VILLAGE OF DOWNERS GROVE
Report for the Village
6/3/2025

SUBJECT:	SUBMITTED BY:
Amendment to Chapter 10 of the Municipal Code regarding provisions of the National Electric Code (NFPA 70)	Stan Popovich, AICP Director of Community Development

SYNOPSIS

An ordinance has been prepared to update Chapter 10 of the Municipal Code to include provisions of the 2023 National Electric Code (NFPA 70) which align with the State of Illinois Electric Vehicle Charging Act (P.A.) 103-0053.

STRATEGIC PLAN ALIGNMENT

The goals for 2023-2025 include *Exceptional Municipal Services*.

FISCAL IMPACT

N/A

RECOMMENDATION

Approval on the June 10, 2025 active agenda.

BACKGROUND

The State of Illinois Electric Vehicle Charging Act (P.A. 103-53) (Act) became effective January 1, 2024. Per the Act, all new single-family residence or a small multifamily residence (buildings that accommodate 2-4 families) shall have at least one EV-capable parking space for each residential unit that has dedicated parking. All new, large multifamily residential buildings (buildings that accommodate 5 families or more) are required to have 100% of its total parking spaces EV-capable. The Act defines EV-capable as:

> *parking spaces that have the electrical panel capacity and conduit installed during construction to support future implementation of electric vehicle charging with 208-volt or 240-volt or greater, 40-ampere or greater circuits.*

The Act states that EV-capable parking spaces require reserved capacity no less than 40A 208/240V unless controlled by an energy management system providing load management in accordance with NFPA 70. This requirement for reserved capacity can be challenging for large multifamily residential buildings, many of which have over 150 parking spaces. An energy management system is a tool that:

- monitors and/or controls an electrical load;
- shares electricity with multiple loads and sources in a building, including EV charging systems; and
- can significantly reduce the electrical load requirements for a building by optimizing power through load shedding controls.

The Village currently follows the 2020 National Electric Code (NEC). The 2020 NEC does not include current provisions regarding Energy Management Systems. The 2023 NEC includes new allowances for Energy Management Systems that will assist permit applicants and staff in complying with the Act.

The proposed amendments include adopting the following new sections of the 2023 NEC:

- Section 220.57 Electric Vehicle Supply Equipment (EVSE) Load
  - Specifies the load that must be included for electric vehicle supply equipment.

- Section 220.70 Energy Management System (EMSs)
  - Energy management systems that can control the maximum load of the electrical service.

The proposed amendments also include deleting the following 2020 NEC articles in their entirety and replacing them with 2023 NEC articles in their entirety:

- Article 625 Electric Vehicle Power Transfer System
  - New material and text revisions. Multiple units of electric vehicle supply equipment are now allowed to share a circuit.

- Article 750 Energy Management Systems
  - New material and text revisions. New listing requirements for energy management systems. Expanded requirements and allowances for load management and adjustable settings.

Staff recommends the amendments as noted above. The amendments will provide a path for permit applicants to comply with the Act by monitoring and controlling electric load demands through innovative Energy Management System technology. While an Energy Management System is not required to comply with the Act, these amendments provide applicants with compliance options aligned with current technology.

ATTACHMENTS

Ordinance

ORDINANCE NO. _____

AN ORDINANCE ADOPTING CERTAIN PROVISIONS OF THE 2023 NATIONAL ELECTRICAL CODE STANDARDS CONCERNING ELECTRICAL VEHICLE POWER TRANSFER SYSTEMS AND ENERGY MANAGEMENT SYSTEMS

BE IT ORDAINED by the Village Council of the Village of Downers Grove in DuPage County, Illinois, as follows: (Additions are indicated by redline/underline; deletions by ~~strikeout~~):

Section 1. That Section 10.601 is hereby amended to read as follows:

Sec 10.601 ~~2020~~ National Electrical Codes - Adopted.

There is hereby adopted, for the purpose of establishing rules and regulations to govern any electrical system or equipment or method of installation thereof not specifically covered by this Chapter, that certain Electrical Code known as the National Electrical Code (the NEC) recommended by the National Fire Protection Association, being particularly the 2020 edition thereof in its entirety, save and except such portions as are hereinafter deleted, modified or amended, and the same is hereby adopted and incorporated as fully as if set out at length herein. In addition, the following Articles and Sections of the 2023 edition of the National Electric Code (NSPA 70) are hereby adopted, with such Articles replacing the corresponding Articles as they appear in the 2020 NEC:

Article 625 Electric Vehicle Power Transfer System;

Article 750 Energy Management Systems;

Section 220.57 entitled “Electric Vehicle Supply Equipment (EVSE) Load” ; and

Section 220.70, of the 2023 NEC Code entitled “Energy Management System (EMSs)”.

All references to the National Electrical Codes in other sections in this Chapter shall mean the editions referred to in this Section. At least one (1) copy of said Codes, including such amendments to it as shall be enacted, shall be filed in the office of the Village Clerk, and additional copies shall be available in the Community Development Department of the Village.

NOTE: For State law as to adoption of codes by reference, see 65 ILCS 5/1-3-2.

Section 2. That Section 10.603 is hereby amended to read as follows:

Sec 10.603 National Electrical Code - Amendments

The 2020 National Electrical Code is amended as follows:

Section 110-26(A)(3) is amended by replacing the words "less than 2.0 (6 1/2 feet) in Exception 2 with the following: "is not less than five (5) feet."

Section 110.31 is amended by deleting the last two sentences of the second paragraph and by substituting in lieu thereof the following: "A fence shall not be less than seven (7) feet in height. The distance from the

fence to live parts shall not be less than given in Table 110.31." **Section 220.40** is amended by adding the following at the end of the section: **Section 220.40 General.** (A) The minimum size service panel for a new single family residence or service upgrade shall be a 200 amp, 40 circuit panel. Exception: single family homes that were constructed prior to August 16, 2016 and are under 1,500 square feet are allowed to upgrade to a 100 amp, 20 circuit panel. (B) The minimum size service panel for any new or remodeled building other than single-family shall be a 100 amp, 20 circuit panel.

Section 230.31(B) is amended by deleting the same in its entirety and by substituting in lieu thereof the following: **Section 230.31(B) Minimum Size**. The conductors shall not be smaller than #3 AWG copper and shall be of type THW or THWN insulation.

Section 230.31 (B) shall be further amended to delete the exception.

Section 230.43 is amended by deleting the same in its entirety and by substituting in lieu thereof the following: **Section 230.43. Wiring methods for 1,000 volts, nomial, or less:** Service-entrance conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods: (1) Rigid metal conduit (2) Rigid nonmetallic conduit Schedule 80 outside of foundation walls

Section 230.70 is amended by adding the following: **Section 230.70 Service equipment disconnecting means:** (D) No live service entrance conductor shall extend over five (5) feet within a building. (E) Every residential unit shall be provided with a main breaker at the individual meter or the panel. Where there are multiple meters installed, a main breaker for the entire building shall be provided adjacent to the meters.

Section 230.71 is amended by deleting the same in its entirety and by substituting in lieu thereof the following: **Section 230.71 Maximum Number of Disconnects.** In all applications, a single main disconnecting means shall be installed. Exception: In residential, single-family construction, a maximum of two disconnects shall be permitted in compliance with 230.72(A)

Section 230.72(A) is amended by deleting the same in its entirety and by substituting in lieu thereof the following: **Section 230.72(A) General.** The two (2) disconnects, if permitted in 230.71, shall be grouped such that they are both visible, clearly marked and can be reached with two hands simultaneously. **Section 240.80** is amended by adding Section (A) to the end of the paragraph: **Section 240.80 Method of Operation.** (A) No tandem, piggy back or space saver circuit breakers shall be permitted.

Section 300.2 is amended by adding Section (C) to the end of the section: **Section 300.2(C) Raceway Types**. Rigid metal conduit (RMC), intermediate metal conduit (IMC) or rigid non-metallic conduit shall be used in all concrete and underground installations.

Section 300.2 is amended by adding Section (D) to the end of the section: **Section 300.2(D) Conductor Materials.** All conductors used in electric service conductor, service entrance conductors, feeders, circuits, grounding electrodes and equipment grounds shall be copper. Aluminum wiring shall not be permitted.

Section 314.3 Nonmetallic Boxes is amended by deleting the same in its entirety.

Articles 320 (AC), 322 (FC), 324 (FCC), 326 (IGS), 330 (MC), 332 (MI), 334 (NM, NMC, NMS), 336 (TC), 338 (SE/USE), are amended by deleting the same in their entirety.

Section 348.10 for type FMC is amended by adding the following at the end of the sentence: "in maximum lengths of six (6) feet."

Section 350.10 is amended by adding the following section: **Section 350.10 Uses Permitted.** (5) LFMC shall be permitted to be used in exposed and concealed location in maximum lengths of six (6) feet.

Section 360.10 is amended by adding the following section: **Section 360.10 Uses Permitted.** (5) FMT shall be permitted to be used in exposed and concealed location in maximum lengths of six (6) feet.

Articles 362 (ENT), 382 (Nonmetallic Extensions), 388 (Surface Nonmetallic Raceways), 394 (Concealed Knob-and-Tube), 396 (Messenger Supported Wiring), 398 (Open Wiring on Insulators) are amended by deleting the same in their entirety.

Section 408.36 is amended by deleting the last sentence of the first paragraph and by substituting in lieu thereof the following: "This overcurrent protective device shall be located within three (3) feet and be readily accessible within sight."

Section 408.36 is further amended by deleting Exception 1 & 2.

Section 422.10 is amended by adding the following section: **Section 422.10. Branch Circuit Rating.** (C) Each furnace, heat pump, water heater, air conditioning unit and similar equipment shall be provided with dedicated branch circuits. A disconnecting means shall be provided on or immediately near the equipment.

Section 604.1.1 is added as follows: **Section 604.1.1 Testing Agency Approvals.** Assemblies that do not have a recognized testing agency listing and cannot be verified for approved product materials and installation methods shall not be permitted.

Article 625 Electric Vehicle Power Transfer is amended by deleting the same in its entirety and substituting in lieu thereof the following:

Article 625 Electric Vehicle Power System of the 2023 NEC

Article 750 Energy Management Systems is amended by deleting the same in its entirety and substituting in lieu thereof the following:

Article 750 Energy Management Systems of the 2023 NEC

Section 3. That all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Section 4. That this Ordinance shall be in full force and effect from and after its adoption and publication as required by law.

_____
Mayor

Passed:
Published:

Attest:_____
Village Clerk

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