

ICC 2021 UPDATE

City Council - Item 12

11.10.2022

Presented by:
Michael Shannon PE, CBO - Director



**DEVELOPMENT
SERVICES**

2021

2021 BUILDING
RELATED CODES

CODE UPDATES

DEVELOPMENT SERVICES
DEPARTMENT



**DEVELOPMENT
SERVICES**

OVERVIEW

- 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



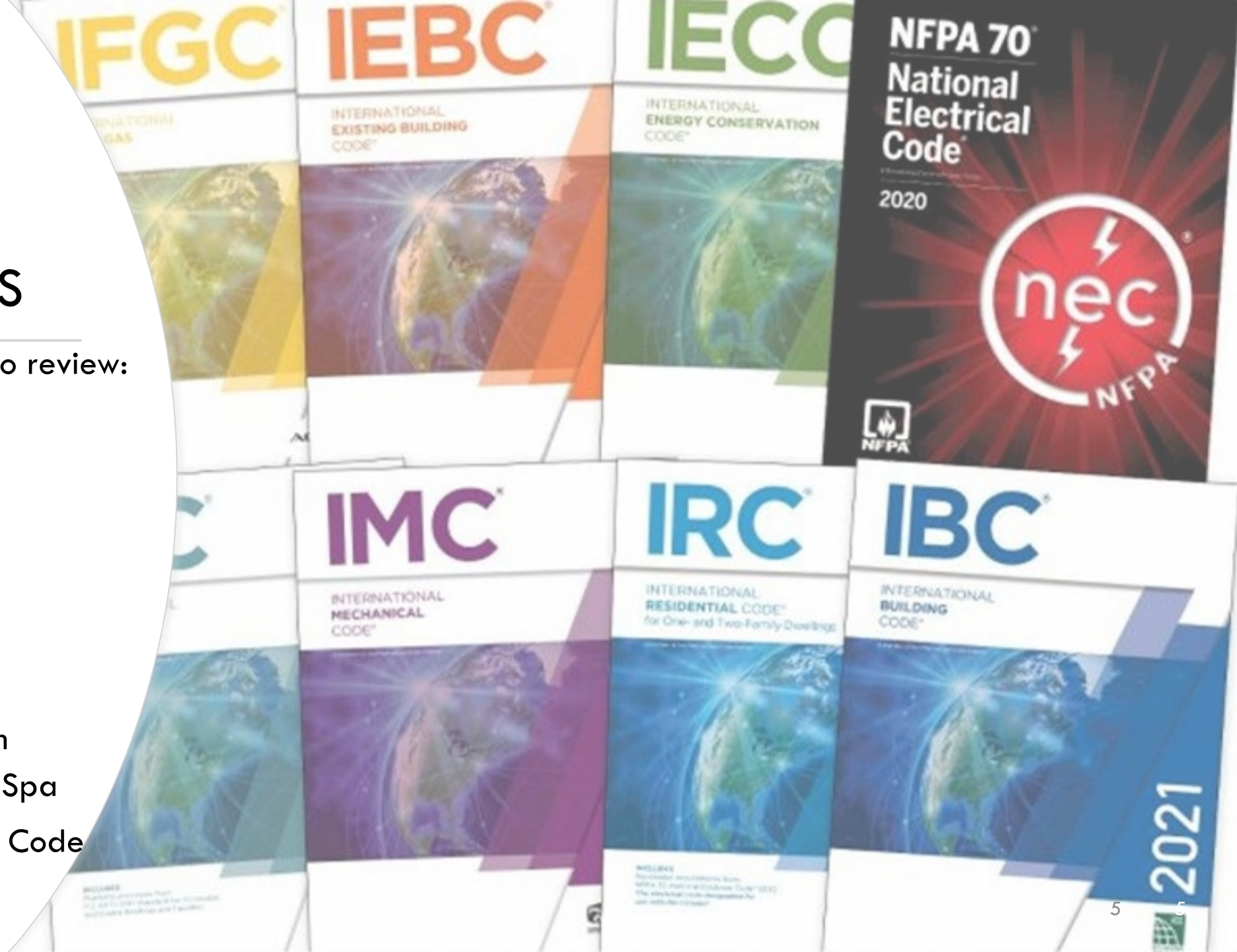
BUILDING-RELATED AND FIRE CODES APPEALS AND ADVISORY BOARD POSITIONS

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





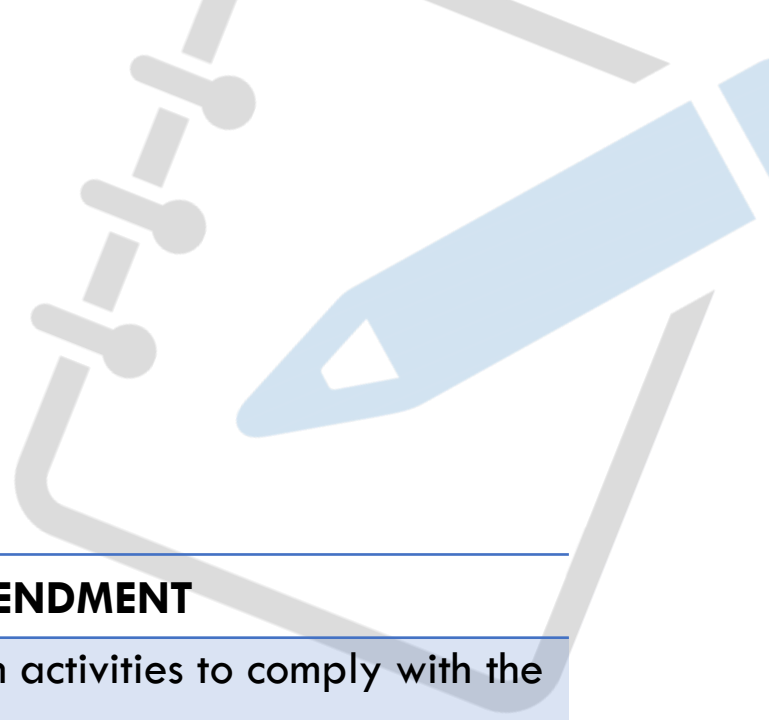
COMMITTEE MEMBERS & STAKEHOLDERS

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

2021 IBC – BUILDING

Significant Changes



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

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

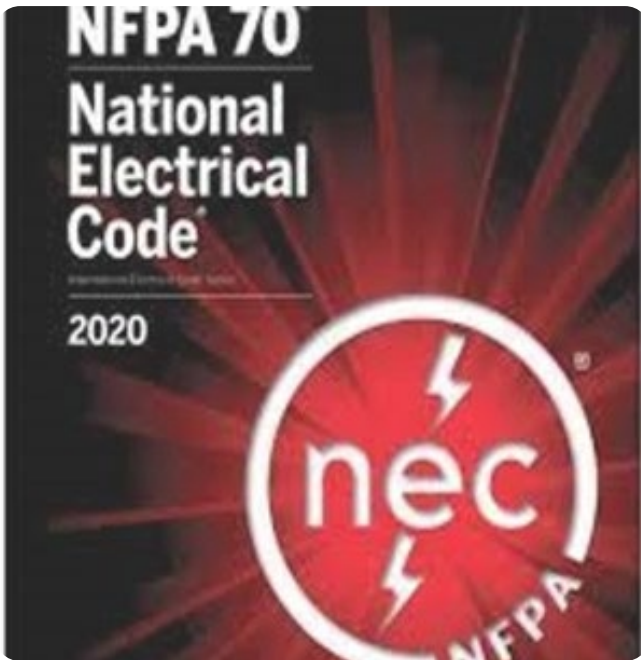
Adds flexibility for rooftop canopies and luminated egress paths for high rises

IBC®

INTERNATIONAL
BUILDING
CODE®

A Member of the International Code Family





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

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

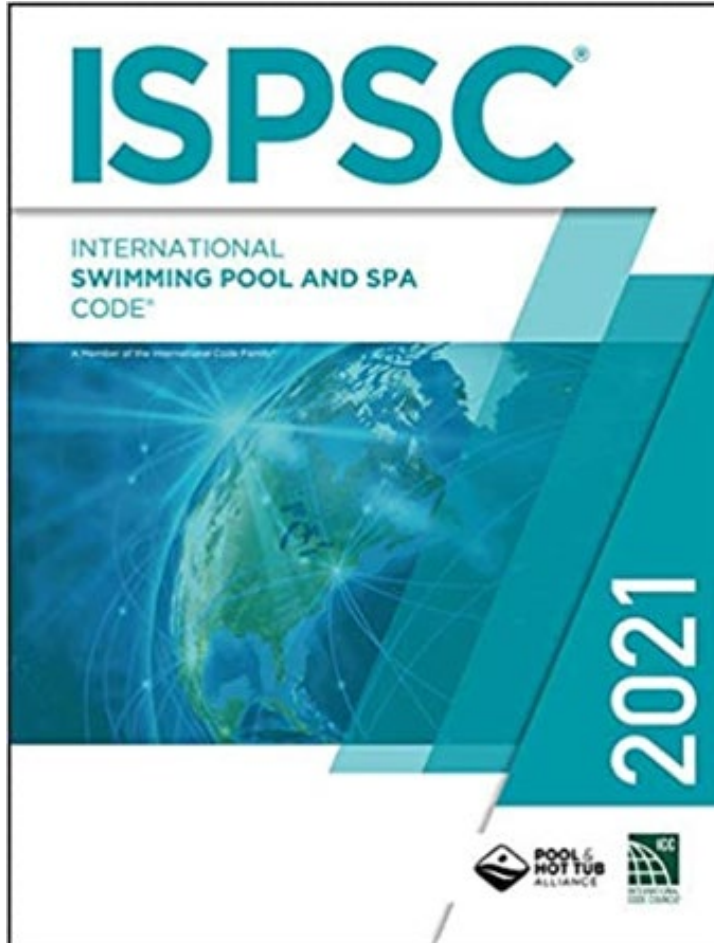
Adds alternative – Rainwater Harvesting Systems (CSA B805/ICC 805)

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



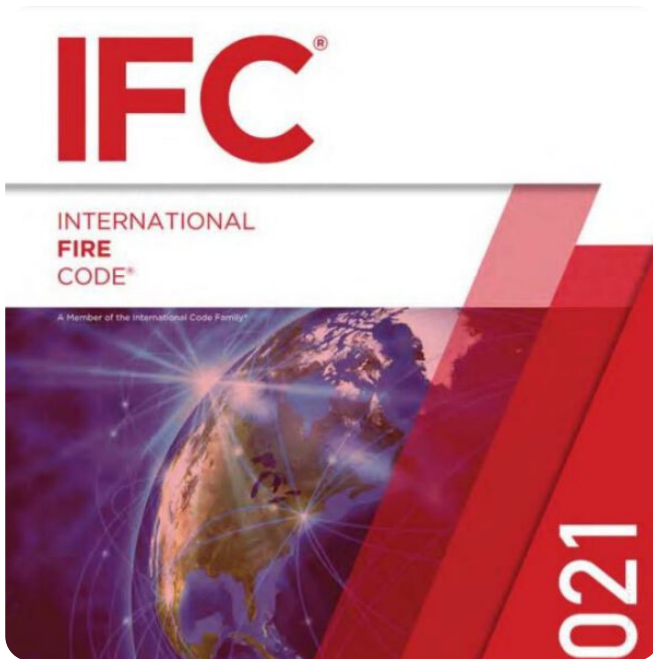
2021 ISPSC – SWIMMING POOL & SPA

Significant Changes



Adds design and safety requirements for splash pads

Creates requirements for construction fencing and barriers



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



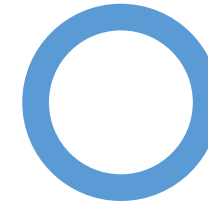
2021 IECC – ENERGY CONSERVATION

Significant Changes - Residential




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

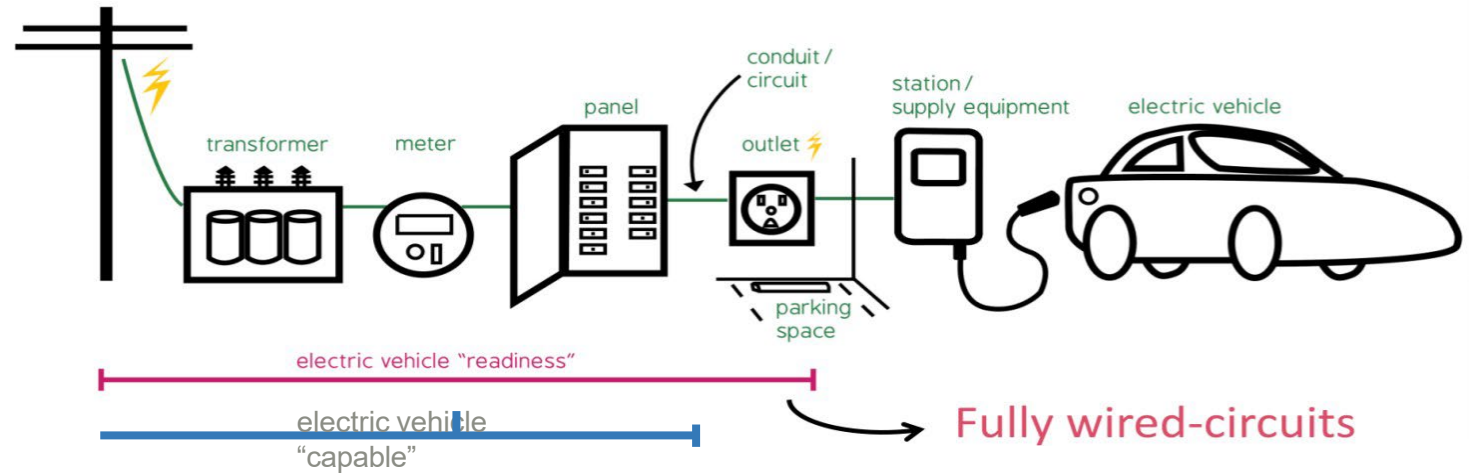
Maintains the current ceiling insulation requirements (R38)

Adds requirements for EV and PV capable



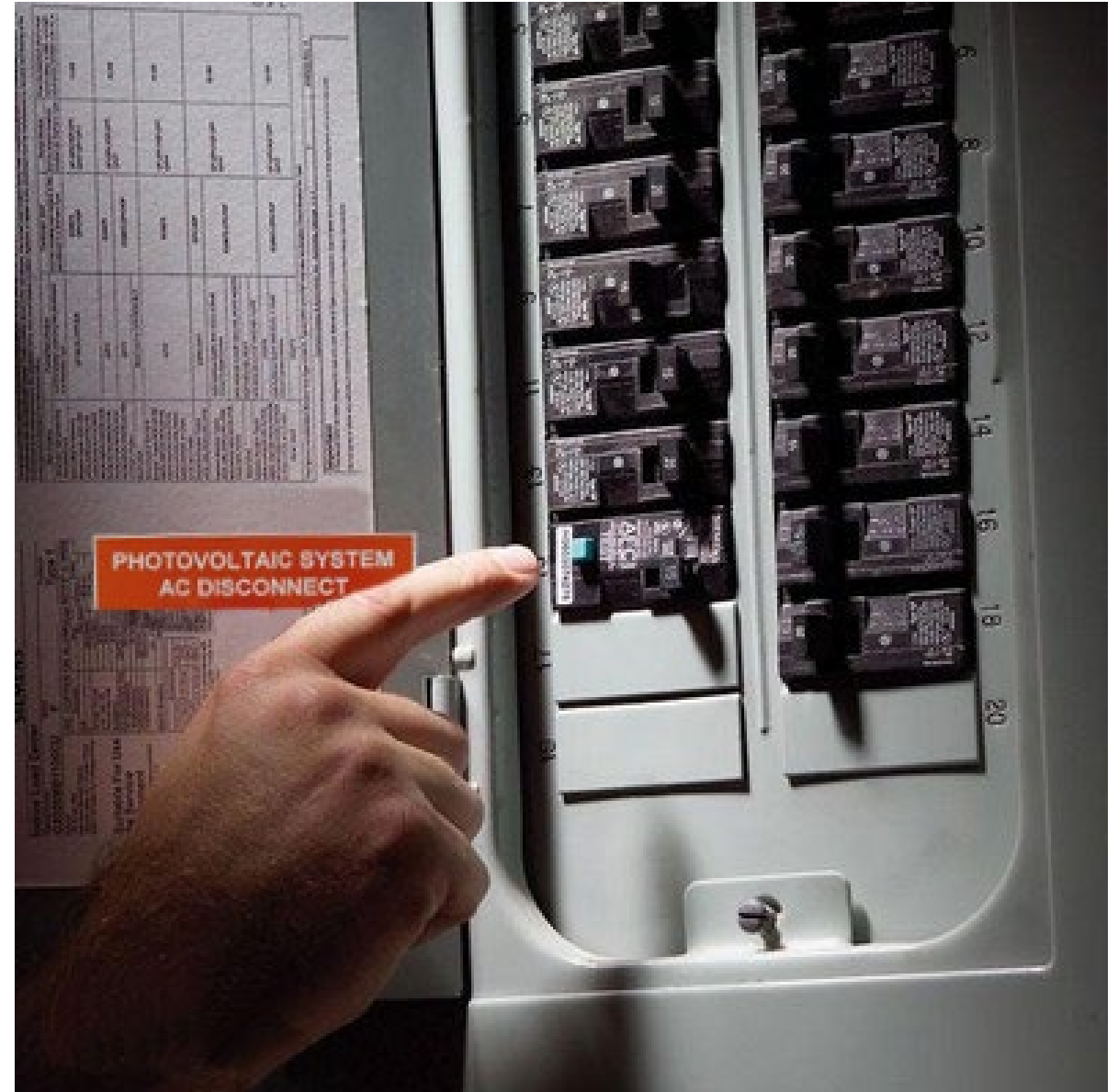
EV READY FOR NEW CONSTRUCTION

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



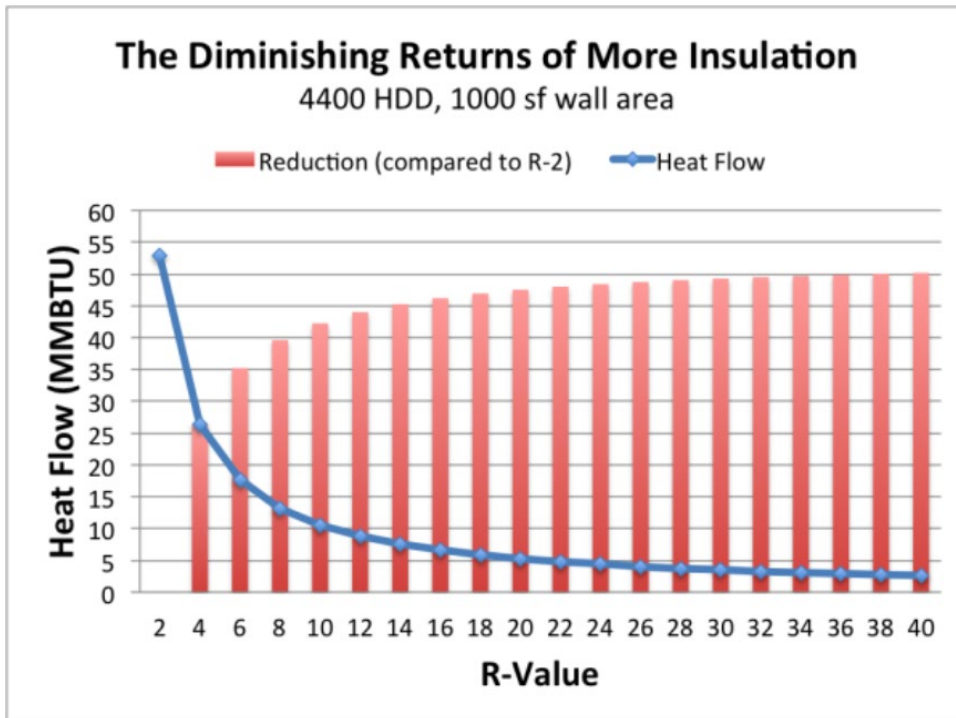
SOLAR-CAPABLE FOR RESIDENTIAL HOMES

- 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
Total to Builder								1,106
Total to Consumer								1,366

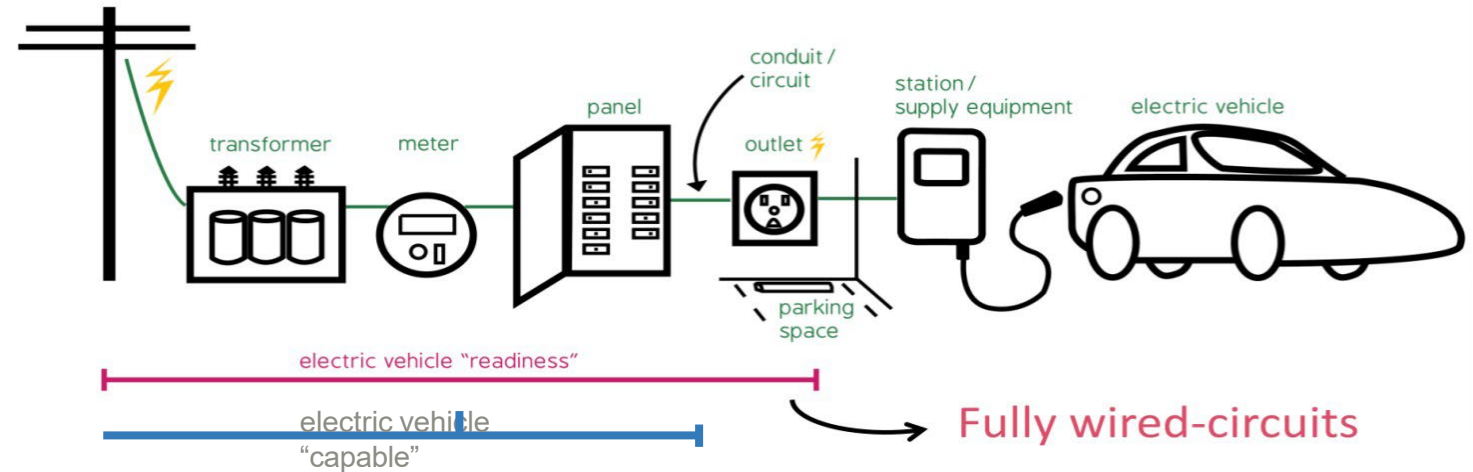
Reference House Component	Area (SF)
First floor conditioned floor area (CFA)	1,875
Second floor CFA	625
Total CFA (without conditioned basement)	2,500

- 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

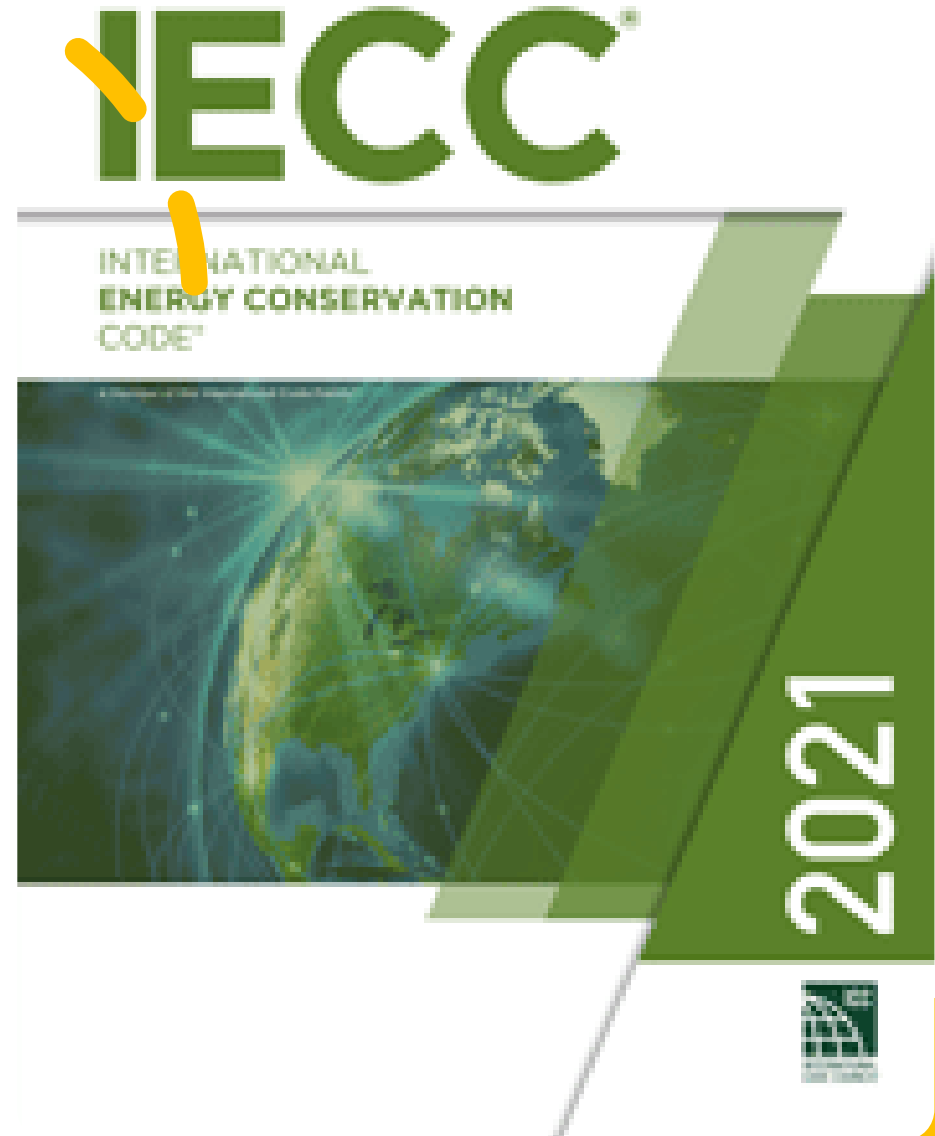
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Level 1		120 Volt (AC)	18 hours
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DC Fast Charge		50 kW- 250 kW (DC)	5-35 minutes

- 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



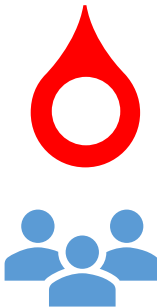
Sept./Oct. 2022

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

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

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