

**VILLAGE OF DOWNERS GROVE**  
**Report for the Village Council Meeting**

<b>SUBJECT:</b>	<b>8/9/2016</b>	<b>SUBMITTED BY:</b>
Electrical Code Update to 2014 NEC		Stan Popovich, AICP Director of Community Development

**SYNOPSIS**

An ordinance has been prepared amending portions of Chapter 7 & 10 of the Municipal Code to adopt the 2014 National Electrical Code.

**STRATEGIC PLAN ALIGNMENT**

The goals for 2015-2017 include *Exceptional Municipal Services* and *Steward of Financial, Environmental and Neighborhood Sustainability*.

**FISCAL IMPACT**

N/A

**RECOMMENDATION**

Staff recommends approval on the August 16, 2016 active agenda.

**BACKGROUND**

The Village's current Electrical Code, the 2008 National Electrical Code, was adopted in October 2009. Staff is proposing that the Village update to the 2014 edition of the National Electrical Code (NEC) published by the National Fire Protection Association (NFPA). Comparable communities in the western suburbs are currently utilizing either the 2011 or 2014 editions of the NEC. By adopting the 2014 edition we can ensure our electrical code will remain relevant for several years into the future and be viewed favorably by the ISO Building Code Effectiveness Grading Schedule (BCEGS) survey expected to take place in 2017. A high ISO score demonstrates that a municipality has well-enforced, up-to-date codes, should experience fewer losses as a result, and insurance rates can reflect that.

Staff researched the electrical codes of several neighboring communities for comparison of the specific editions adopted and their local amendments. Staff has also considered the comments and suggestions of local electricians who have performed electrical work in the Village over the years since the last electrical code adoption. Staff examined the differences between the 2008 and 2014 version of the NEC in addition to reviewing all local amendments. The Village's local amendments include requiring adequate working space around electrical equipment, prohibiting mini-breakers (which have been found to cause a fire hazard) in electrical panels, limiting the length of unfused electrical service conductors to five feet and limiting material and cable methods which could be easily compromised. The single change to the local amendments relaxes the provision of a minimum 200 amp panel for all electrical service upgrades to allow for a 100 amp panel upgrade for smaller homes built prior to the effective date of this code update. Staff finds that the 2014 version of the NEC with our local amendments will serve the Village well.

**ATTACHMENTS**

Ordinance

2014 NEC

ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE ADOPTING  
THE 2014 NATIONAL ELECTRICAL CODE**

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

**Section 1. That Section 7.1202. is hereby amended to read as follows:**

**7.1202. International Residential Code - Amendments.**

The deletions from and modifications and amendments to the 2006 International Residential Code are the following:

\* \* \*

**Section R309.6** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**R309.6 Automatic garage door openers.** Automatic garage door openers, if provided, shall be listed in accordance with UL 325 and wired in accordance with the provisions of the 2008-National Electrical Code as adopted and amended by the Village.

\* \* \*

**CHAPTERS 12 through 23 - Residential Mechanical**

**Section M1201.1** is hereby amended to delete "24" and by substituting in lieu thereof the following:  
"23"

**Section M1201.2** is hereby amended to delete "24" and by substituting in lieu thereof the following:  
"23"

**Section M1405.1, Section M1406.1, Section M1406.2, and Section M1407.1** are hereby amended to delete the phrase "Chapters 33 through 42 of this code" and by substituting in lieu thereof the following:

"the applicable provisions of the 2008-National Electrical Code as adopted and amended by the Village."

**Section M1413.2** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**M1413.2 Protection of potable water.** The potable water system shall be protected from backflow in accordance with the provisions of the State of Illinois Plumbing Code.

**Section M1601.1.1** is amended by deleting Condition #7 and its subsections in their and by substituting in lieu thereof the following:

7. Stud wall cavities and the spaces between solid floor joists shall not be used for air plenums serving habitable spaces. Supply and return air shall be conveyed in a ducted system.

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**Section M1601.4** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**M1601.4 Under –floor plenums.** An under floor space used as a supply plenum to a habitable space shall not be permitted.

**Section M1801.1 and Section M2001.1.1** are amended by deleting reference to "Chapter 24" and by substituting in lieu thereof the following:

“the International Fuel Gas Code.”

**Section M2004.1** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**M2004.1 General.** Water heaters used to supply both potable hot water and hot water for space heating shall be installed in accordance with this chapter, the manufacturer’s installation instructions, the Energy Conservation Code, the 2006-International Fuel Gas Code, and the 2008-National Electrical Code as adopted and amended by the Village.

**Section M2005.1** shall be amended to delete reference to "Chapter 24" and ~~and~~ by substituting in lieu thereof the following:

“The International Fuel Gas Code.”

**Section M2005.3** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**M2005.3 Electric water heaters.** Electric water heaters shall also be installed in accordance with the applicable provisions of the Energy Conservation Code and the 2008-National Electrical Code as adopted and amended by the Village.

**Chapter 24** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

See the ~~2006-International Fuel Gas Code~~ as adopted and amended by the Village.

\* \* \*

**Chapter 33 through Chapter 42** are amended by deleting the same in their entirety and by substituting in lieu thereof the following:

See the ~~2008-National Electrical Code~~ as adopted and amended by the Village.

\* \* \*

**Section 2. That Section 10.601. is hereby amended to read as follows:**

**10.601. 2014 National Electrical Code - 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 recommended by the National Fire Protection Association, being particularly the ~~2008-2014~~ 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. All references to the National Electrical Code in other sections in this Chapter shall mean the edition referred to in this section. At least one copy of said Code, 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. (Ord. No. 662, § 33; Ord. No. 1778, §§ 1, 3;

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Ord. No. 2178, § 1; Ord. No. 2876, §§ 2, 5; Ord. No. 3403, § 2.)

NOTE: For state law as to adoption of codes by reference, see Ill. Comp. Stat., ch. 65, § 5/1-3-2.

**Section 3. That Section 10.603. is hereby amended to read as follows:**

**10.603. National Electrical Code - Amendments.**

The ~~2008~~2014 National Electrical Code is amended as follows:

**Section 110-26(e)** is amended by replacing the words "less than 2.0 (6 1/2 feet) in the Exception 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 210.70(A)(3)** is amended by deleting the following phrase from the end of the first sentence:

"where these spaces are used for storage or containing equipment requiring servicing".

**Section 210.70(A)(3)** is further amended by deleting the last sentence in its entirety.

**Section 220.40** is amended by adding the following at the end of the section:

**220.40 General.**

(A) The minimum size service panel for a new single family residence or service upgrade shall be a 200 amp, ~~30~~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:

**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:

**230.43. Wiring methods for ~~600~~1,000 volts, nominal, 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:

**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

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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:

**230.71 Maximum Number of Disconnects.**

**General.** In all applications, a single main disconnecting means shall be installed.

**Section 230-72(A)** is amended by deleting the same in its entirety.

**Section 240.80** is amended by adding Section (A) to the end of the paragraph:

**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:

**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 314.3** is amended by deleting the same in its entirety.

~~**Section 314.7** is amended by deleting (B) and (C) in their entirety.~~

**Articles 320, 322, 324, 326, 330, 332, 334, 336, 338,** are amended by deleting the same in their entirety.

**Section 348.10** 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:

**350.10 Uses Permitted.**

(4) 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:

**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, 382, 388, 394, 396, 398** are amended by deleting the same in their entirety.

**Section 408.36** is amended by deleting the last sentence of the first paragraph, Exception No. 1, 2 & 3 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 the exceptions.

**Section 422.10** is amended by adding the following 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

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the equipment.

**Section 604.1.1** is added as follows:

**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.

(Ord. No. 2178, § 2; Ord. No. 2876, §§ 2, 5; Ord. No. 3403, § 3.)

**Section 4. That Section 10.602. is hereby amended to read as follows:**

**10.602. Definitions.**

See Article 100 Definitions of the ~~2008~~2014 Electrical Code.

**Section 5.** That all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

**Section 6.** That this ordinance shall be in full force and effect from and after its passage and publication in the manner provided by law.

\_\_\_\_\_  
Mayor

Passed:

Published:

Attest: \_\_\_\_\_

Village Clerk