

NEW CONSTRUCTION DECISION TREE

UPDATED JANUARY 2024

Use this tool to quickly identify key decisions, map out options, and communicate clearly the chosen pathways that demonstrate Massachusetts energy code compliance.

HOW TO USE:

1. **START** with the main decision tree, existing or new construction

2. Consider **ONE USE** at a time, answering questions to

- **IDENTIFY** the code "branch"
- Navigate through the appropriate **CODE BRANCH** by establishing the path that represent your project

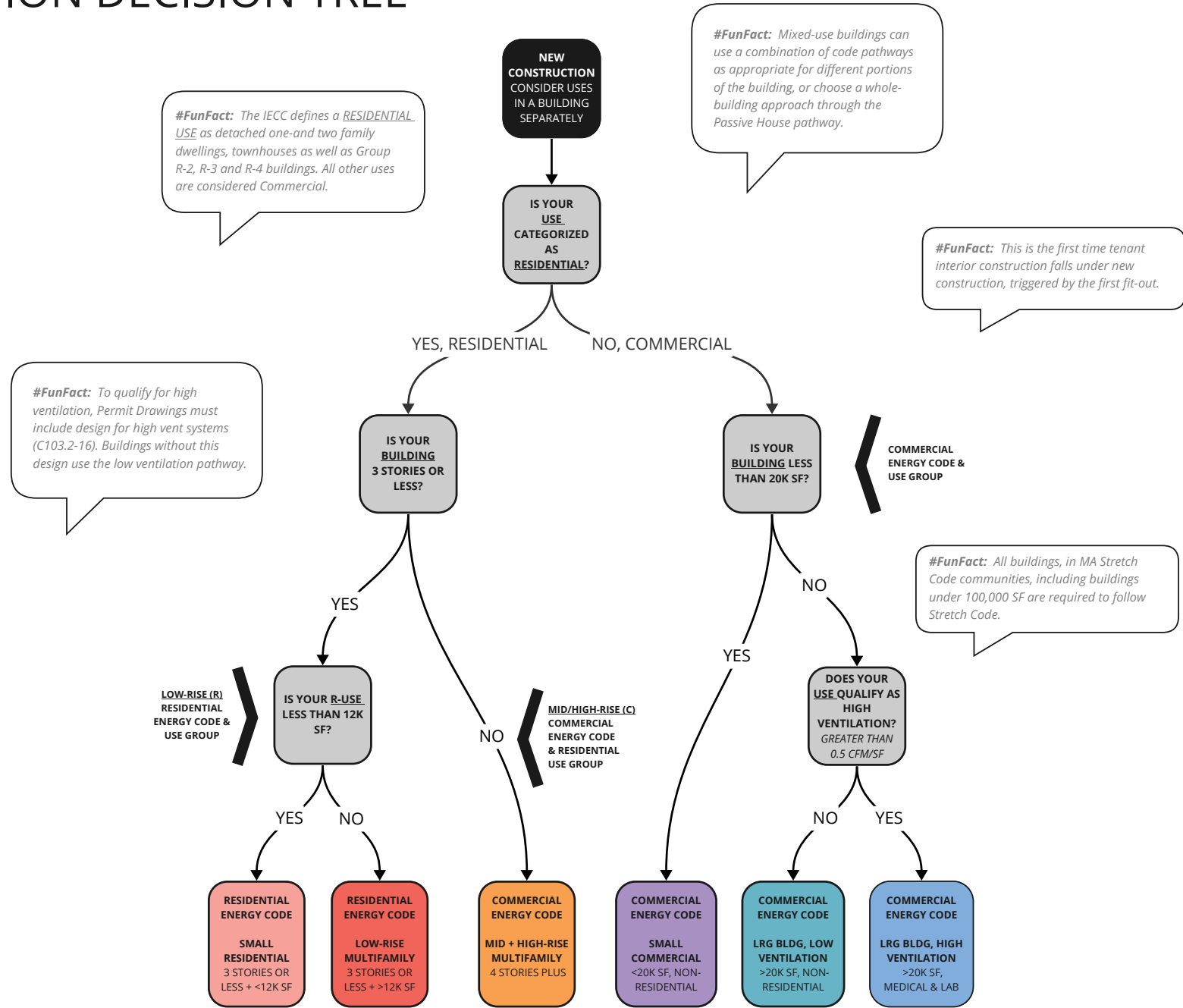
3. For **MIXED-USE BUILDINGS**, repeat the process for each use group

The branches do not contain all energy code requirements. Instead, it notes options or decisions which send you down a path. The path points to the relevant code section(s), detailing project requirements.

BE MINDFUL:

The International Energy Conservation Code (IECC) is a model energy code, which forms the basis for the Massachusetts energy codes. The first bucket, the **Base Energy Code**, is the minimum required energy code in Massachusetts. The second bucket, the **Stretch Code**, is a stricter option towns and cities have already voted to incorporate. The third bucket, the **Specialized Opt-in Code**, includes additional requirements in addition to the Base and Stretch Code and is available for municipal vote as of December 2022.

This effort to map out MA Energy Code compliance pathways does not account for impacts of other codes and ordinances that may apply to projects.



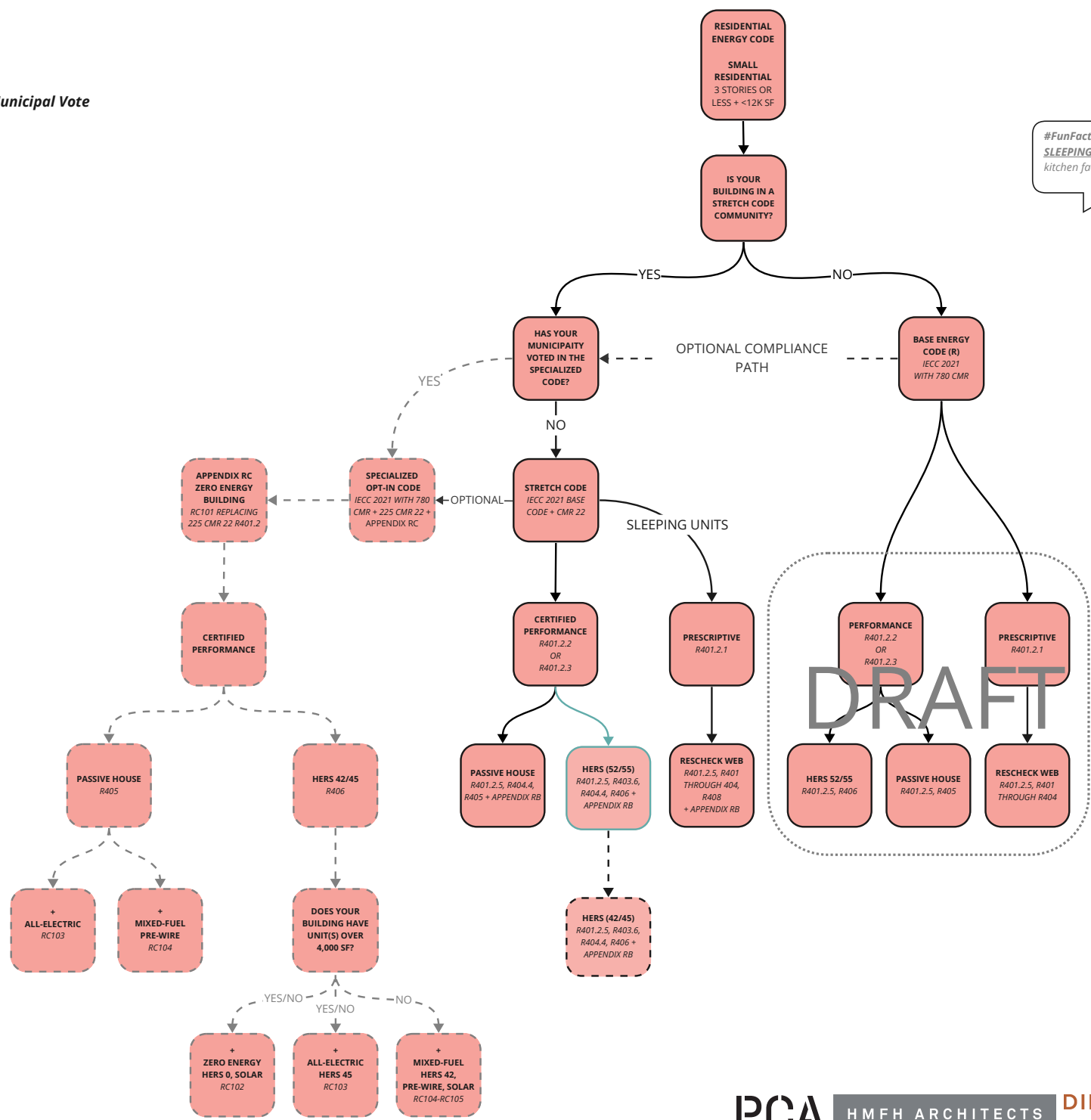
LOW-RISE RESIDENTIAL BRANCH: 3 STORIES OR LESS <12,000 SF

UPDATED FEBRUARY 2024

LEGEND

- ▶ 2023-2026
- - -▶ Effective After Municipal Vote
- ▶ Until 2024 Only
- - -▶ After July 2024

#FunFact: unlike a DWELLING UNIT, a SLEEPING UNIT has either sanitation or kitchen facilities but not both.



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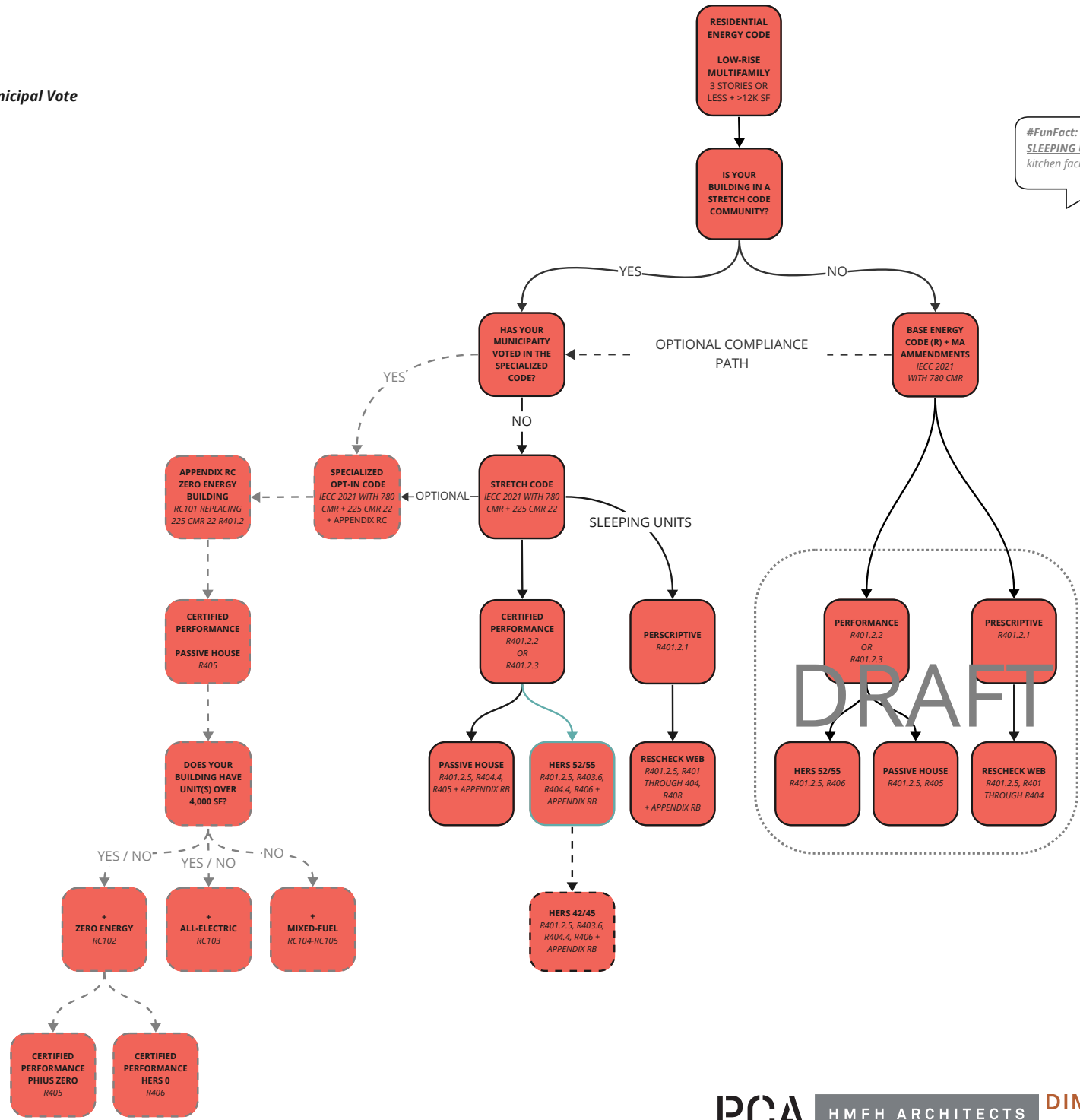
LOW-RISE RESIDENTIAL BRANCH: 3 STORIES OR LESS >12,000 SF

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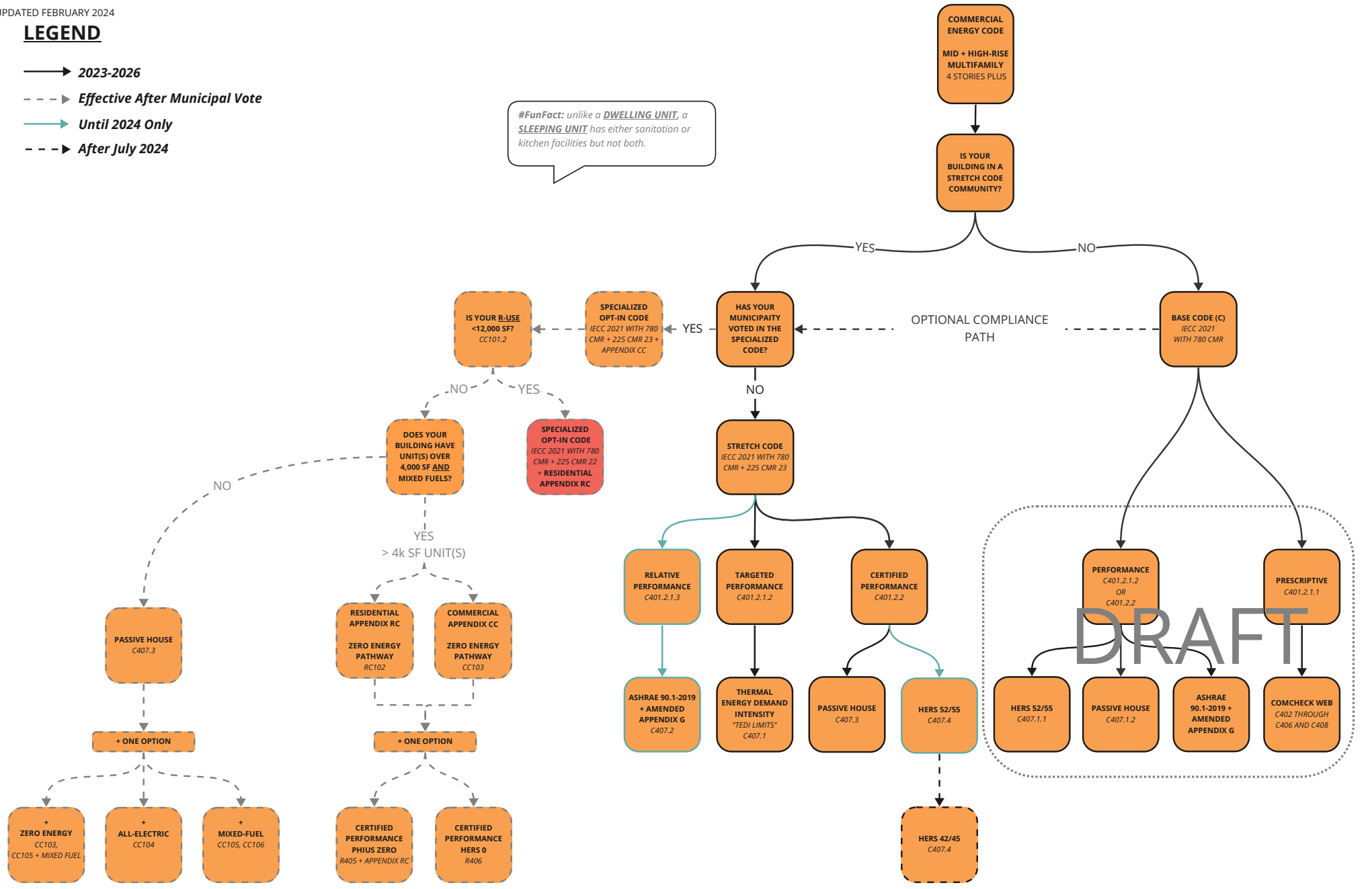
COMMERCIAL BRANCH: RESIDENTIAL 4 STORIES OR MORE

UPDATED FEBRUARY 2024

LEGEND

- 2023-2026
- - - -> Effective After Municipal Vote
- Until 2024 Only
- - - -> After July 2024

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COMMERCIAL BRANCH: <20,000 SF

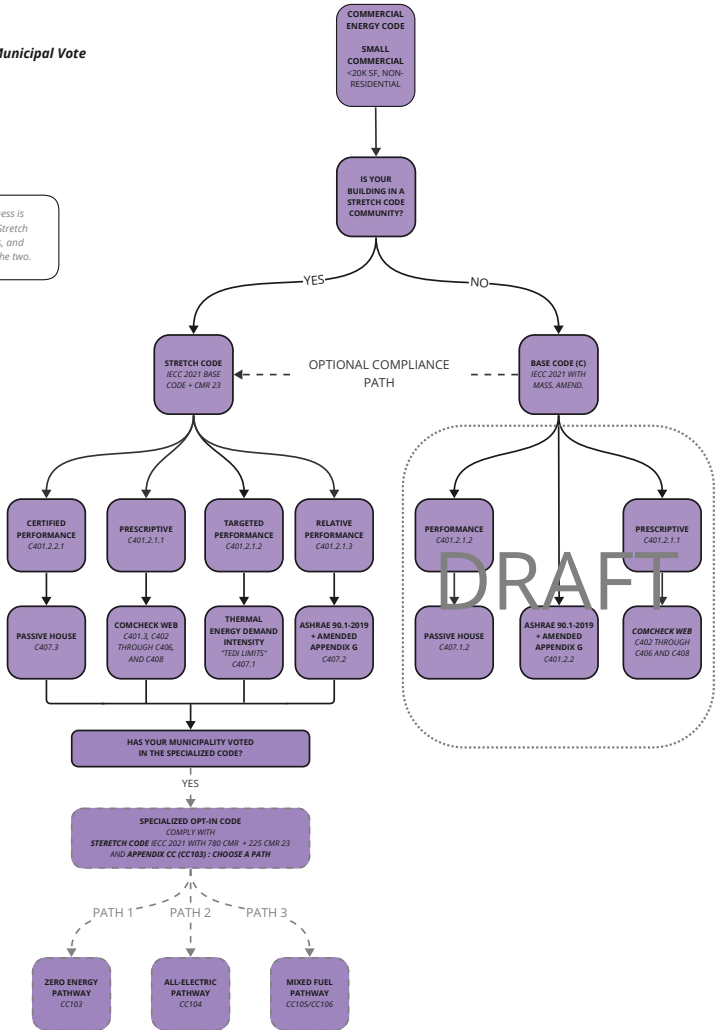
UPDATED JANUARY 2024

LEGEND

→ 2023-2026

- - - Effective After Municipal Vote

#FunFact: EV and PV readiness is required for all paths in the Stretch and Specialized Opt-in Codes, and requirements vary between the two.



COMMERCIAL BRANCH: LOW-VENTILATION >20,000 SF

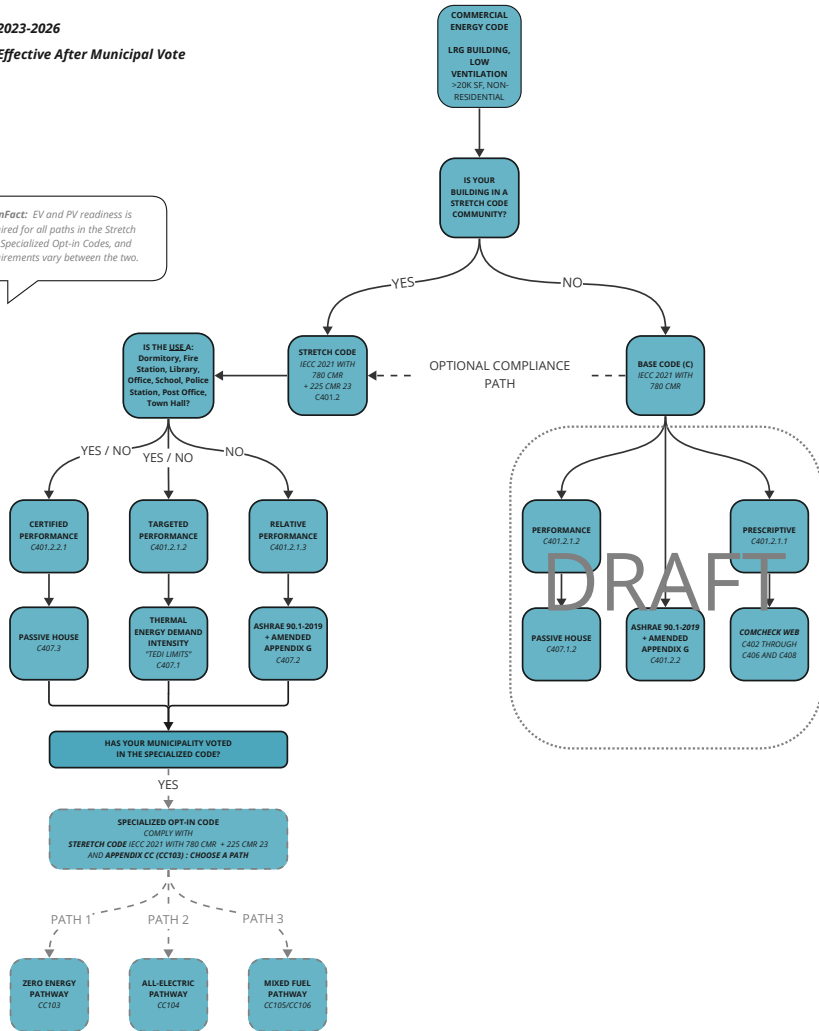
UPDATED JANUARY 2024

LEGEND

→ 2023-2026

- - - Effective After Municipal Vote

#FunFact: EV and PV readiness is required for all paths in the Stretch and Specialized Opt-in Codes, and requirements vary between the two.



COMMERCIAL BRANCH: HIGH-VENTILATION >20,000 SF

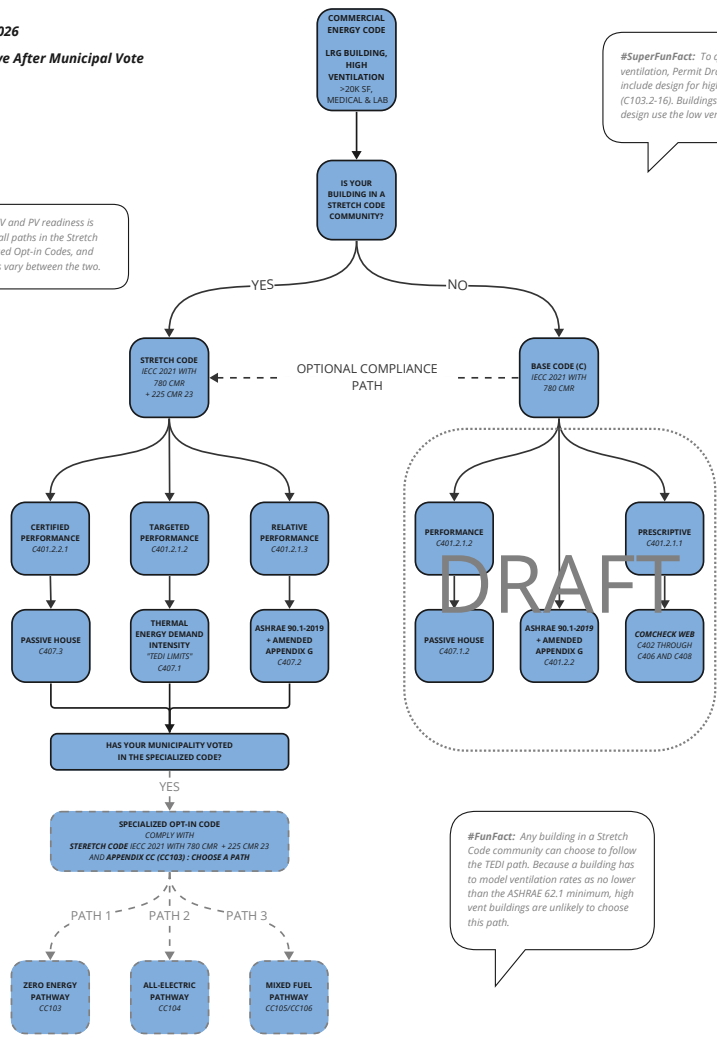
UPDATED JANUARY 2024

LEGEND

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#SuperFunFact: To qualify for high ventilation, Permit Drawings must include design for high vent systems (C103.2-16). Buildings without this design use the low ventilation pathway.

#FunFact: EV and PV readiness is required for all paths in the Stretch and Specialized Opt-in Codes, and requirements vary between the two.



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#FunFact: Any building in a Stretch Code community can choose to follow the TEDI path. Because a building has to model ventilation rates as no lower than the ASHRAE 62.1 minimum, high vent buildings are unlikely to choose this path.

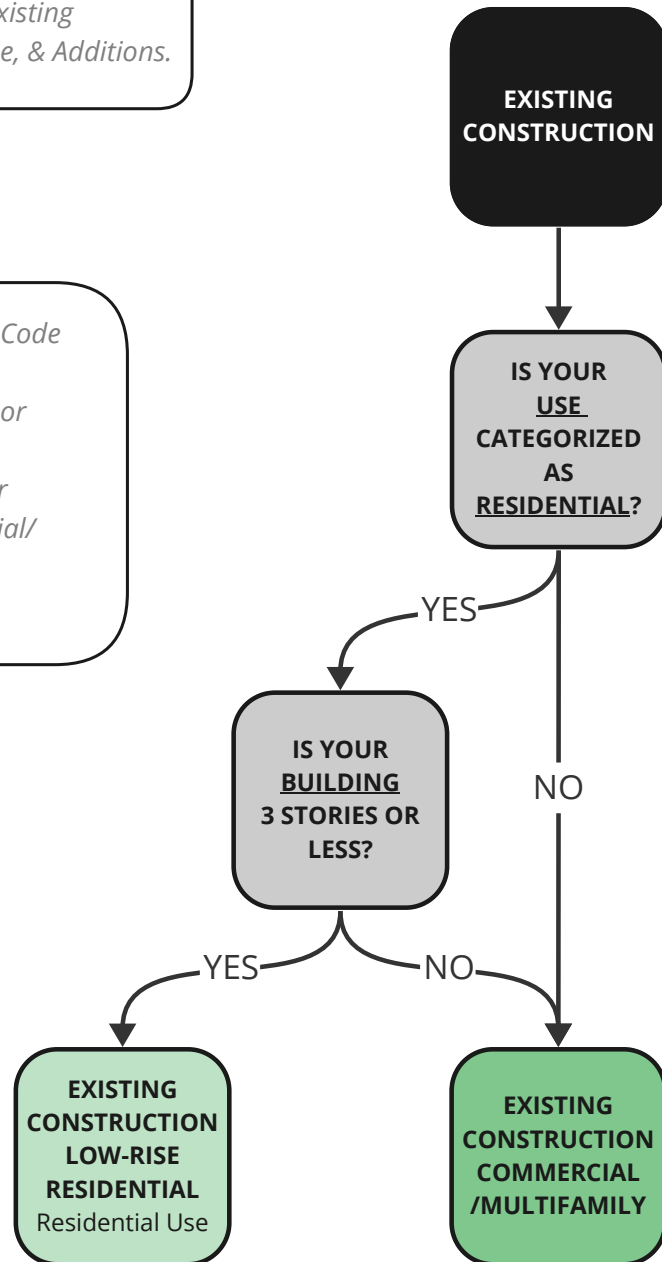
EXISTING CONSTRUCTION DECISION TREE

UPDATED JUNE 2023

#FunFact: This is the first time the Stretch Code applies to Existing Alterations, Change of Use, & Additions.

#FunFact: The Specialized Opt-in Code pertains to new buildings only. Reference CMR 23 Section CC101.4 or Section RC101.1.
*This is an important distinction for Low-Rise Residential and Commercial/Multifamily Existing Construction.

#FunFact: Energy code defines a RESIDENTIAL USE as detached one-and two family dwellings, townhouses as well as Group R-2, R-3 and R-4 buildings. All other uses are considered Commercial.



EXISTING BRANCH: COMMERCIAL/MULTIFAMILY

UPDATED MARCH 2024

#FunFact: Levels of alteration are not applicable to the decision tree for the Commercial Existing Construction Energy Code requirements.

CODE LANGUAGE BREAKDOWN
 Thermal Envelope Certificate: C401.3
 Envelope Requirements: C402
 MEP Requirements: C403-C405
 Additional Efficiency Requirements (Point System): C406
 C407.1 + SELECT SECTIONS OF ASHRAE 90.1-2019)
 Maintenance and Commissioning: C408

#FunFact: Additions, alterations, and change of use occupancy each have different requirements. Similar to multiple use types, if an existing building has an addition and an alteration, then compliance is required for each individual portion.

#FunFact: Additions greater than 20,000 SF are to be treated as a new, separate, building and subject to the Specialized Opt-in Code, if compliance is required under New Construction Code pathway.

BASE ENERGY CODE
 IECC 2021 w/ MA Amendments

EXISTING CONSTRUCTION COMMERCIAL /MULTIFAMILY

IS YOUR BUILDING IN A STRETCH CODE COMMUNITY?

NO

YES

STRETCH ENERGY CODE
 DEFINE THE SCOPE OF IMPROVEMENTS

IF

IF

IF

IF

CS01 THROUGH CS05

HISTORIC

REPAIRS
 Work limited to maintenance or correcting damage and does not include substantial replacement or other work

THEN

PERSPECTIVE CS02
 (CS01.3/CS01.4) Maintenance, New and Replacement materials

HISTORIC

CHANGE OF OCCUPANCY or USE
 From one use group to another or use within a group CS05

THEN

PREScriptive C401.3, C402 THROUGH C406, AND C408
 10% REDUCED ENVELOPE C402.1.5 Applies to the whole building or spaces

HISTORIC

ALTERATION
 Retrofit or renovation of the existing structure; not a repair or added conditioned space CS03

THEN

PREScriptive CS03, C402, C403, C404, C405, AND C408
 10% REDUCED ENVELOPE C402.1.5 Applies only to altered components

HISTORIC

Non-conditioned spaces converted to conditioned space where envelope dimensions are unaltered.

Options for compliance
 1. Component performance alternate in C402.1.5 UA shall not be greater than 110% of the target UA
 2. Total building performance option in C407 shall not be greater than 110% of the annual energy cost

ADDITION
 Added conditioned space not within the existing building CS02

THEN

IS THE ADDITION GREATER THAN 20,000 SF OR MORE THAN 100% THE SIZE OF THE EXG BUILDING?

NO

YES

Non-conditioned spaces converted to conditioned space - conditioned area is required to meet the minimum standards set by code for new ground-up construction. EXCEPTION: All compliance allows a 10% higher total building performance value.

SMALL ADDITION PREScriptive PATHWAY FOR NEW CONSTRUCTION C401.2.1.1

COMCHECK WEB
 C401.3, C402 THROUGH C406 AND C408

LARGE ADDITION COMPLY WITH APPLICABLE PATHWAY FOR NEW CONSTRUCTION C401.2

IS YOUR USE CATEGORY RESIDENTIAL AND GREATER THAN OR EQUAL TO 4 STORIES?

NO

YES

Is your building Commercial Multifamily?

> 0.5 CFM/SF (HIGH VENTILATION)?

NO

YES

COMMERCIAL ENERGY CODE
 LRG BLDG, LOW VENTILATION
 >20K SF, NON-RESIDENTIAL

COMMERCIAL ENERGY CODE
 LRG BLDG, HIGH VENTILATION
 >20K, MEDICAL & LAB

COMMERCIAL ENERGY CODE
 MID + HIGH-RISE MULTIFAMILY
 4 STORIES PLUS

Section CS04 directs users to sections CS01.3/CS01.4 stating that repairs must comply with the code in which the building was constructed, provided this does not create hazards to life, health, or property. New materials must comply with code for new construction.

***HISTORIC BUILDINGS (CS01.5)**

HISTORIC BUILDINGS are not exempt from energy code though **CODE OFFICIALS MAY PROVIDE WAIVERS** for specific requirements within the code that cannot be met because they are in proven conflict or destroy the historic nature of the building.

#FunFact: The DOER Technical Guidance recommends that permit applicants confirm locally, with the Authority Having Jurisdiction, which code applies.

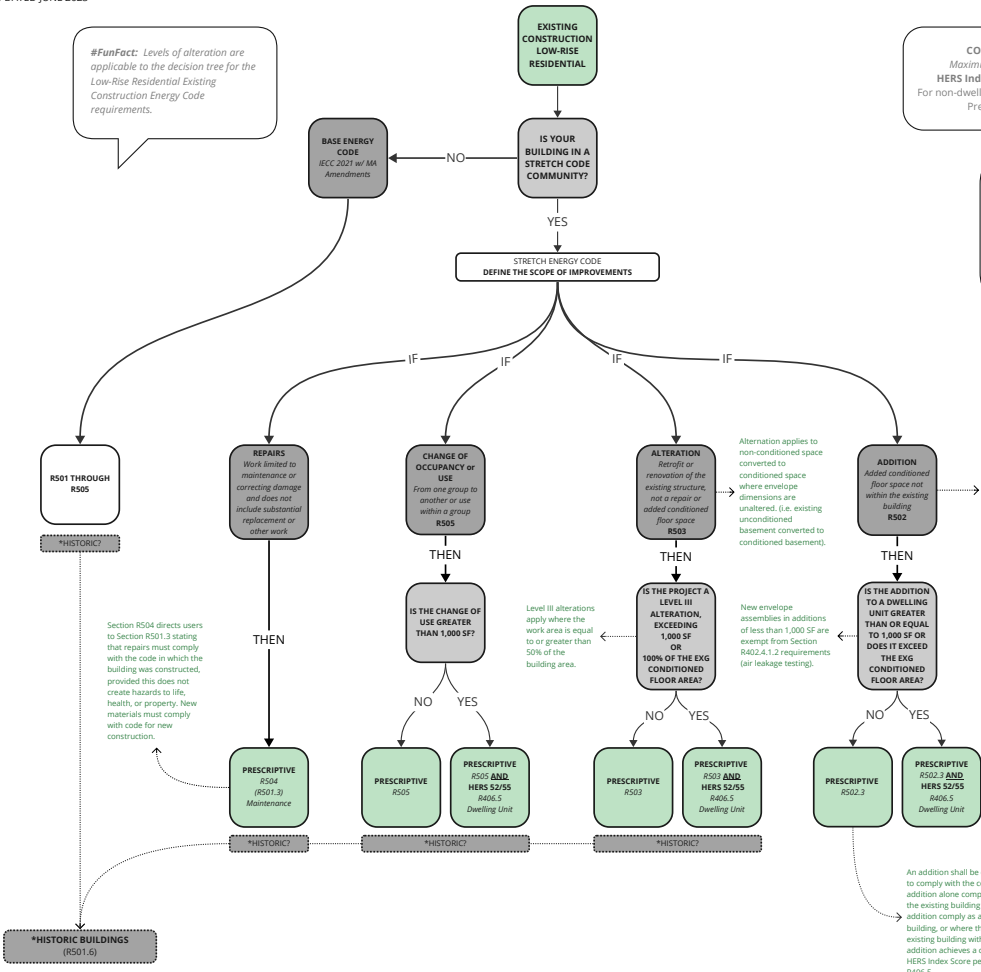
EXISTING BRANCH: LOW-RISE RESIDENTIAL 3 STORIES OR LESS

UPDATED JUNE 2023

CODE LANGUAGE BREAKDOWN
 Maximum HERS Index Score: **Table R406.5**
HERS Index Score applies to dwelling units.
 For non-dwelling units, Sections R502.3, R503, or R505
 Prescriptive requirements apply.

#FunFact: Additions, alterations, and change of use occupancy each have different requirements. Similar to multiple use types, if an existing building has an addition and an alteration, then compliance is required for each individual portion.

#FunFact: The Specialized Opt-in Code does not apply to Low-Rise Existing Construction Additions.



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