ORDINANCE O-4638

AN ORDINANCE RELATING TO MODIFICATIONS OF TITLE 21 OF THE KIRKLAND MUNICIPAL CODE RELATING TO ELECTRICAL INSTALLATION REQUIREMENTS.

WHEREAS, Title 21 of the Kirkland Municipal Code provides regulations governing building and construction in Kirkland, including but not limited to electrical and administrative regulations; and

WHEREAS, RCW 19.28 requires cities that enforce an electrical code to adopt a code that is equal to, higher or better than the state electrical code; and

WHEREAS, Kirkland's electrical code contained in Chapter 21.70, and adopted in 2015, is based on the 2014 National Electrical Code (NEC) while the state has adopted and amended the 2017 NEC, which means Kirkland's electrical code may no longer be equal to, higher or better than the state's code; and

WHEREAS, the MyBuildingPermit.com organization and the Washington State Electrical Committee of the Washington Association of Building Officials have updated their Washington Cities Electrical Code which is also based on the 2017 NEC but amends it in a manner that better addresses the concerns of cities while still remaining equal to, better or higher than the state's code and should therefore be adopted as Kirkland's electrical code; and

WHEREAS, the Washington Cities Electrical Code has clarified further when a plan review is required for an electrical permit; and

WHEREAS, Chapter 27 of the International Building Code has to be amended to increase compatibility between the Washington Cities Electrical Code and the International Building Code.

NOW, THEREFORE, the City Council of the City of Kirkland do ordain as follows:

Section 1. Section 21.70.010 of the Kirkland Municipal Code is amended to read as follows:

21.70.010 Washington Cities Electrical Code Adopted

The ~~January 22, 2014~~ September 15, 2017 edition of the Washington Cities Electrical Code, parts one and three, as published by the Washington Association of Building Officials is adopted and shall be known as the Kirkland Electrical Code.

Section 2. Subsection 21.06.275(2)(F) of the Kirkland Municipal Code is amended to read as follows:

(F) Plan Review Required. Electrical plan review is required for all new or altered electrical projects in the following occupancies and/or installations:

Exception: Subject to the approval of the Building Official, electrical plan review is not required for the occupancies and/or installations listed below when the scope of work is for conduit(s) only and electrical plans for the project have been submitted for review.

(i) Educational, institutional, or health care facilities/buildings as follows:

a. Hospital;

b. Nursing home unit or long-term care unit;

c. Boarding home;

d. Assisted living facility;

e. Private alcoholism hospital;

f. Alcoholism treatment facility;

g. Private psychiatric hospital;

h. Maternity home;

i. Ambulatory surgery facility;

j. Renal hemodialysis clinic;

k. Residential treatment facility for psychiatrically impaired children and youth;

l. Adult residential rehabilitation center;

m. Educational facilities;

n. Institutional facilities;

Exception: Electrical plan review is not required for the above educational, institutional, or health care facilities/buildings where:

a. Lighting specific projects that result in an electrical load reduction on each feeder involved in the project;

b. Low voltage systems;

c. Modification to existing electrical installations where all of the following conditions are met:

1. Service or distribution equipment involved is rated less than one hundred amperes ~~and does not exceed two hundred fifty volts~~;

2. Does not involve emergency systems other than listed unit equipment per NEC 700.12(F);

3. Does not involve branch circuits or feeders of an essential electrical system as defined in NEC 517.2; and

4. Service and feeder load calculations are increased by five percent or less;

d. Stand-alone utility fed services that do not exceed ~~two hundred fifty volts and less than~~ one hundred amperes where the project's distribution system does not include:

1. Emergency systems other than listed unit equipment per NEC 700.12(F);

2. Critical branch circuits or feeders as defined in NEC 517.2; or

3. A required fire pump system.

(ii) Installations in occupancies, except one- and two-family dwellings, where a service or feeder rated one hundred amperes or greater is installed or altered or if more than one hundred amperes are added to the service or feeder.

(iii) All work on electrical systems operating at/over six hundred volts. Four hundred and eighty volts.

(iv) All commercial generator installations or alterations.

(v) All work in areas determined to be hazardous (classified) locations by the NEC.

(vi) If ~~sixty~~ fifty percent or more of luminaires change in a space enclosed by walls or ceiling-height partitions. ~~and there is an increase in the lighting load.~~

(vii)Installations of switches or circuit breakers rated four hundred amperes or over except for one- and two-family dwellings.

(viii)Wind-driven generators.

(ix) Solar photovoltaic systems.

(x) Any proposed installation which cannot be adequately described in the application form.

(xi) Temporary electrical services exceeding four hundred amps.

Section 3. Section 21.08.016 of the Kirkland Municipal Code is deleted.

Section 4. A new Section 21.08.014 of the Kirkland Municipal Code is added as follows:

21.08.014 Administration
The administrative provisions for the enforcement of the International Building Code are located in chapter 21.06.

Section 5. A new Section 21.08.016 of the Kirkland Municipal Code is added as follows:

21.08.016 IBC Section 202 amended.

Section 202 of the IBC is amended to read:

[F] STANDBY POWER SYSTEM. All references to Standby Power Systems shall be considered to indicate Legally Required Power in accordance with the Washington Cities Electrical, and NFPA 70 (National Electrical Code), and shall be in accordance with Chapter 27 Legally Required Standby Power, as a source of automatic electric power of a required capacity and duration to operate requiring building, hazardous material or ventilation systems in the event of a failure of the primary power. Standby Power Systems are required for electrical loads where interruption of the primary power could create hazards or hamper rescue or fire-fighting operations.

Section 6. A new Section 21.08.072 of the Kirkland Municipal Code is added as follows:

21.08.072 IBC Chapter 27 amended.

Chapter 27 of the IBC is amended to read as follows:

CHAPTER 27
ELECTRICAL

SECTION 2701
GENERAL

2701.1 Scope.
This chapter governs the electrical components, equipment and systems used in buildings and structures covered by this code. Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of The Washington Cities Electrical Code.

SECTION 2702
EMERGENCY AND LEGALLY REQUIRED STANDBY POWER SYSTEMS

[F] 2702.1 Installation.
Emergency power systems and legally required standby power systems shall comply with Sections 2702.1.1 through 2702.1.7 and Table 2702.

[F] 2702.1.1 Stationary generators.
Stationary emergency and legally required standby power generators required by this code shall be listed in accordance with UL 2200.

[F] 2702.1.2 Electrical.
Emergency power systems and legally required standby power systems required by this code or the Inter- national Fire Code shall be installed in accordance with the *International Fire Code*, the Washington Cities Electrical Code, NFPA 110 and NFPA 111.

[F] 2702.1.3 Load transfer.
Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in this code. Legally required standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost, unless specified otherwise in this code. Transfer to full emergency or legally required standby power shall take place within the maximum time to energize loads specified in Table 2702.

[F] 2702.1.4 Load duration.
Emergency power systems and legally required standby power systems shall be designed to provide the required power for a minimum duration of 8 hours for fire pumps serving high rise buildings in accordance with NFPA 20, and 2 hours for other systems without being refueled or recharged, unless specified otherwise in this code.

[F] 2702.1.5 Uninterruptable power source.
An uninterrupted source of power shall be provided for equipment when required by the manufacturer's instructions, the listing, this code or applicable referenced standards.

[F] 2702.1.6 Interchangeability.
Emergency power systems shall be an acceptable alternative for installations that require standby power systems.

[F] 2702.1.7 Group I-2 occupancies.
In Group I-2 occupancies, in new construction or where the building is substantially damaged, where an essential electrical system is located in flood hazard areas established in Section 1612.3, the system shall be located and installed in accordance with ASCE 24.

[F] 2702.1.8 Equipment room.
If a legally required standby or emergency power system includes a generator set inside or serving a building, the generator set shall be located in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, to separate it from the remainder of the building, the transfer switches, and from the normal power source including transformers and distribution equipment. The transfer switches shall also be located in a separate room enclosed with 2-hour fire barriers constructed I accordance with Section 707 or horizontal assemblies constructed in accordance with Section 700, or

both, to separate it from the remainder of the building. Power distribution from the emergency source to the emergency transfer switch shall be by an independent route from the normal power source. System supervision with manual start and transfer features shall be provided at the fire command center or an approved location when a fire command center is not required. Such equipment rooms shall be ventilated directly to the exterior for generator combustion air and radiator cooling air. Any ducts required for such ventilation shall not be dampered, and shall be fire-resistance rated to the same level of protection as that required for the equipment room. The requirements of this subsection 2702.1.8 do not apply to optional tenant-owned or landlord-owned generator sets.

Exception: Legally required standby or emergency power system generator sets inside a building other than a high-rise building in accordance with Section 403 and other than an underground building space in accordance with Section 405, may be located in equipment rooms with a 1-hour fire-resistance rating.

[F] 2702.1.9 Routing of legally required standby and emergency power.
Equipment and systems requiring legally required standby or emergency power shall be supplied with two sources of power. Primary power shall be from the normal building power system. Legally required standby power or emergency power shall be from an approved source complying with the Washington Cities Electrical Code. The legally required standby power or emergency power source and its transfer switches shall be in separate rooms from the normal power transformers and switch gears, and ventilated directly to and from the exterior. The room shall be completely enclosed in not less than 1-hour fire barriers constructed in accordance with Section 707, hour 1-hour horizontal assemblies constructed in accordance with Section 711, or both, except 2-hour fire-resistance construction shall be required for high-rise and underground buildings per Sections 403 and 405 respectively. Power distribution from the two sources shall be by independent routes to the room containing the automatic transfer switch(s). Independent routes shall mean either a minimum 1-hour fire-resistance separation, or a physical distance of not less than 50 feet. Transfer to full emergency power shall be automatic and shall take place within the maximum time to energize loads. The systems shall comply with the Washington Cities Electrical Code.

[F] 2702.1.10 Fuel-fired generator sets and fuel storage location.
Fuel fired generator sets and associated fuel storage, including optional landlord-owned or tenant-owned generator sets, located more than 75 feet above the lowest level of Fire Department vehicle access, or located at a floor level more than 30 feet below the lowest level of exit discharge, require the approval of the fire code official.

[F] 2702.2 Where required.
Emergency and legally required standby power systems shall be provided where required by Sections 2702.2.1 through 2702.2.16 and other sections of this code.

[F] 2702.2.1 Emergency alarm systems.
Emergency power shall be provided for emergency alarm systems as required by Section 415.5.

[F] 2702.2.2 Elevators and platform lifts.
Legally required standby power shall be provided for elevators and platform lifts used as accessible means of egress as required in Sections 1009.4, 1009.5. Emergency power shall be provided for elevators in high-rise buildings as required in Section 403.4.8.4.

[F] 2702.2.3 Emergency responder radio coverage systems.
Standby power shall be provided for emergency responder radio coverage systems required in Section 915 and the *International Fire Code*. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.

[F] 2702.2.4 Emergency voice/alarm communication systems.
Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

[F] 2702.2.5 Exit signs.
Emergency power shall be provided for exit signs as required in Section 1013.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

[F] 2702.2.6 Group I-2 occupancies.
Essential electrical systems for Group I-2 occupancies shall be in accordance with Section 407.10.

[F] 2702.2.7 Group I-3 occupancies.
Emergency power shall be provided for power-operated doors and locks in Group I-3 occupancies as required in Section 408.4.2.

[F] 2702.2.8 Hazardous materials.
Emergency or legally required standby power shall be provided in occupancies with hazardous materials where required by the *International Fire Code*.

[F] 2702.2.9 High-rise buildings.

Emergency power shall be provided in high-rise buildings as required in Sections 403.4.8.

[F] 2702.2.10 Horizontal sliding doors.
Legally required standby power shall be provided for horizontal sliding doors as required in Section 1010.1.4.3. The standby power supply shall have a capacity to operate not fewer than 50 closing cycles of the door.

[F] 2702.2.11 Means of egress illumination.
Emergency power shall be provided for means of egress illumination as required in Section 1008.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

[F] 2702.2.12 Membrane structures.
Legally required standby power shall be provided for auxiliary inflation systems in permanent membrane structures as required in Section 3102.8.2. Legally required standby power shall be provided for a duration of not less than 4 hours. Auxiliary inflation systems in temporary air-supported and air-inflated membrane structures shall be provided in accordance with Section 3103.10.4 of the *International Fire Code.*

[F] 2702.2.13 Pyrophoric materials.
Emergency power shall be provided for occupancies with silane gas in accordance with the *International Fire Code.*

[F] 2702.2.14 Semiconductor fabrication facilities.
Emergency power shall be provided for semiconductor fabrication facilities as required in Section 415.11.10.

[F] 2702.2.15 Smoke control systems.
Emergency power shall be provided for smoke control systems as required in Sections 404.7, 909.11, 909.20.5.7, 909.20.6.2 and 909.21.5. Legally required standby power systems shall be provided for pressurization systems in low-rise buildings in accordance with Washington State Building Code Section 504.4.1 and Section 909.20.6.

[F] 2702.2.16 Underground buildings.
Emergency power shall be provided in underground buildings as required in Section 405.

[F] 2702.3 Critical circuits.
Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

[F] 2702.4 Maintenance.
Emergency and standby power systems shall be maintained and tested in accordance with the *International Fire Code.*

TABLE 2702

LEGALLY REQUIRED STANDBY AND EMERGENCY POWER

TABLE 2702
LEGALLY REQUIRED STANDBY AND EMERGENCY POWER

Type of Equipment	Maximum Time to Energize Loads	Maximum Run Time (Duration)	IBC Section	IFC or NFPA Section
Emergency Power Systems[1]				
Exit Signs	10 seconds	2 hours	1013.6.6	604.2.9 High rises 604.2.16Underground buildings 1013.6.3 Exit signs 3.4.2.13 Temporary tents, canopies, membrane structures NFPA 70
Exit illumination	10 seconds	2 hours	1008.3	1008.3 604.2.9 High rises 604.2.16 Underground buildings
Any emergency voice/alarm communication including area of refuge communication systems (barrier-free and horizontal exits)	NFPA 72	24 hours (battery) 4 hours (generator)	402.7.3, 402.7.4, and 907.5.2.2 Covered mall buildings 403.4.8 and 907.5.2.2 High rises 405.8, and 907.5.2.2 Underground buildings 907.2.1, and 907.5.2.2 Assembly occupancies	907.5.2.2 Covered mall buildings 604.2.9 High rises 604.2.16 Underground buildings 907.2.1.1 Assembly occupancies NFPA 72
Fire detection and fire alarms	NFPA 72	24 hours (battery) 4 hours (generator)	403.4.8 High rises	604.2.8 High rises

			405.8 Underground buildings 909.20.6.2 Smokeproof enclosures 907	604.2.16 Underground buildings 907.6.2 NFPA 72
Smoke control systems in high-rise buildings, underground buildings and covered mall buildings including energy management systems if used for smoke control or smoke removal	60 seconds	2 hours	403.4.8 High rises 404.7 Atriums 405.8 Underground buildings 909.11 Smoke control	909.11
Fire pumps in high-rise buildings and underground buildings	10 seconds	8 hours (NFPA 20)	403.4.8 High rises 405.8 Underground buildings	604.2.9 High rises and NFPA 20 604.2.16 Underground buildings 913.2 All Fire Pumps
Smokeproof enclosures and elevator shaft pressurization	60 seconds for pressurization	4 hours	403.4.8 High rises 909 and 909.20.6.2	
Any shaft exhaust fans required to run continuously in lieu of dampers	60 seconds	4 hours	717.5.3	
Fire service or occupant evacuation elevator car operation in high-rise and underground buildings (including control system, motor controller, operation control, signal equipment, machine room cooling-heating, etc.)	60 seconds	4 hours	3003, 3007, and 3008	604.2.8 High rises 604.2.16 Underground buildings
Elevator car lighting and communications in high-rise and underground buildings	10 seconds	4 hours	3003, 3007, and 3008	604.2.9 High rises 304.2.16 Underground Buildings 604.2.1 Elevators
Lights, heating and cooling for building fire command center and mechanical equipment rooms serving the fire command center	60 seconds	24 hours		604.2.9 High rises
Power (other than lights, heating and cooling) for building fire command center	60 seconds	4 hours		
Mechanical and electrical systems required by IFC 27 (hazardous materials including UPS rooms)	60 seconds	4 hours		Chapter 27

Legally Required Standby[1]				
Exhaust fans for any loading dock located interior to a building	60 seconds	4 hours		
Transfer vault ventilation equipment	60 seconds	4 hours		
Heat tape for sprinkler lines and heating in sprinkler riser rooms	60 seconds	24 hours		
Fuel pump system for any legally required system	60 seconds	4 hours		
Elevators in high rise or underground buildings used for accessible means of egress	60 seconds	2 hours		
Any shaft exhaust fans required to run continuously in lieu of dampers	60 seconds	4 hours	717.5.3	

TABLE 2702 FOOTNOTE

1. The fuel pump and associated systems for the emergency or legally required generator shall be provided with power from the generator to maintain fuel supply.

Section 7. If any provision of this ordinance or its application to any person or circumstance is held invalid, the remainder of the ordinance, or the application of the provision to other persons or circumstances is not affected.

Section 8. This ordinance shall be in forced and effective five days from and after its passage by the Kirkland City Council and publication pursuant to Section 1.08.017, Kirkland Municipal Code in the summary form attached to the original of this ordinance and by this reference approved by the City Council.

Passed by majority vote of the Kirkland City Council in open meeting this 6th day of February, 2018.

Signed in authentication thereof this 6th day of February, 2018.

Amy Walen, Mayor

Attest:

Publication Date: February 12, 2018

Kathi Anderson, City Clerk

Approved as to Form:

Kevin Raymond, City Attorney

PUBLICATION SUMMARY
OF ORDINANCE O-4638

AN ORDINANCE RELATING TO MODIFICATIONS OF TITLE 21 OF THE KIRKLAND MUNICIPAL CODE RELATING TO ELECTRICAL INSTALLATION REQUIREMENTS.

SECTION 1. Amends Section 21.70.010 of the Kirkland Municipal Code related to the Washington Cities Electrical Code.

SECTION 2. Amends Subsection 21.06.275(2)(F) of the Kirkland Municipal Code regarding required plan review.

SECTION 3. Deletes Section 21.08.016 of the Kirkland Municipal Code.

SECTION 4. Adds a new Kirkland Municipal Code Section 21.08.014 providing for the administrative provisions for enforcement of the International Building Code.

SECTION 5. Adds a new Kirkland Municipal Code Section 21.08.016 amending Section 202 of the International Building Code.

SECTION 6. Adds a new Kirkland Municipal Code Section 21.08.072 amending Chapter 27 of the International Building Code.

SECTION 7. Provides a severability clause for the ordinance.

SECTION 8. Authorizes publication of the ordinance by summary, which summary is approved by the City Council pursuant to Section 1.08.017 Kirkland Municipal Code and establishes the effective date as five days after publication of summary.

The full text of this Ordinance will be mailed without charge to any person upon request made to the City Clerk for the City of Kirkland. The Ordinance was passed by the Kirkland City Council at its meeting on the 6th day of February, 2018.

I certify that the foregoing is a summary of Ordinance O-4638 approved by the Kirkland City Council for summary publication.

Kathi Anderson

Kathi Anderson, City Clerk