



2022 Building & Fire Code Adoption Summary

(Including Residential, Energy, Mechanical, Plumbing, Fuel Gas, and Green Codes)

Community Planning and Development

In partnership with:

The Office of Climate Action, Sustainability, and Resiliency and

The Denver Fire Department

What's in this Slide Deck

This slide deck presents a brief **summary** of the public process and key changes in the 2022 Denver Building, Fire, Energy and other adopted codes.

For a record of meeting minutes, recordings, and other materials, please visit the [code adoption webpage](#).

Timeline

- May - June 2021 – Working group meetings begin for the International Energy Conservation Code (IECC) & Denver Green Code (DGC)
- July - December 2021 – Public, industry, and city staff draft and propose possible amendments to be considered in the 2022 code
- January - July 2022 – Formal code committee hearings take place
- August – November – Final code language drafts reviewed and prepared
- Winter 2022/2023 – Legislative review and formal adoption

Formal Code Committees

Composed of a broad range of subject matter experts including, but not limited to:

- Architects
- Engineers
- Contractors
- Energy Modelers
- Denver Building Owners and Managers Association (BOMA)
- Fire & Life Safety Consultants
- Denver Metro Homebuilders Association (HBA)
- Hospitality industry
- Building operators/engineers
- Denver Water
- Elevator industry
- Habitat for Humanity
- Xcel Energy
- Solar industry
- National Renewable Energy Laboratory (NREL)
- City staff from CPD, DFD, CASR, DHA, DOTI, HRCP, and Parks

Energy & Climate Action Focus

- Inaugural Working Group Sessions for Energy Code and Green Code
- Over 60 Formal Energy Code Proposals from the Public and City
- In-Depth Real-Time Tracking of Impacts of Each Proposal Against Goals
- Substantial Progress Toward Comprehensive Plan 2040 and Net Zero Energy Goals
- Intentional Consideration of Cost and Time Impacts of Changes

Slides 7-17: Key Changes to Note*

- Building Code & Existing Building Code
- Residential Code
- Fire Code
- Mechanical, Plumbing, & Fuel Gas Codes
- Energy Code
- Green Code

* This is not an exhaustive list of amendments. Visit www.denvergov.org/buildingcode to view the entire 2022 code.

Denver Commercial Building Code (DCBC) & Denver Existing Building Code (DEBC)

1. Advancing a 2024 code early regarding mass timber ceilings to allow greater use of wood construction, which is more affordable and more sustainable
2. Universal parking spaces (which are sized to accommodate vehicles for people living with disabilities) at electric vehicle charging stations in addition to accessible spaces
3. Classifying distilleries and alcohol storage facilities as a high-hazard Group H occupancy if there are large quantities of hazardous material
4. Clarifying that IRC buildings are a Group R-3 occupancy in the IEBC

Denver Residential Code (DRC)

1. New requirements for Low VOC materials (paint, carpet, etc.) for improved indoor air quality
2. Adding Appendix AJ for repair, alteration, addition, and change of occupancy of *existing* IRC buildings
 - Better addresses coordination between Landmark and IRC requirements
3. Clarifying what is and is-not a “complete independent dwelling unit” for the purpose of applying IRC requirements for fire and life safety provisions
4. Updated IRC definition to align with the “Group Living” zoning code amendments adopted in 2021
5. Clarifying regulations for accessory structures with living spaces to ensure fire and life safety
6. New, prescriptive code language to allow for quick design specification for foundations for sheds, greenhouses, and other storage accessory structures, saving time and cost for engineering when a design professional is not needed

Denver Fire Code

1. (105.6.21) Acknowledge & formalize phased occupancy of buildings (new policy)
2. (Ch. 5) Integrate DOTI Vision Zero design efforts for fire access roadways (radii & traffic calming)
3. (510) Radio Enhancement System reconcile long time requirements with national approach (e.g., UL listings of equipment)
4. (903 & 907) Elevator emergency functions regarding Fire Alarm technicians no longer accessing hoistways for service - safety for technicians
5. (915) CO reconcile long time requirements with national approach
6. (920.23) Require maps showing elevator power disconnects throughout building (scoped to elevator contractor) to assist fire crews responding to elevator entrapments

Denver Mechanical, Plumbing, and Fuel Gas Codes (DMC, DPC, DFGC)

1. Updating mechanical ventilation requirements for R-2, R-3, & R-4 occupancies, which could encourage use of energy recovery units in dwelling units
2. Reducing maximum flow rates for plumbing fixtures to meet or exceed the EPA's Watersense requirements, which will reduce overall water consumption in Denver

Denver Energy Code (DEC)

1. Commercial Partial Electrification for Space Heating
2. Commercial Partial Electrification for Water Heating
3. Commercial pEUI Energy Modeling Metric
4. Commercial Appendix G Energy Modeling Metric
5. Commercial Appendix G Site Energy Metric
6. Commercial Prescriptive Path
7. Commercial Electric Vehicles Update
 - Aligns with national codes to reduce the % of spaces in multi-family buildings that are EV-capable from 80% to 40%. This reduces cost of compliance while still providing sufficient levels of future proofing for EV spots.



1-2: Aligned with Energize Denver



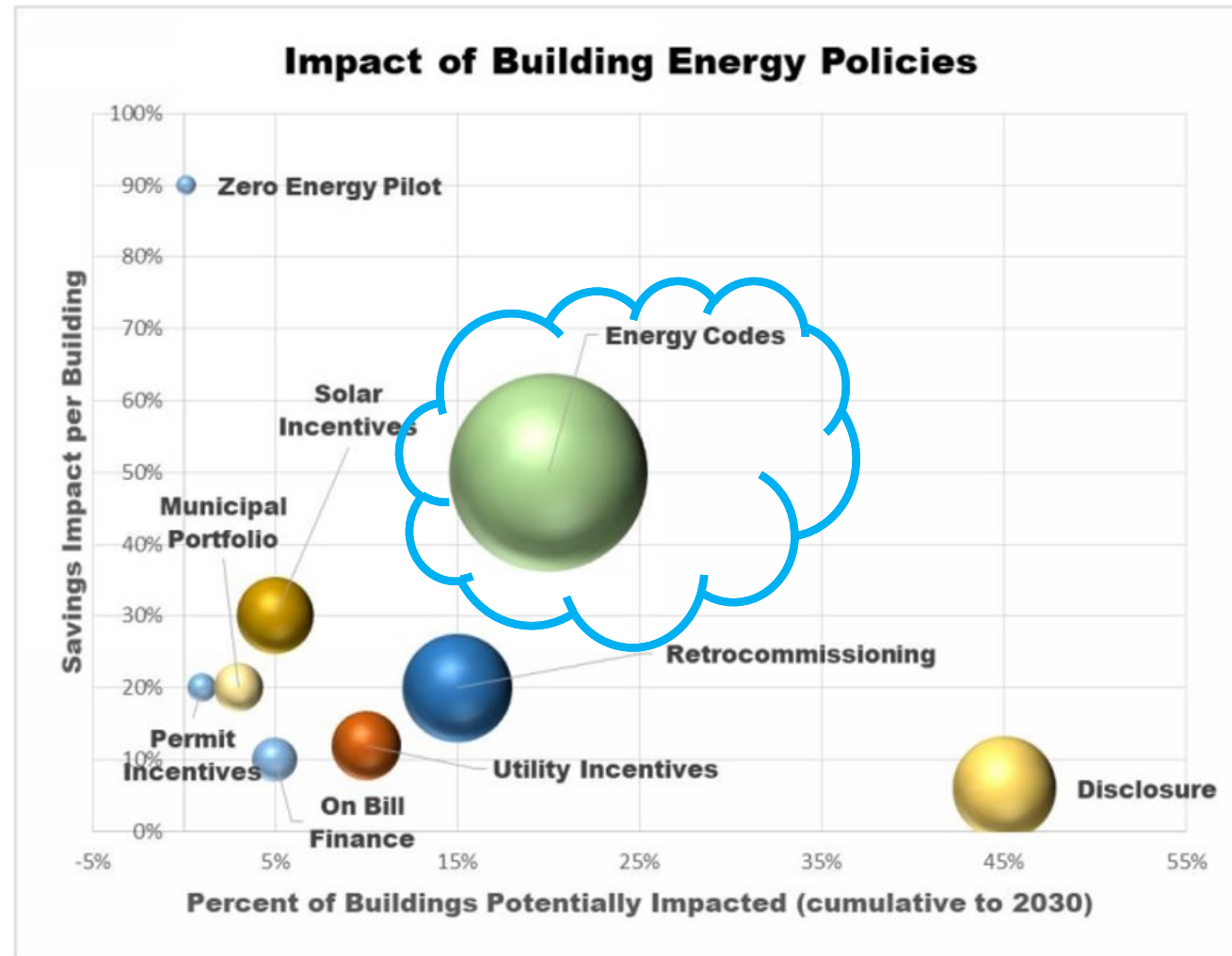
3-6: To aid electrification, ease of use, and align with the city's Comprehensive Plan 2040

Denver Energy Code, continued

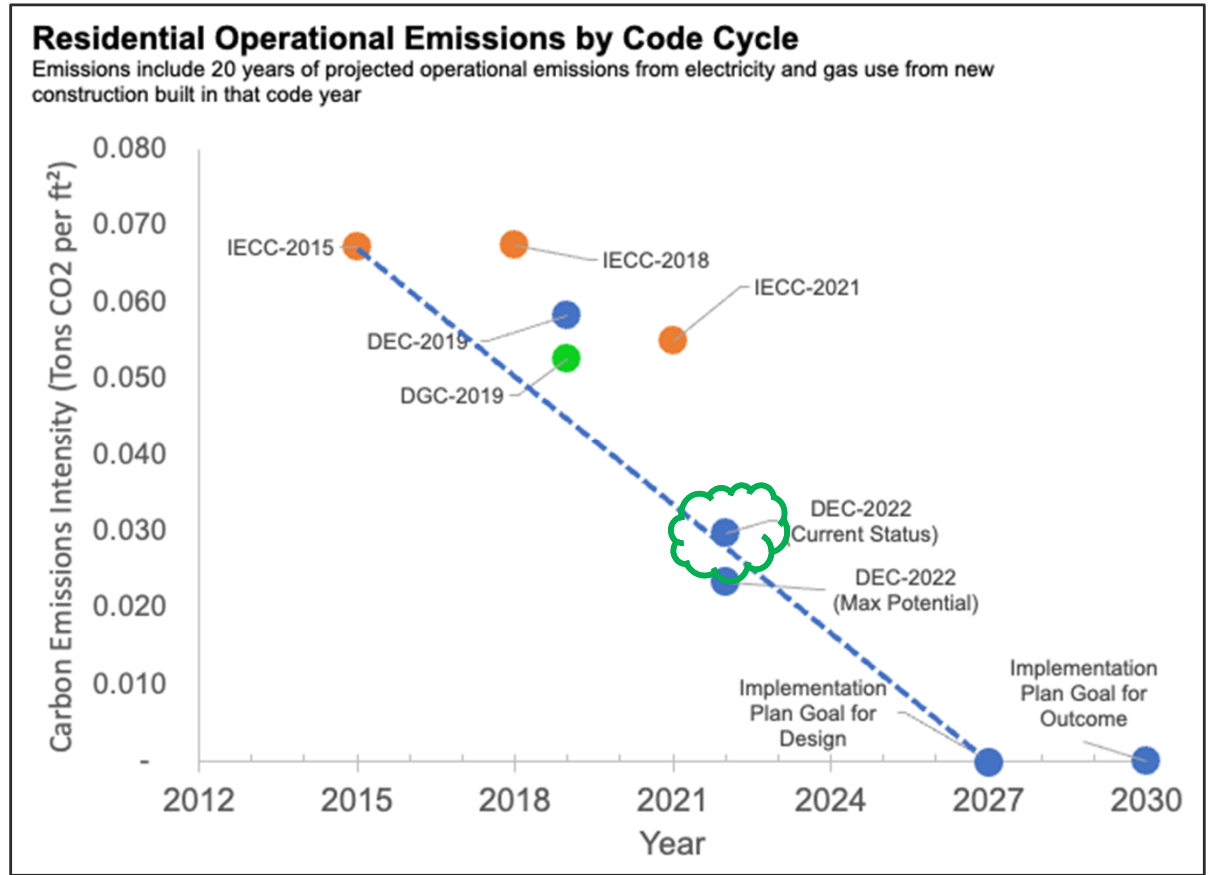
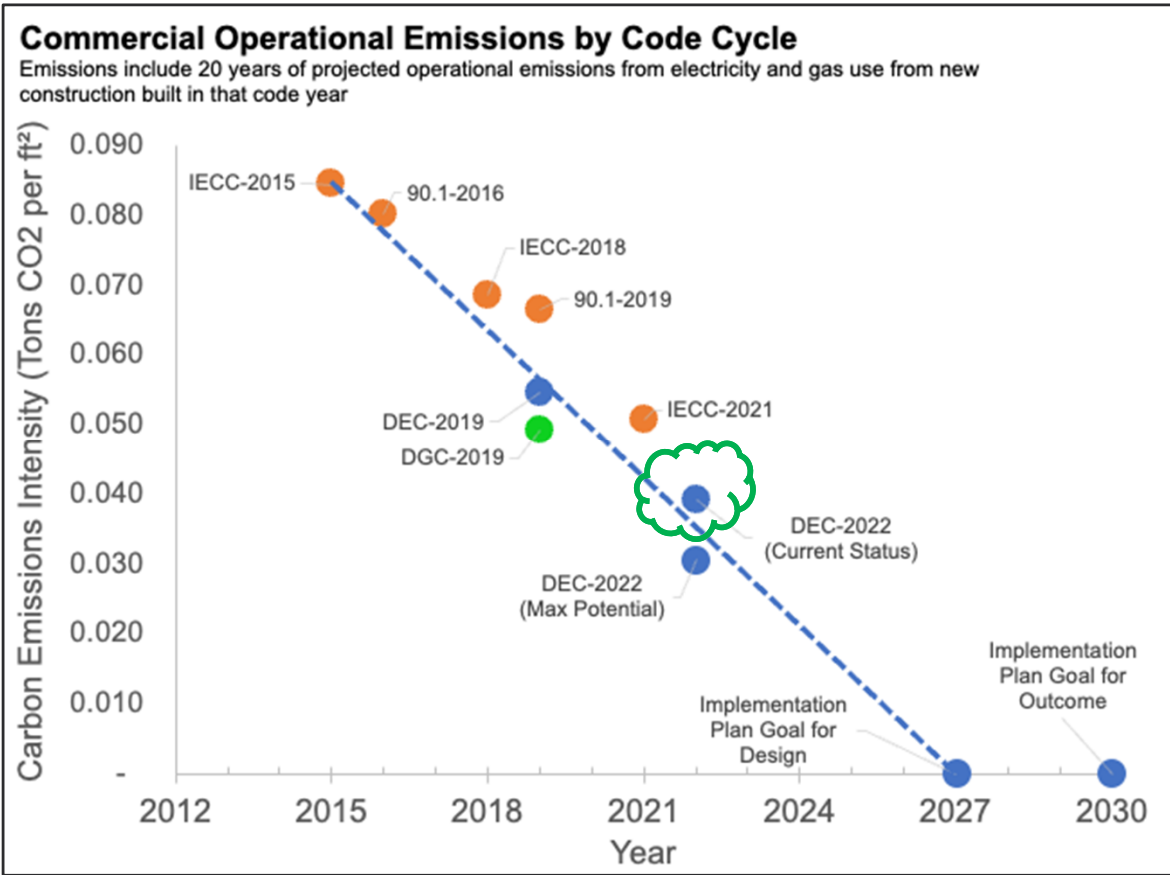
8. Residential Energy Modeling Metric: Aligns energy modeling to Denver's goals, allowing for easy calibration and incentivizes all-electric buildings
9. Residential Prescriptive Path: Incentivizes electrification by simplifying the code path for all-electric buildings. It provides flexibility for project teams to select their own credits.
10. Residential Minimum Renewables: Requires limited PV on homes (with *many* exceptions including: all-electric buildings, partial electrification of buildings, and for adding more efficiency in buildings)
11. Residential Electric Vehicles Update: Aligns language and definitions with national codes
12. Additional energy code amendments that advance the goals of Comprehensive Plan 2040 along with updates to coordinate with Energize Denver requirements

Energy Code – Why Code Changes?

- Revisions to energy codes offer the greatest opportunity for energy and cost savings for buildings when compared to a variety of other options.



Energy Code – Accomplishments



Denver Green Code (DGC)

- The DGC addresses both climate change and biodiversity loss through mitigation, adaptation, and resiliency.
- It was a voluntary code in the 2019 code cycle, introducing new approaches to building design and construction in Denver.
 - *Limited* provisions will become mandatory in this code cycle
- The DGC provides guidance for greener buildings through energy efficiency, resource conservation, sustainable materials, indoor environmental quality, water safety, site development, land use, and building performance.



Image courtesy of Colorado River District

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Denver Green Code Continued

- New in this code cycle:
 - *Limited*, mandatory use for all new commercial projects and major renovations
 - Projects can choose what code provisions they want to use – many options are available that will not increase development cost
 - Major renovations are those with > 50% addition or modification to the building area, or 100,000 ft², whichever is less.

- Key new amendments:
 - Ecological impact statement
 - Diverse, native and adapted, low water, pollinator supportive landscapes
 - Small site rainwater management; Embodied carbon limitations (concrete and steel)
 - Increased energy efficiency and storage, grid stability strategies, electrification
 - Deconstruction, reuse, recycling, composting, waste diversion
 - Outcome focused limits for resource use and indoor environmental quality thresholds

Comprehensive Plan 2040 Vision Elements



DGC – Limited Mandatory Use

**Table 101.4.1 - Limited Mandatory Use:
Quantity of Provisions Required**

		New Construction	<i>Major Renovations, Commercial</i>
Chapter 1	Scope and Administration: Ecological Impact Statement (EIS)	0	0
Chapter 2	Reserved	n/a	n/a
Chapter 3	Definitions	n/a	n/a
Chapter 4	Residential Energy [RE]	0	0
Chapter 5	Site Sustainability [SS]	4^a	2^{ab}
Chapter 6	Water Use Efficiency [WE]	1^a	0
Chapter 7	Commercial Energy [EE]	1^a	1^a
Chapter 8	Indoor Environmental Quality [EQ]	1^a	1^a
Chapter 9	Materials and Resources [MR]	3^a	1^a
Chapter 10	Construction and Plans for Operation [CX]	2^a	2^a

Transition & Implementation

- ~1/12/2023
 - All 2022 amendments become available for use in design
- 1/12/2023 - 5/1/2023
 - *Transition Period* when either the existing 2019 OR the 2022 codes can be used for design.
- 5/1/2023
 - Mandatory use of 2022 codes for design.
 - *Note: Limited exceptions are available for very large projects that cannot pivot to new codes during the transition period.*
- *3/1/2023 is the effective date for the Energize Denver Existing Buildings Ordinance provisions within the Energy Code.*

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Thank You!

Questions?

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