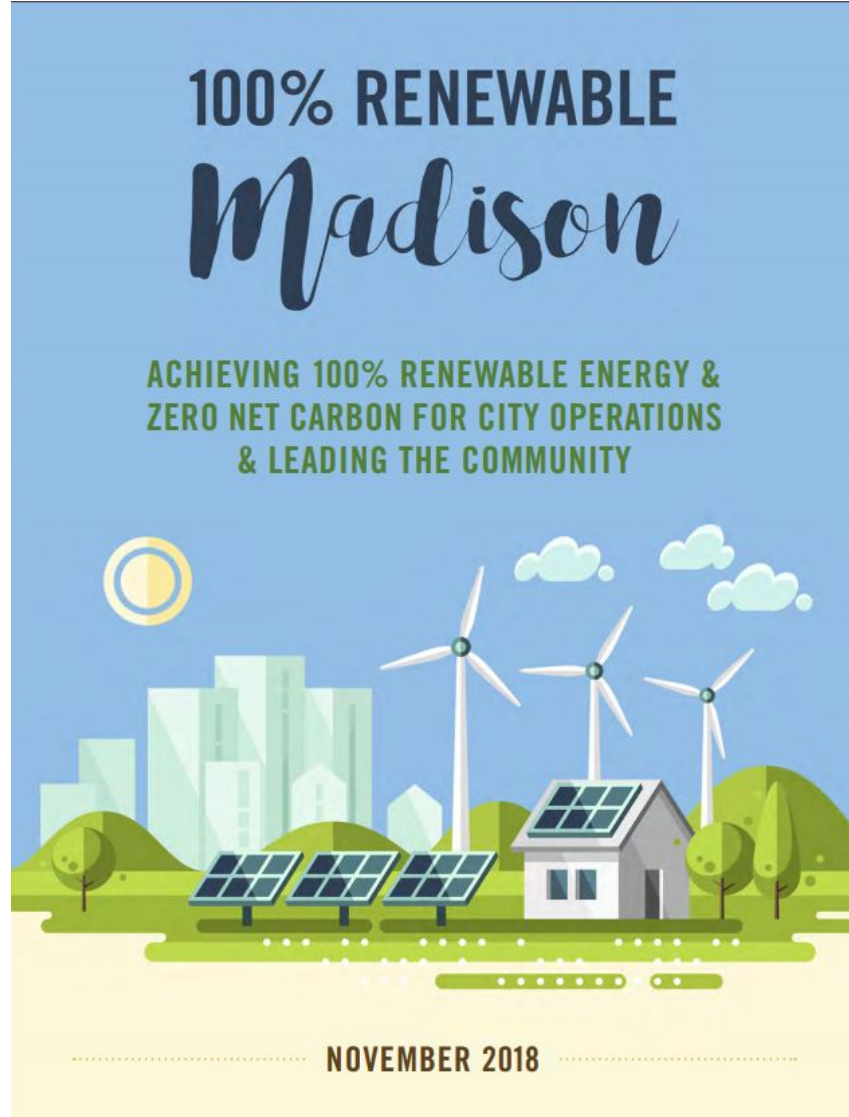




**Tailpipe emissions** are the source of significant air pollutants. Burning gasoline and diesel fuel contributes particulate matter (PM), nitrogen oxides (NOx) and volatile organic compounds (VOCs), as well as carbon dioxide (CO<sub>2</sub>), into the air. While not transportation vehicles, heavy equipment like tractors and bulldozers have similar tailpipe emissions.

<https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics>

<https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/transportation>



“Electric vehicle (EV) growth in Madison and the surrounding area is estimated at 50%-60% per year... Lack of publicly available charging stations is one of the primary barriers to increased adoption of electric vehicles, along with battery life and customer choices. As batteries continue to improve and more EV options become available leading to increased customer uptake, Madison will need more public EV charging stations to accommodate this growth.”

#### **4.1.3 Review Madison City Policies and Practices to Align with 100% Renewable Energy Goal**

- Provide incentives for developers and contractors to build solar-ready and EV-ready for 5-10 years, as appropriate;
- Electric vehicle zoning and permitting: The City of Madison should implement an EV and EV charging station zoning and permitting policy.

# CITY OF MADISON Comprehensive Plan

Imagine Madison  
People Powered Planning



## Green & Resilient

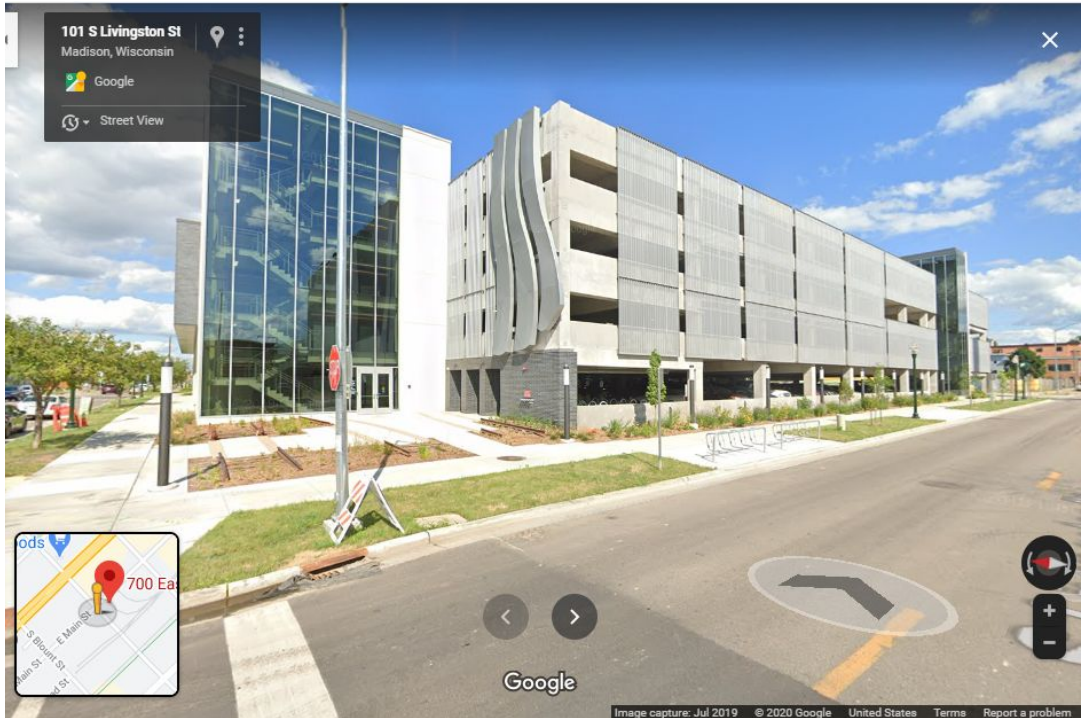
### Strategy 3

Increase the use and accessibility of energy efficiency upgrades and renewable energy.

### Action:

d. Support infrastructure to expand the use of electric vehicles and other eco-friendly fuel sources.

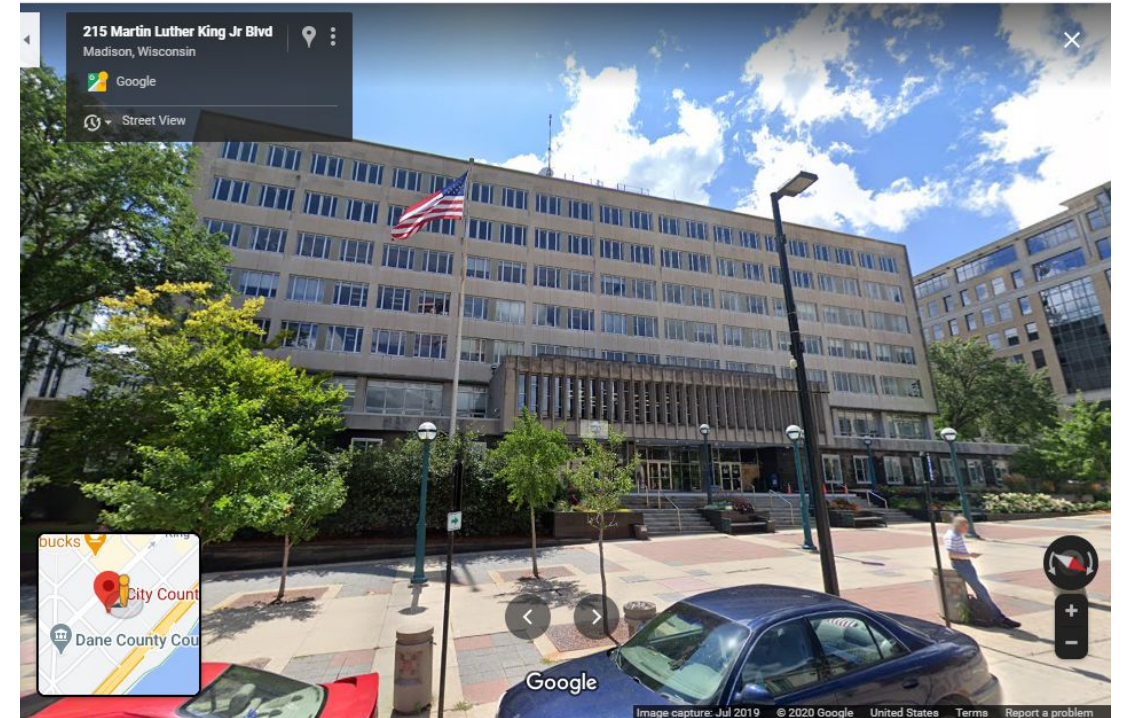
“the City should plan for and support infrastructure to expand the use of electric vehicles”



### MGE @ Livingston Ramp

4 Level 2 Charging Stations = \$600-2,500

Labor & Materials = \$5,000



### City of Madison - Engineering Installations

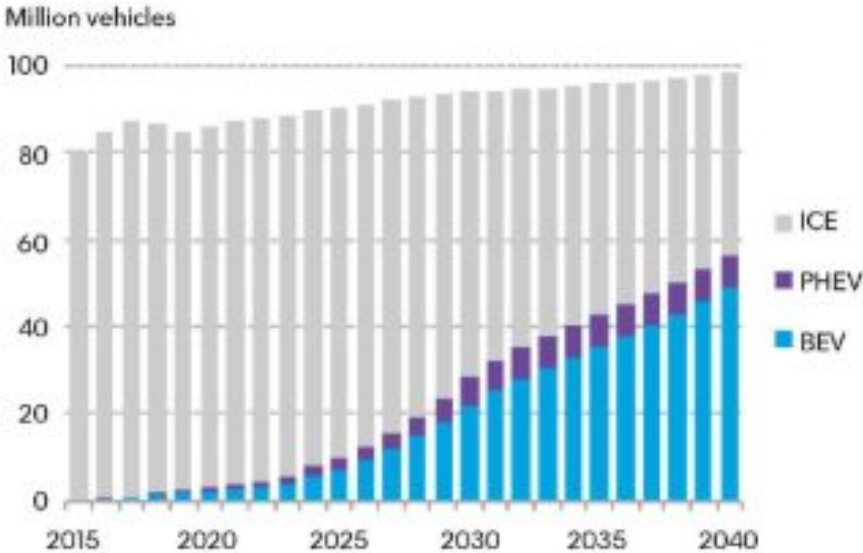
10 City County Building (16 total)

Average Cost = \$2,000 – 3,500

50% Labor / 30% Electrical Equip. / 20% EV Charger

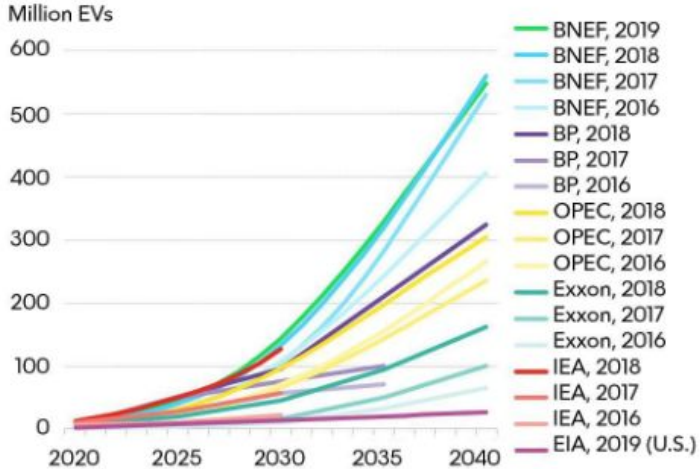
**Bloomberg New Energy Finance:** 56 million EV sales estimated in 2040, which is over 57% of the total new car market. In about 2038 passenger EV sales will eclipse internal combustion engine vehicle sales.

Global long-term passenger vehicle sales by drivetrain



Source: BloombergNEF

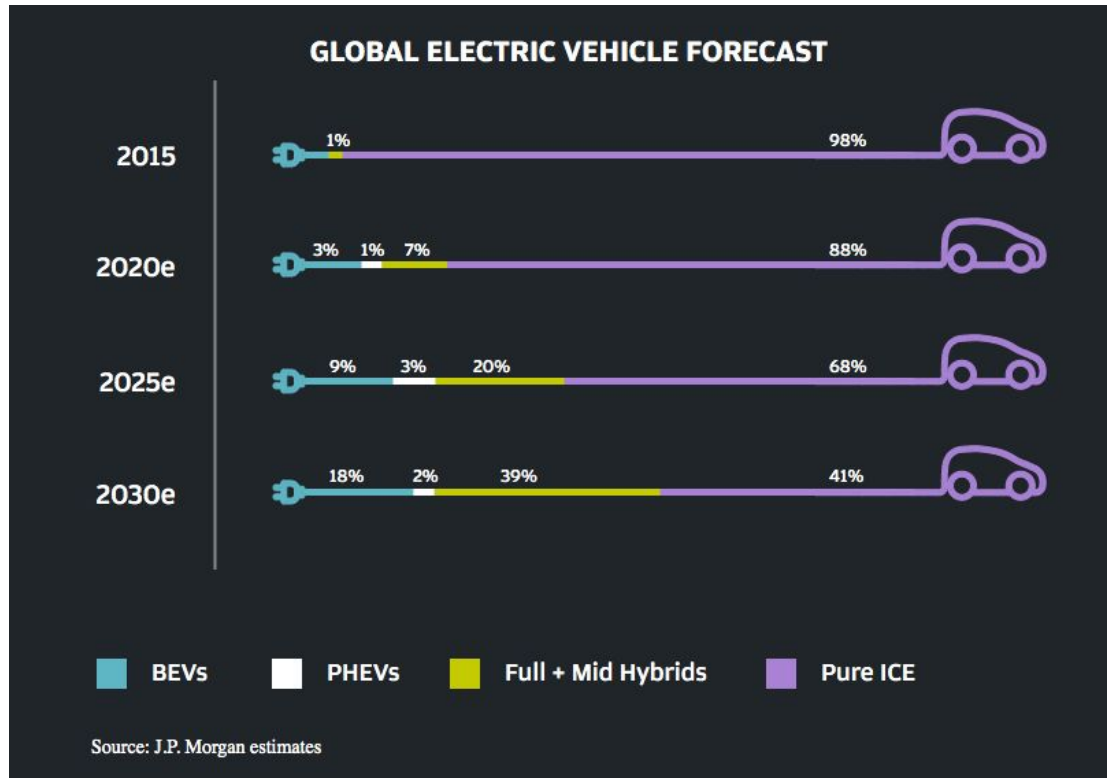
EV Outlooks then and now



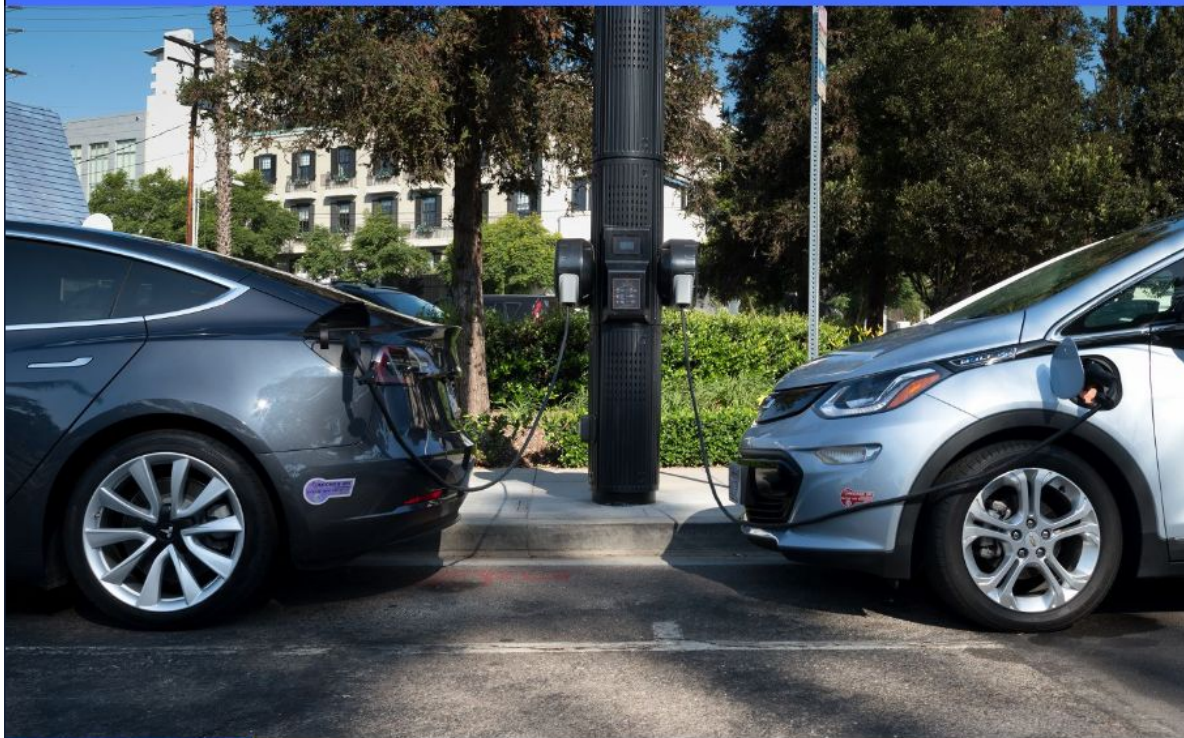
Source: BloombergNEF, organization websites. Note: BNEF's 2019 outlook includes passenger and commercial EVs. Some values for other outlooks are BNEF estimates based on organization charts, reports and/or data (estimates assume linear growth between known data points). Outlook assumptions and methodologies vary. See organization publications for more.



**JP Morgan:** Worldwide, by 2030 we'll have 20% market share for EVs. North American sales will lag slightly, and the Midwest will likely lag by another 2 years from national #s.



- Madison has 1.9% EV market share, the highest in the Midwest
- The most common EV in Madison is the Chevy Volt, followed by the Nissan LEAF which is tied with the total number of Teslas in the city
- There have been 9207 EVs sold in Wisconsin, but only 4785 are currently registered in the state
- Wisconsin EV sales increased by 24.11% from 2017 to 2018



THE FUTURE OF WHAT'S NEXT



## Lack of Electric Vehicle Charging Stations a Growing Concern

“An analysis by Pacific Gas and Electric found that installing charging capacity during construction could reduce the cost per EV charging space by as much as 75 percent.”

<https://www.governing.com/next/Lack-of-Electric-Vehicle-Charging-Stations-a-Growing-Concern.html>



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## Wisconsin is falling behind in EV infrastructure investment

by Chelsea Chandler | Oct 2, 2020 | climate change, Electric Vehicles, Energy & Climate





TOPICAL ALERT

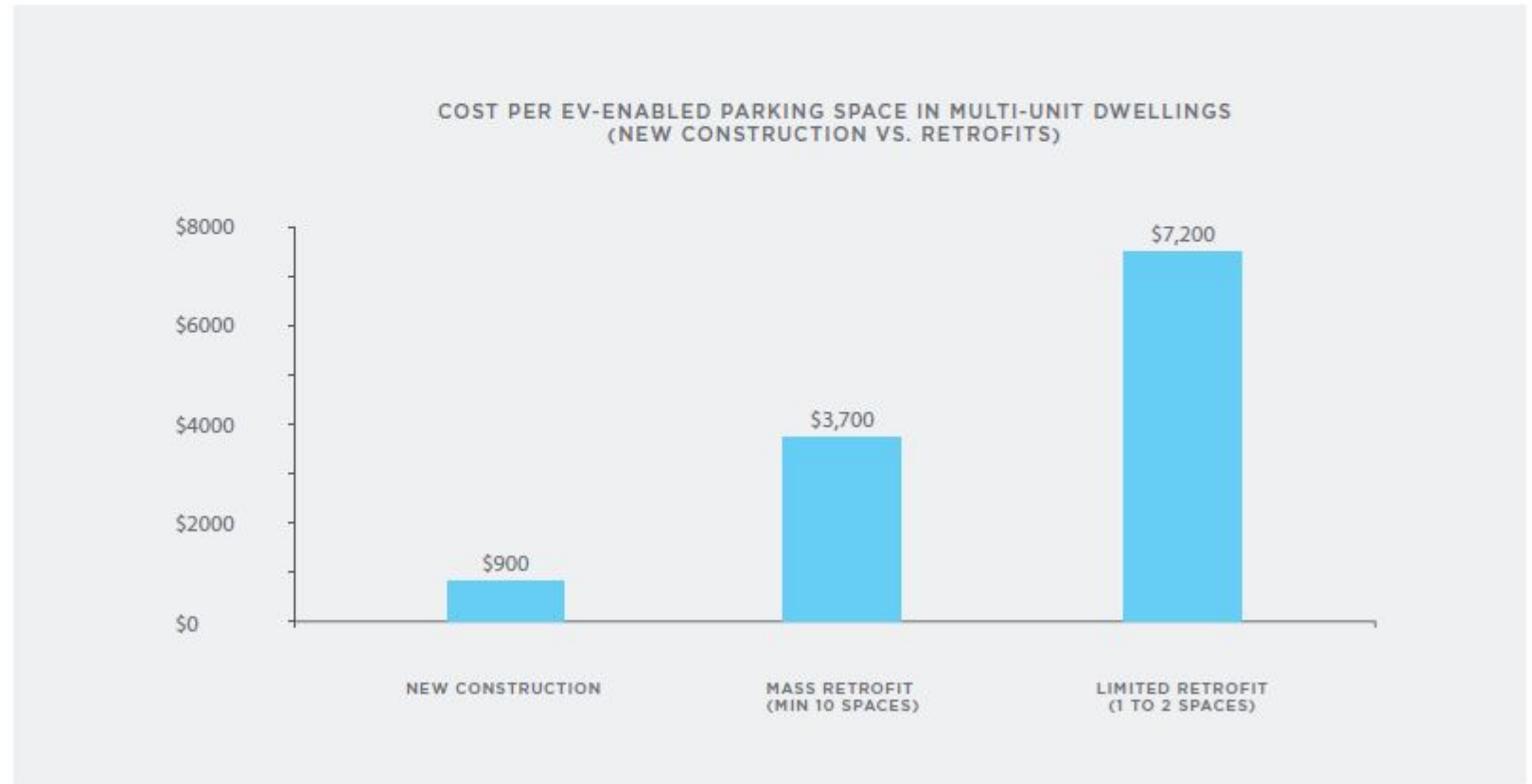
# Electric avenue: Interstate 94 marked as 'EV ready' corridor

Chris Hubbuch | Wisconsin State Journal Oct 13, 2020

SALE! Subscribe for \$1/mo.



“Buildings constructed today will last for 50+ years. Retrofitting parking structures is 4 to 8 times more expensive than outfitting garages at initial construction, and residents will often bear these costs. When installed during initial construction, EV charging infrastructure costs are generally less than 1% of the total building construction cost. “



Source: Tesla – Building Code EV Fact Sheet

Municipality	State	Year	Single-family	Multi-family	Commercial
Summit County	CO	2020	1 EV-Ready Space per dwelling Unit	5% EV-Installed, 10% EV-Ready, 40% EV-Capable (10+ spaces)	5% EV-Installed, 10% EV-Ready, 40% EV-Capable (25+ spaces)
<a href="#">City of Boulder</a>	CO	2020	1 EV-Ready Space per dwelling Unit	5% EV-Installed, 15% EV-Ready, 40% EV-Capable (25+ spaces)	5% EV-Installed, 10% EV-Ready, 10% EV-Capable
<a href="#">Denver</a>	CO	2020	1 EV-Ready Space per dwelling Unit	5% EV-Installed, 15% EV-Ready, 80% EV-Capable	5% EV-Installed, 10% EV-Ready, 10% EV-Capable
<a href="#">Honolulu</a>	HI	2020	1 EV-Capable Space per dwelling unit	25% EV-Ready (8+ spaces)	25% EV-Ready (12+ spaces)
<a href="#">Chicago</a>	IL	2020		20% EV-Ready (5+ spaces)	20% EV-Ready (30+ spaces)
<a href="#">Lakewood</a>	CO	2019	1 EV-Capable Space per dwelling unit	2% EV-Installed, 18% EV-Capable (10+ spaces)	2% EV-Installed, 13% - 18% EV-Capable (10+ spaces)
Tucson	AZ	2019	1 EV-Ready Space per dwelling Unit		
<a href="#">Flagstaff</a>	AZ	2019	1 EV-Ready Space per dwelling Unit	3% EV-Ready	3% EV-Ready
<a href="#">Salt Lake City</a>	UT	2019		1 EV-Installed Space for every 25 parking spaces	
<a href="#">Massachusetts</a>	MA	2019			1 EV-Ready space (15+ spaces)
<a href="#">Seattle</a>	WA	2019	1 EV-Ready Space per dwelling Unit	100% EV-Ready up to 6 space, 20% for parking lots with 7+	10% EV-Ready

# TRANSPORTATION

Additional Information ▾ Related Projects ▾ COVID Mobility Feedback ▾ Expanded Outdoor Dining ▾

Home / Departments / Transportation / Conservation & Sustainable Transportation / News Releases / Chicago City Council Approves Ordinance to Increase Chicago's Electric Vehicle Readiness Citywide

April 24, 2020

## Chicago City Council Approves Ordinance to Increase Chicago's Electric Vehicle Readiness Citywide

Ordinance accounts for increase in electric vehicle ownership and will deliver cost savings

Mayor's Press Office 312.744.3334

[press@cityofchicago.org](mailto:press@cityofchicago.org)

CHICAGO --- Mayor Lori E. Lightfoot and the Chicago City Council today passed an ordinance that requires all new construction of residential buildings, with five or more units, and onsite parking and commercial properties, with 30 or more parking spaces, to have 20% of any supplied parking spaces Electric Vehicle Supply Equipment (EVSE) ready. Additionally, for all applicable properties, at least one of the EVSE-ready spaces must be accessible to people with disabilities.



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ENVIRONMENT

## California Governor Signs Order Banning Sales Of New Gasoline Cars By 2035

September 23, 2020 · 5:44 PM ET

LAUREN SOMMER

SCOTT NEUMAN



<https://docs.google.com/spreadsheets/d/1lgppSv7HvU4ExH8TJarE23o8-Y-q9oLV0TaBPBMKaiE/edit#gid=27292754>

# Proposed **Substitute** Ordinance

1. This ordinance creates a new use in the Zoning Code, **Electric Vehicle Charging Facility**.
2. This ordinance also creates a requirement that certain commercial and residential parking facilities **include EV Ready and EV Installed Infrastructure**

# Proposed **Substitute** Ordinance, **Electric Vehicle Charging Facility**

This would be a stand-alone facility existing for the purpose of providing electric vehicle charging on a retail basis—like a gas station.

Current code regulates electric vehicle charging station under “Auto Service Station” as a Conditional Use, like a gas station

Code provisions:

- Create definition “Electric Vehicle Charging Facility”  
*Delete “electricity” from auto service station definition*
- Allow in certain districts as a *Permitted Use*

# Proposed **Substitute** Ordinance, Include *EV Ready* and *EV Installed* Infrastructure

This ordinance also creates a requirement that certain commercial and residential parking facilities of a certain size and constructed after the effective date of this ordinance be constructed so that up to 50% of all spaces include Electric Vehicle Supply Equipment

**EV ready:** spaces served with conduit/raceways and panel capacity to allow for the future installation of an EV charging station.

**EV Installed:** Space is served by a charging station.



# Proposed **Substitute** Ordinance, Include *EV ready* and *EV installed* infrastructure

*Continued:*

- Relevant definitions: Electric Vehicle, Electric vehicle Charging facility, Electric vehicle charging station, Electric Vehicle Supply Equipment
- Applicability section: new facilities and existing facility expanded by 50%.
- Reconstruction clause, triggering compliance if an existing parking facility is reconstructed more than 50%
- EV requirements will increase in 5-year increments, beginning on January 1, 2021 to January 1, 2041.
- Rounding rule for fractional space calculations

# Proposed **Substitute** Ordinance

“(e) Electric Vehicle Charging Station Requirements. Parking facilities shall be designed and built to meet the following requirements:

1. Applicability. The requirements of this subdivision shall apply to any new parking facility, or to any parking facility that is expanded by 50%, as measured in parking spaces being created after January 1, 2021. A parking facility may be maintained or reconstructed without triggering the requirements of this subdivision. However, where more than 50% of the paving and base in place on January 1, 2021 is removed from an existing parking lot and new paving and base is installed, these requirements shall apply.

42. Where 6 or more parking spaces are being provided for residential uses, the following standards must be met:

Years	EV Capable Ready Spaces	EV Ready Installed Spaces (Min. of Level 2)
2021-2025	10%	2%
2026-2030	20%	4%
2031-2035	30%	6%
2036-2040	40%	8%
2041+	50%	10%

23. Where parking is being provided for certain uses where people park vehicles in excess of six hours, as specified in this paragraph, the following standards must be met:

Years	EV Capable Ready Spaces	EV Ready Installed Spaces (Min. of Level 2)
2021-2025	10%	1%
2026-2030	20%	2%
2031-2035	30%	3%
2036-2040	40%	4%
2041+	50%	5%

**EXAMPLE  
INSTALLATION,  
NEW  
GOVERNMENT  
EAST RAMP**



# Proposed **Substitute** Ordinance

## Timeline:

9/1/2020 – Introduced at Common Council

10/5/2020 – Referred to Sustainable Madison Committee – Passed w/Amendment

11/2/2020 – Referred to Transportation Policy & Planning Board - Passed

11/9/2020 – Referred to Plan Commission

11/17/2020 – Back to Common Council