CITY OF SAINT PAUL

Electric Vehicle Charging Zoning Study

City Council
March 27, 2024

Today's Presentation

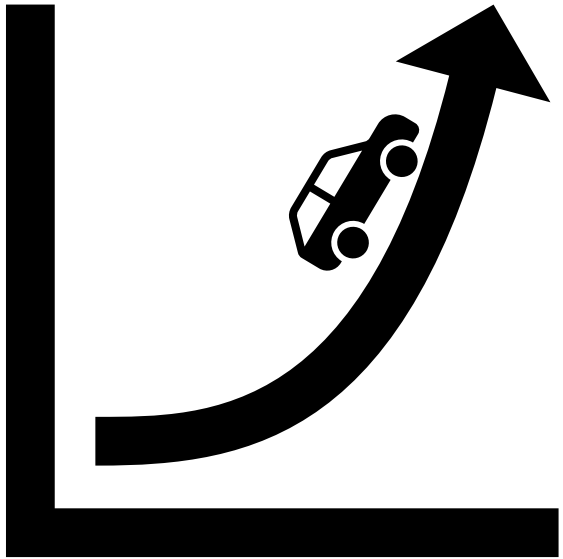
- Why this study
- Recommended amendments

The Looming EV Charging Issue

- EV use is growing
- Charging need is growing
- Most EV charging will be at home
- Most St. Paulites will live in multifamily housing
- Retrofits for multifamily are expensive
- Equity: Will multifamily residents be left behind?

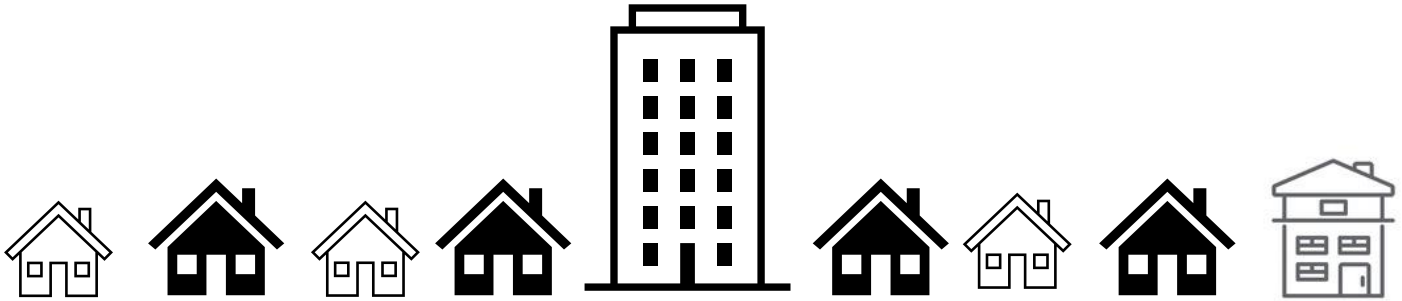
Electric vehicle use is growing

- 7.6% of US auto sales in 2023
- Predicted to be over 50% of sales by early 2030s



Charging need is growing

Most EV charging will be at home



Most St. Paulites will live in multifamily housing

Retrofits for EV charging can be expensive

- 2x to 10x compared to upfront installations

Will multifamily residents be left behind?

- What will happen with the ~11,000 multifamily units we're adding by 2040?

Recommended Amendments

- Apply to surface parking facilities with 16+ parking spaces that require site plan review
- Require 80% of parking spaces to be EV capable
- Require 1 per 30 parking spaces to be EV ready
- No requirement for EV charger itself

Recommended Amendments

Sec. 63.212. ~~Reserved.~~ Electric vehicle parking.

For surface parking facilities with more than fifteen (15) parking spaces that require site plan review per Sec. 63.202, electric vehicles shall be accommodated as follows:

(a) At least eighty (80) percent of the facility's parking spaces must have an electrical conduit or raceway connection to electrical service with sufficient panel space reserved that is capable of operating at Level 2 (208 Volts) or greater power.

(b) Additionally, for surface parking facilities with more than thirty (30) spaces that require site plan review per Sec. 63.202, at least one (1) of the spaces per each thirty (30) must be served by installed wiring in electrical conduit or raceway, and electrical service sufficient to supply electric vehicle charging at a minimum of 208 Volts power level. Such space may or may not include the associated above-ground charging equipment for charging an electric vehicle.

Conduit and raceway required above shall be installed in accordance with the Minnesota State Building Code and National Electrical Code, including with regard to sizing and location, and shall be capped. The amounts of electric vehicles parking infrastructure for structured parking shall be as directed by the Minnesota State Building Code.

Recommended Amendments

Sec. 63.212. ~~Reserved.~~ Electric vehicle parking.

For surface parking facilities with more than fifteen (15) parking spaces that require site plan review per Sec. 63.202, electric vehicles shall be accommodated as follows:

(a) At least eighty (80) percent of the facility's parking spaces must have an electrical conduit or raceway connection to electrical service with sufficient panel space reserved that is capable of operating at Level 2 (208 Volts) or greater power.

(b) Additionally, for surface parking facilities with more than thirty (30) spaces that require site plan review per Sec. 63.202 and that are intended to serve any use that includes a multifamily dwelling, at least one (1) of the spaces per each thirty (30) must be served by installed wiring in electrical conduit or raceway, and electrical service sufficient to supply electric vehicle charging at a minimum of 208 Volts power level. Such space may or may not include the associated above-ground charging equipment for charging an electric vehicle.

Conduit and raceway required above shall be installed in accordance with the Minnesota State Building Code and National Electrical Code, including with regard to sizing and location, and shall be capped. The amounts of electric vehicles parking infrastructure for structured parking shall be as directed by the Minnesota State Building Code.

EV Charging Zoning Study

https://www.stpaul.gov/departments/planning-and-economic-development/planning/current-activities for more information

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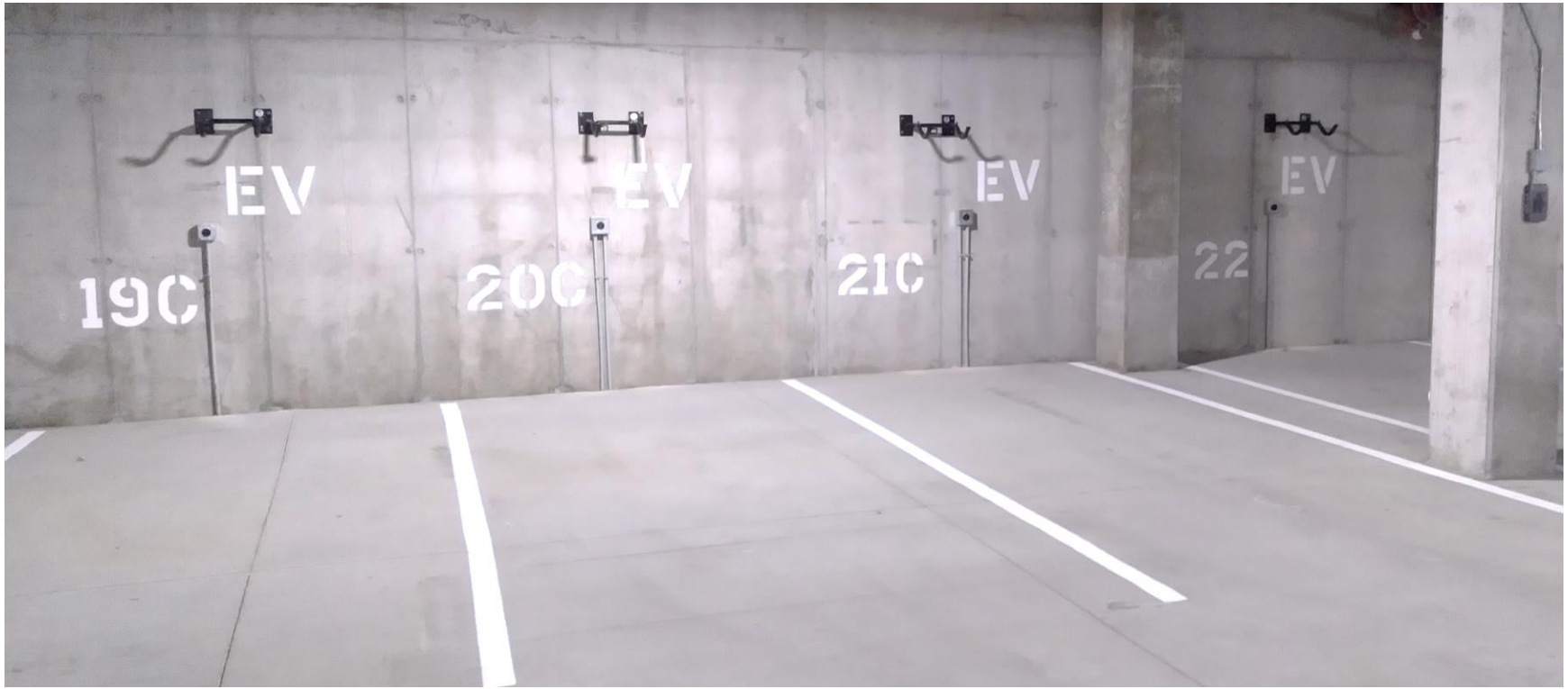
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Implementation

- Forecasted costs to implement

Upfront prep for EV charging is relatively cheap

- Estimated around 0.1% to 0.2% of overall development costs

Example application: 520 Payne Avenue

- 62-unit residential development with 45 parking spaces. Proposed code amendments would have required:
  - 1 EV-ready space (cost: ~$1,000/space)
  - 36 EV-capable spaces (cost: ~$600/space)
  - Total EV costs: ~$22,600
- Total development costs: $18.7 million

(note: Figures above are illustrative, with a high plus/minus, and not a customized estimate)

Example application: 695 Grand Avenue

- Mixed-use development (81 residential units and 3 restaurant/retail) with 99 parking spaces. Proposed code amendments would have required:
  - 3 EV-ready spaces (cost: ~$1,000/space)
  - 80 EV-capable spaces (cost: ~$600/space)
  - Total EV costs: ~$41,400
- Total development costs: $32.5 million

(note: Figures above are illustrative, with a high plus/minus, and not a customized estimate)

Recommended Amendments

Sec. 63.212. ~~Reserved.~~ Electric vehicle parking.

For surface parking facilities with more than fifteen (15) parking spaces that require site plan review per Sec. 63.202, electric vehicles shall be accommodated as follows:

(a) ~~At~~If intended to serve any use that includes a multifamily dwelling, at least eighty (80) percent of the facility's parking spaces must have an electrical conduit or raceway connection to electrical service with sufficient panel space reserved that is capable of operating at Level 2 (208 Volts) or greater power. If intended to serve uses that do not include a multifamily dwelling, at least twenty (20) percent of the facility's parking spaces must be served in this manner.

(b) Additionally, for surface parking facilities with more than thirty (30) spaces that require site plan review per Sec. 63.202, at least one (1) of the spaces per each thirty (30) must be served by installed wiring in electrical conduit or raceway, and electrical service sufficient to supply electric vehicle charging at a minimum of 208 Volts power level. Such space may or may not include the associated above-ground charging equipment for charging an electric vehicle.

Conduit and raceway required above shall be installed in accordance with the Minnesota State

Recommended Amendments

Sec. 63.212. ~~Reserved.~~ Electric vehicle parking.

For surface parking facilities with more than fifteen (15) parking spaces that require site plan review per Sec. 63.202, electric vehicles shall be accommodated as follows:

(a) At least eighty (80) percent of the facility's parking spaces must have an electrical conduit or raceway connection to electrical service with sufficient panel space reserved that is capable of operating at Level 2 (208 Volts) or greater power.

(b) Additionally, for surface parking facilities with more than thirty (30) spaces that require site plan review per Sec. 63.202, at least one (1) of the spaces per each thirty (30) must be served by installed wiring in electrical conduit or raceway, and electrical service sufficient to supply electric vehicle charging at a minimum of 208 Volts power level. Such space may or may not include the associated above-ground charging equipment for charging an electric vehicle. For parking facilities intended to serve solely uses that do not include a multifamily dwelling, the number of spaces required by this paragraph is no more than two (2).

Conduit and raceway required above shall be installed in accordance with the Minnesota State Building Code and National Electrical Code, including with regard to sizing and location, and shall be