



# ICC 2021 UPDATE

City Council - Item 12

11.10.2022

Presented by:  
Michael Shannon PE, CBO - Director



**DEVELOPMENT  
SERVICES**

A large, stylized graphic element consisting of overlapping geometric shapes in shades of blue, purple, and teal, with the year "2021" prominently displayed in white.

2021

2021 BUILDING  
RELATED CODES

**CODE UPDATES**

DEVELOPMENT SERVICES  
DEPARTMENT



# OVERVIEW

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- International Code Council (ICC) 2021 Codes
  - Updated every 3 yrs.
  - **10** building-related and fire codes
- Adopted by City to use most:
  - Current national safety codes
  - Latest construction methods
- Reviewing since Feb. 2022
  - Stakeholder involvement
  - **22** meetings



# BUILDING-RELATED AND FIRE CODES APPEALS AND ADVISORY BOARD

*Per City Code Sec. 10-14 (c)(2):*

- 17 members + 17 alternates
  - **NOT** city employees
  - Qualified on building-related and fire codes
  - At-large positions
- Hears & decides appeals of orders, decisions or determinations made by the *Building Official* or *Fire Marshal* about application and interpretations of:
  - Ch. 10
  - Ch. 11
  - Ch. 28 - specific articles
- Assist in the 2021 Development Code adoption process



# BUILDING-RELATED AND FIRE CODES APPEALS AND ADVISORY BOARD POSITIONS

POSITION	PRIMARY	ALTERNATE	ORGANIZATION
Structural Engineer	Louis Faraklas, Jr. PE	Vacant	SEAOt
HVAC Contractor – Open Shop	Jeff Beyer	Scott E. Burger	TACCA
Master Electrician – Union	Ron Caccamese	John Martin	NECA
Mechanical/Plumbing Engineer	Greg McFarland, PE	Vacant	ASHRAE
Commercial Building Owner/Rep	Adrian Contreras	Max Hosford	BOMA
Master Plumber – Open Shop	(William) Spencer Ramzel	George L. Saliba	PHCC
Master Electrician – Open Shop	Gary Kuentz	Edward del Toro	IEC
Architect	Robert G. Hanley, AIA	Vacant	AIA
Commercial Building Contractor	Vacant	Vacant	ABC-AGC
Master Plumber – Union	Robert Jones	Vacant	MCA-SMACNA
Electrical Engineer	Mark F. Bemis, PE	Lon Culbertson, PE	PEPP
Residential Multi-family Bldg. Owner/Manager/Representative	Michael J. Rust	Marc Russ	SAAA
Master Sign Electrician	Lydell M. Toye	Pete Sitterle	SASA
Registered Building Contractor	Bryan E. Smith	Joe Leos	GSABA
Fire Protection Engineer	William Burrus, PE	Karen Carpenter, PE	TFPA
Registered Building Contractor	Jack G. Uptmore	Frank J. Sitterle, Jr.	GSABA
HVAC Contractor – Union	Vacant	Vacant	MCA-SMACNA



# 2021 ICC CODES

- Subcommittees created to review:
  - Building
  - Existing Building
  - Residential
  - Fire
  - Mechanical
  - Plumbing
  - Fuel Gas
  - Energy Conservation
  - Swimming Pool and Spa
- 2020 National Electrical Code





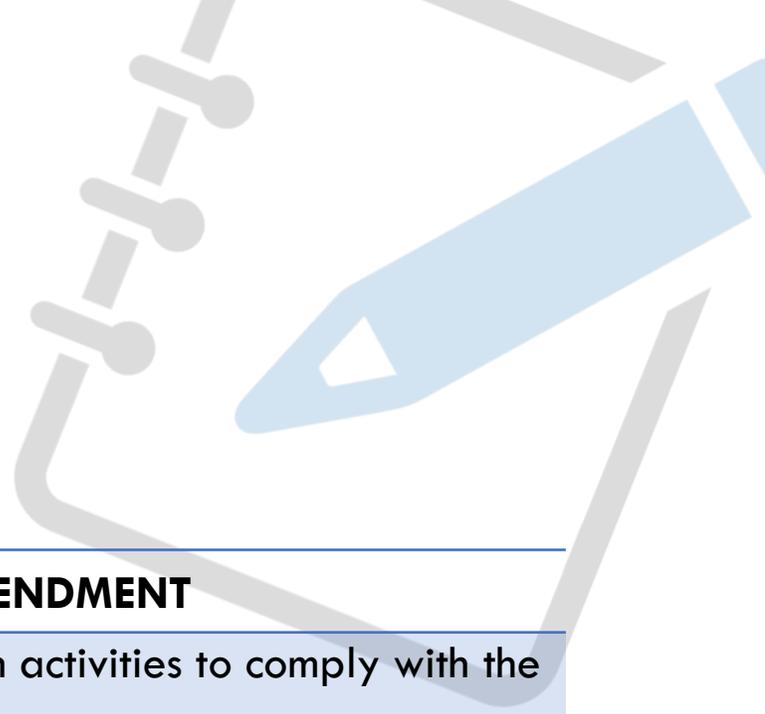
# COMMITTEE MEMBERS & STAKEHOLDERS

- American Institute of Architects (AIA)
- Structural Engineers Association of Texas (SEAoT)
- National Electrical Contractors Association (NECA)
- Greater San Antonio Builders Association (GSABA)
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- Building Owners and Managers Association (BOMA SA)
- Plumbing-Heating-Cooling Contractors (PHCC)
- Independent Electrical Contractors (IEC)
- Professional Engineers in Private Practice (PEPP)
- Society of Fire Protection Engineers (SFPE)
- San Antonio Apartment Association (SAAA)
- Sierra Club
- CPS Energy
- San Antonio Water System (SAWS)
- Bexar County
- School Districts

Thank  
you!

# ADMINISTRATIVE AMENDMENTS

## Chapter 10



ARTICLE/SECTION	ACTION	PROPOSED AMENDMENT
<b>Sec. 10-6 (o) - Permits</b>	Change	<ul style="list-style-type: none"><li>• Adds requirement for construction activities to comply with the noise ordinance</li></ul>
<b>Sec. 10-8 - Submittal documents</b>	Change	<ul style="list-style-type: none"><li>• Change to indicate electronic submittals instead of hard copies</li></ul>

# 2021 IBC – BUILDING

## *Significant Changes*



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**Defines and regulates** puzzle rooms (escape rooms), shipping containers and mechanical-access enclosed parking garages.

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**Expands** the use of Type IV construction (heavy timber) - tall wood buildings

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**Adds** flexibility for rooftop canopies and luminated egress paths for high rises

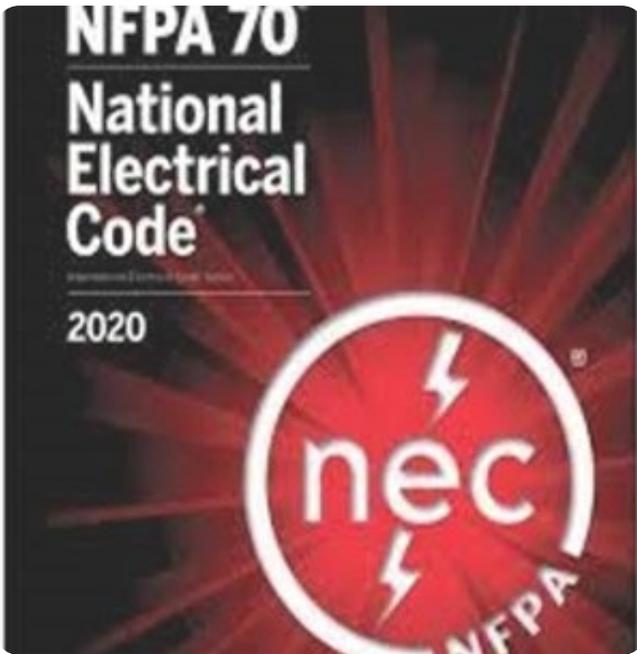
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**IBC**<sup>®</sup>

INTERNATIONAL  
BUILDING  
CODE<sup>®</sup>

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# 2020 NFPA – ELECTRICAL

## *Significant Changes*

**Improves** electrical safety for emergency responders at 1- & 2-family dwellings

**Adds** flexibility to the location of existing upgraded boxes and the use of wiring sizes and types

**Expands** ground fault and arc fault protections areas

**Adds** surge protection for 1- & 2-family dwellings

# 2021 IPC – PLUMBING

*Significant Changes*

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**Adds** allowance for multiple-user toilet facilities to serve all genders

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**Adds** alternative – Rainwater Harvesting Systems (CSA B805/ICC 805)

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**Adds** requirements for testing existing homes for lead (SAWS requirement)

# IPC

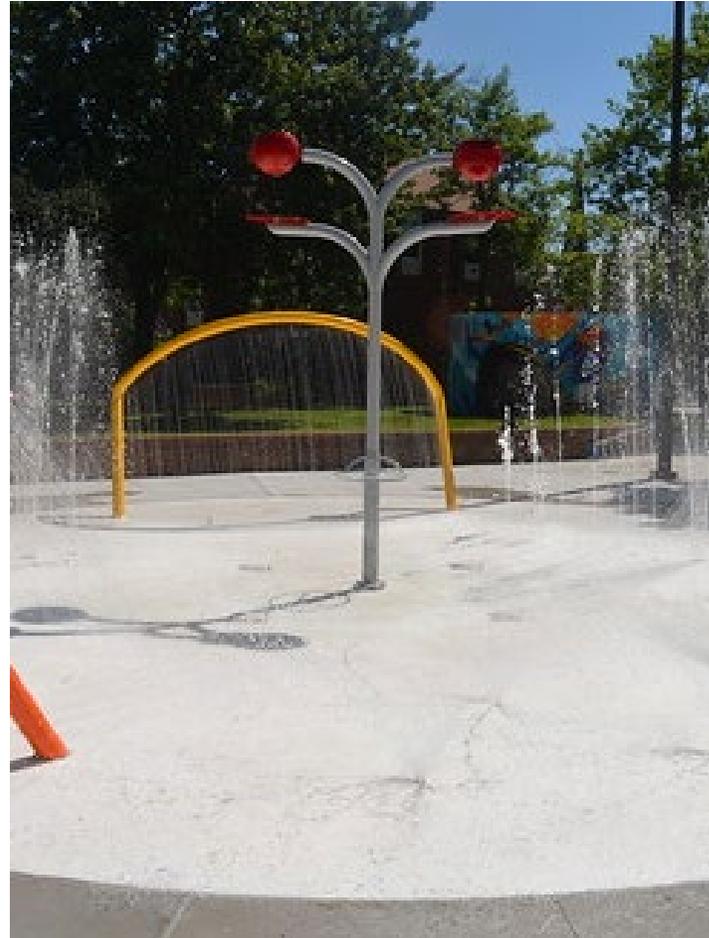
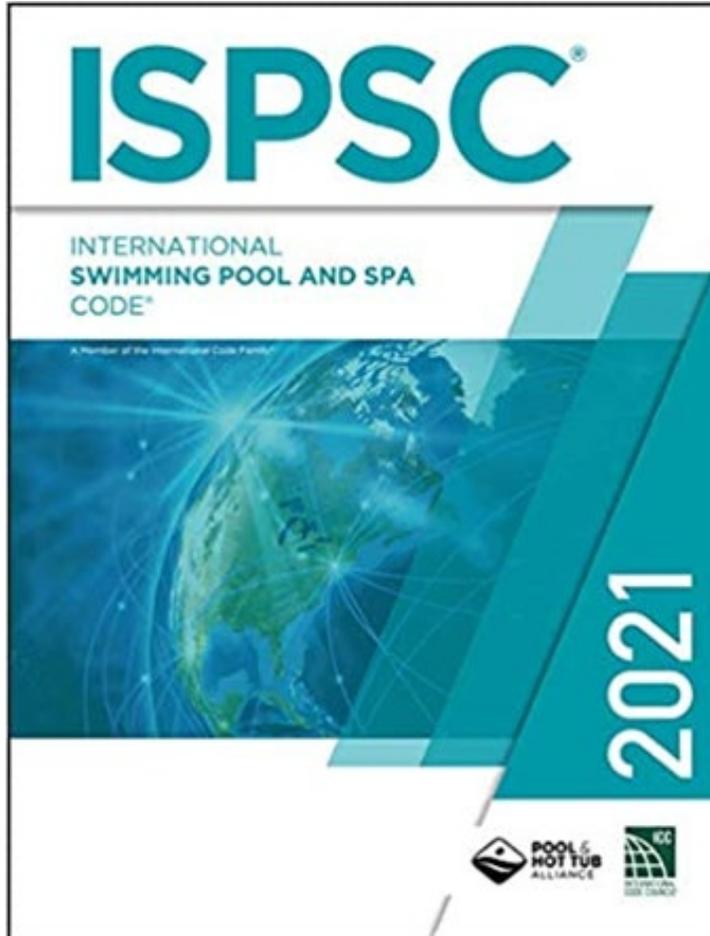
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PLUMBING  
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# 2021 ISPSC – SWIMMING POOL & SPA

## *Significant Changes*



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**Adds** design and safety requirements for splash pads

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**Creates** requirements for construction fencing and barriers

# IFC<sup>®</sup>

INTERNATIONAL  
**FIRE**  
CODE<sup>®</sup>

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# 2021 IFC – FIRE CODE

## *Significant Changes*

**Adds** fire systems requirements for certain occupancies (sprinklers for open garages, alarms for self storage facilities)

**Refines** requirements for Energy Storage Systems (ESS) and storage of distilled spirits and wines

**Expands** provisions for construction fire safety

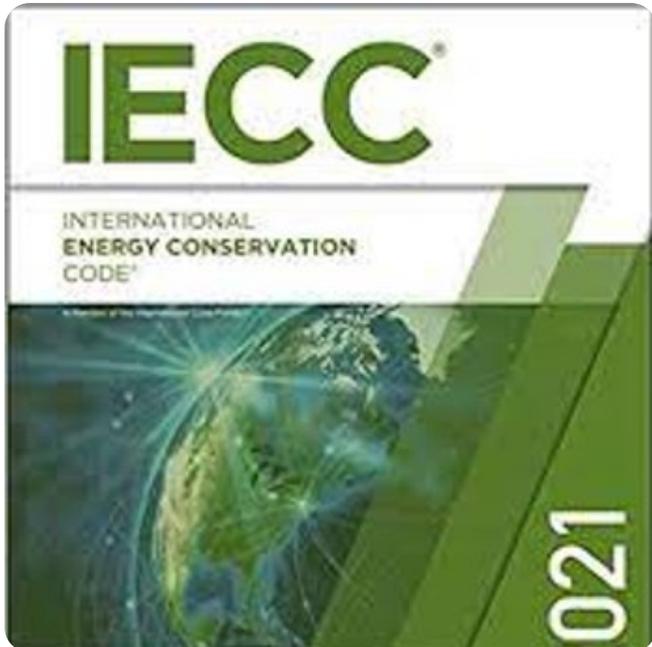


# 2021 IECC – ENERGY CONSERVATION

*Significant Changes - Commercial*

**Adds** requirement for EV capable (3%)

**Adds** energy monitoring (100k sq.ft.)



**Adds** requirements for lighting controls in parking garages

**Increases** number of additional efficiency options

# 2021 IECC – ENERGY CONSERVATION

*Significant Changes - Residential*

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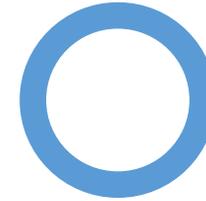
**Increases** flexibility permitting trade-offs against other features of the home

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**Maintains** the current ceiling insulation requirements (R38)

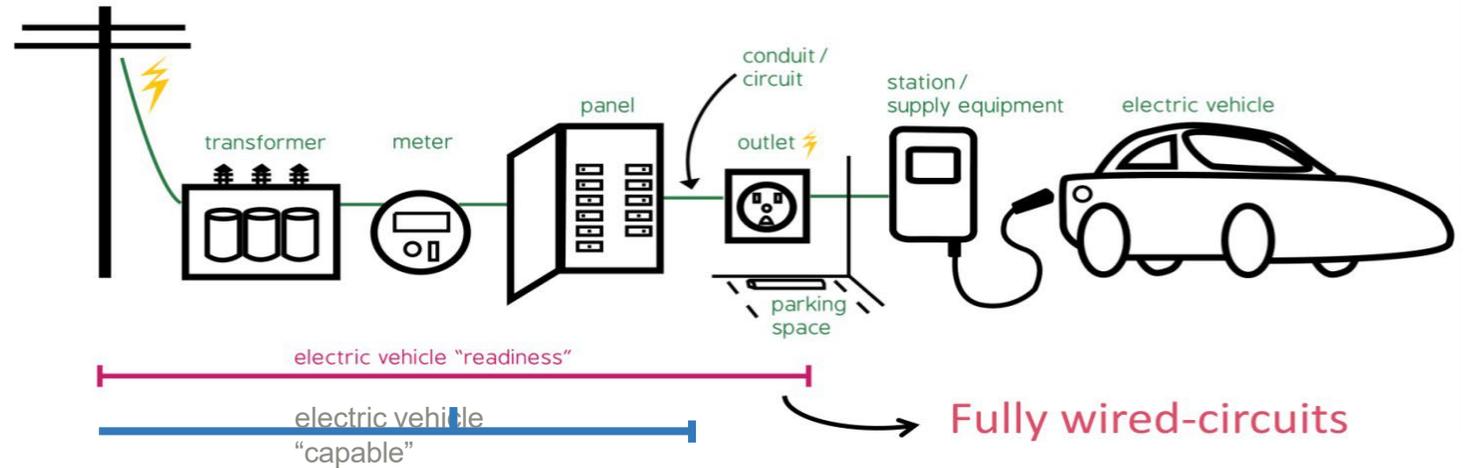
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**Adds** requirements for EV and PV capable



# EV READY FOR NEW CONSTRUCTION

Charge Level	Outlet	Voltage	Hours to 100 miles
Level 1		120 Volt (AC)	18 hours
Level 2		240 Volt (AC)	4 hours
DC Fast Charge		50 kW-250 kW (DC)	5-35 minutes



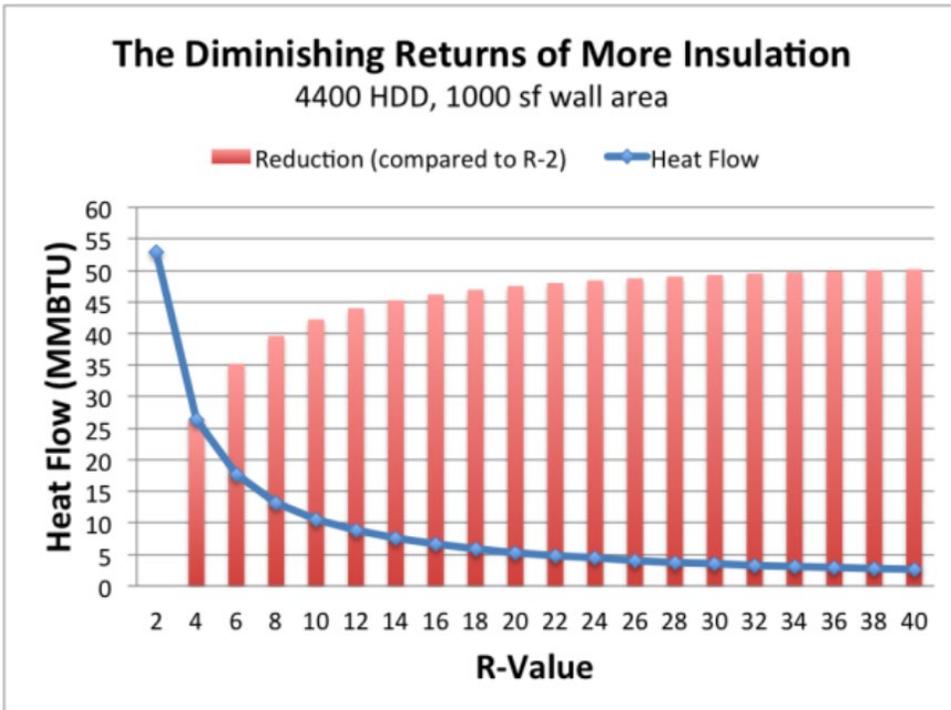
# SOLAR-CAPABLE FOR RESIDENTIAL HOMES

- Control panel for residential needs reserved space in main electrical service
  - Allows installation of dual pole circuit breaker for future installation
  - Required to be labeled “PV Use”
- Eliminates need to replace existing panel if there is no available slot when adding solar in future



# HIGHLIGHT FROM OCT. 31 PCDC

## – INCREASE IN RESIDENTIAL CEILING INSULATION



COST TO INCREASE CEILING INSULATION									
Component †	Unit	Material	Labor	Equip	Total	w/O&P	Quantity	Cost	
R-38 attic insulation, blown fg	SF	0.69	0.61	0.36	1.66	2.14	(1,875)	(4,013)	
R-49 attic insulation, blown fg	SF	0.91	0.76	0.45	2.12	2.73	1,875	5,119	
<b>Total to Builder</b>								<b>1,106</b>	
<b>Total to Consumer</b>								<b>1,366</b>	

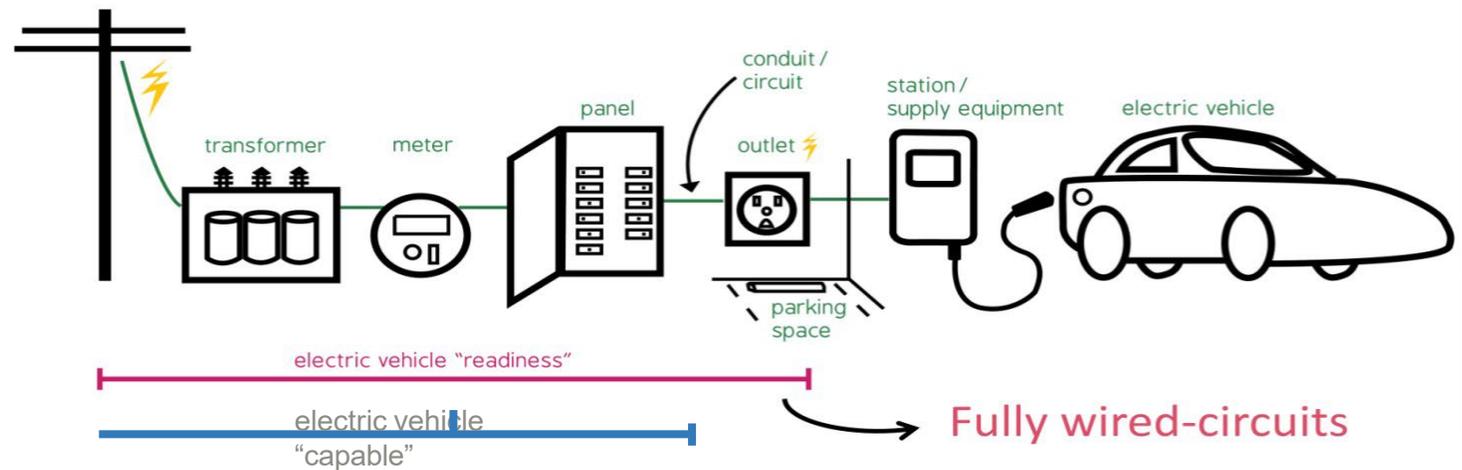
Reference House Component	Area (SF)
First floor conditioned floor area (CFA)	1,875
Second floor CFA	625
<b>Total CFA (without conditioned basement)</b>	<b>2,500</b>

- Cellulose insulation from **R-38 to R-49** is an additional 3” of insulation
- The analysis does not address any potential costs associated with raised-heel trusses.

# HIGHLIGHT FROM OCT. 31 PCDC – EV READY FOR NEW CONSTRUCTION

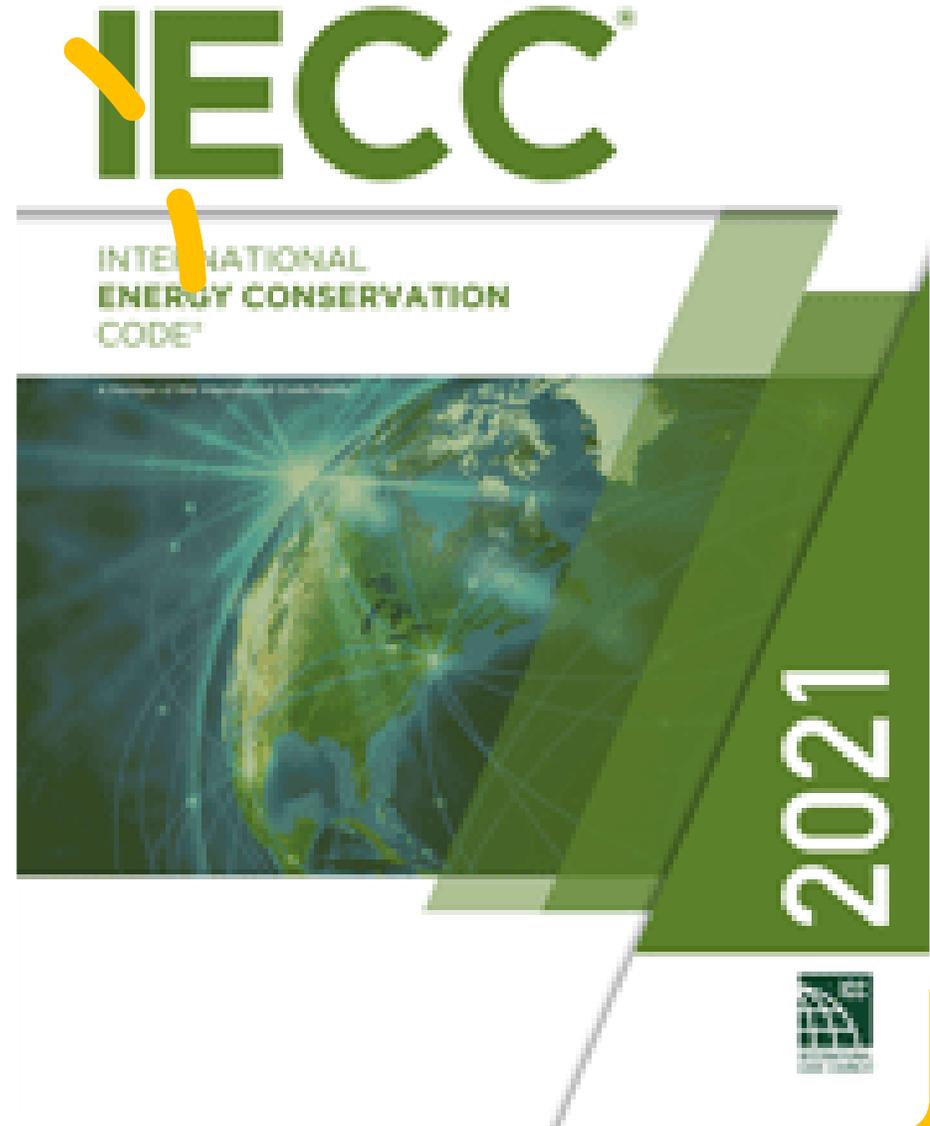
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Level 1		120 Volt (AC)	18 hours
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DC Fast Charge		50 kW-250 kW (DC)	5-35 minutes

- Costs for homebuyer:
- ~ \$1,500.00 to \$2,000 for homes with adequate power reserves
- Additional \$5,000 if new power demand load exceeds a 200-amp panel



# PCDC RECOMMENDED AMENDMENTS

- Level 2 chargers in all new homes rather than Level 1
- R49 ceiling insulation (min) for homes rather than R38
- Min 5% EV Capable spaces in commercial projects rather than 3%



# TIMELINE



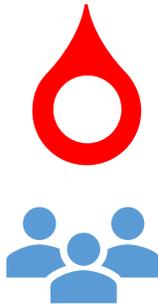
**Sept./Oct. 2022**

Planning and  
Community  
Development  
Committee



**Feb. 2023**

New codes take  
effect after Council  
approval



**Nov. 2022**

Propose  
amendments to City  
Council for  
consideration and  
approval



# RECOMMENDATION

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- Staff recommends approval of 2021 ICC family of codes and 2020 National Electrical Code with amendments as recommended by BRFC AAB
  - Council to choose proposed amendments from PCDC related to Energy Code



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