



Council Sustainability Committee

Considerations for the 2023 Reach Code

March 14, 2022

Hayward's Current Reach Code

- Modifies the California Building Code
- Adopted by Council March 3, 2020
- Approved by California Energy Commission on June 10, 2020

Hayward Reach Code

REACH CODE INITIATIVE

In March 2020, the Hayward City Council adopted a reach code ordinance to electrify buildings and vehicles in new construction. The new requirements will result in safer and more comfortable buildings, increase our electric vehicle charging infrastructure, and reduce our carbon footprint. The ordinance requires all new low-rise residential buildings (three stories and less) to be all-electric, and encourages all-electric construction in high-rise residential and non-residential buildings. The ordinance also requires electric vehicle charging infrastructure beyond that required in the 2019 California Green Building Standards Code.

WHAT ARE REACH CODES?

<https://www.hayward-ca.gov/reach-code>

Hayward Reach Code – Requirements

Single-family and Multi-family Residential (up to 3 stories)

- Must be all-electric

Non-residential and High-rise Residential

- Can be all-electric or mixed-fuel. Mixed-fuel buildings must have additional solar and energy efficiency.

Enhanced EV Charging required for all Building Types.

Current Reach Code Expiring

The 2022 California Building Code has been approved and will take effect January 1, 2023.

To continue Hayward's current Reach Code requirements, a new Reach Code must be adopted this year to be effective along with the 2022 California Building Code in January 2023.

Strategic Roadmap – Climate Change Projects

Reduce Dependency on Fossil Fuels.

- 1a – Ban natural gas in new residential buildings
- 1b – Require EV charging infrastructure in new construction
- 1c – Explore feasibility of banning natural gas in non-residential (commercial) buildings
- 1d – Prepare plan to facilitate transition of natural gas appliances to electric in City Facilities



Regional Working Group

The screenshot displays the website for the Bay Area Reach Codes initiative. At the top, there are five logos: East Bay Community Energy, Peninsula Clean Energy, Silicon Valley Clean Energy, Office of Sustainability (County of San Mateo), and The County of Santa Clara. Below the logos is a navigation menu with the following items: City Participation, Recommended Reach Codes, About Reach Codes, Process & Timeline, Resources, FAQ, Events, and Stay in Touch. The main content area features the heading "2022 Building Electrification & EV Infrastructure Reach Code Initiative" and a photograph of a modern building with large glass windows and palm trees in the foreground.

<https://bayareareachcodes.org/>

Potential Reach Code Components

1. New Low-Rise Residential Buildings
2. New Non-residential & High-Rise Residential Buildings
3. New Accessory Dwelling Units
4. Existing Buildings (not addressed in Hayward's current code)
5. End of Flow
6. Existing Residential (not addressed in Hayward's current code)
7. EV Charging Requirements

1 – New Low-Rise Residential Buildings

Staff recommends maintaining the current requirements:

- All new single-family homes and low-rise multi-family buildings (up to 3 stories) must be designed and constructed as all-electric.

2 – New Nonresidential & High-Rise Residential Buildings

Currently, new non-residential and high-rise residential buildings can be either all-electric or mixed-fuel.

Staff recommends eliminating the mixed-fuel option and is evaluating two possible approaches:

1. Allow certain exceptions for industrial purposes
2. Ban the use of gas for water heating and space heating.
This would allow the use of gas for cooking and industrial purposes.

Staff seeks the Committee's direction.

3 – New Accessory Dwelling Units

Current reach code exempts ADUs less than 400 square feet, which means they can include natural gas appliances for water heating, space heating, etc.

- Staff recommends requiring all new detached ADUs to be all-electric

4 – Existing Buildings

Extension of Gas Lines - Staff is exploring the possibility of including a provision to prohibit extension of any existing gas infrastructure to any system or device within a building.

Could address:

- Existing all-electric buildings built under current Reach Code
- Existing mixed-fuel buildings built prior to current Reach Code

5 – End of Flow

End of Flow – City of Half Moon Bay recently adopted ordinance with:

“No later than January 1, 2045, all buildings within Half Moon Bay shall be All-Electric Buildings or All-Electric Conversions and all Fuel Gas plumbing lines shall be capped and/or decommissioned.”

6 – Existing Residential Buildings

Not addressed in Hayward's current code.

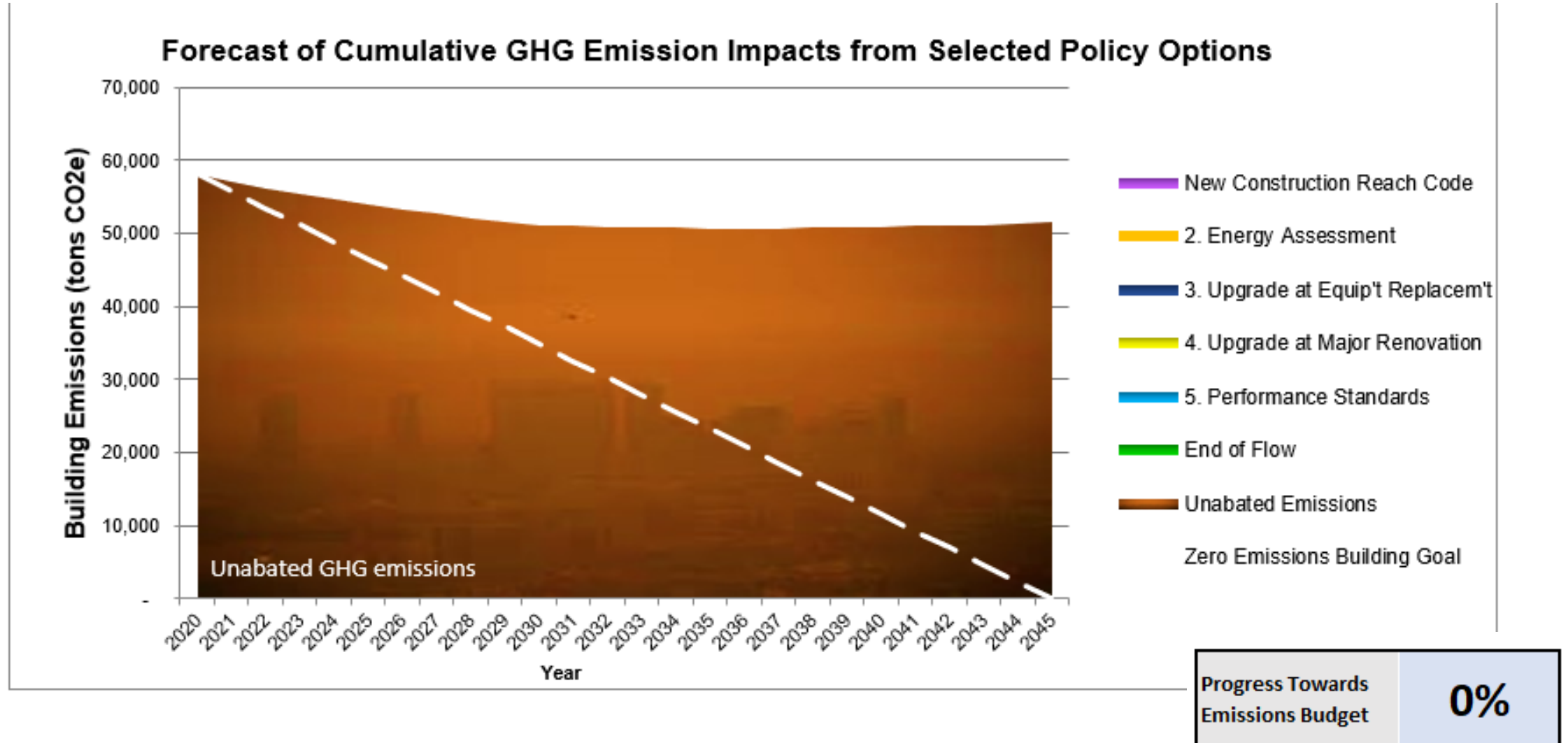
Staff is actively researching different approaches

- Upgrade at Time of Major Renovation
- Upgrades at Time of Equipment Replacement (currently being considered by Air District and State of CA)

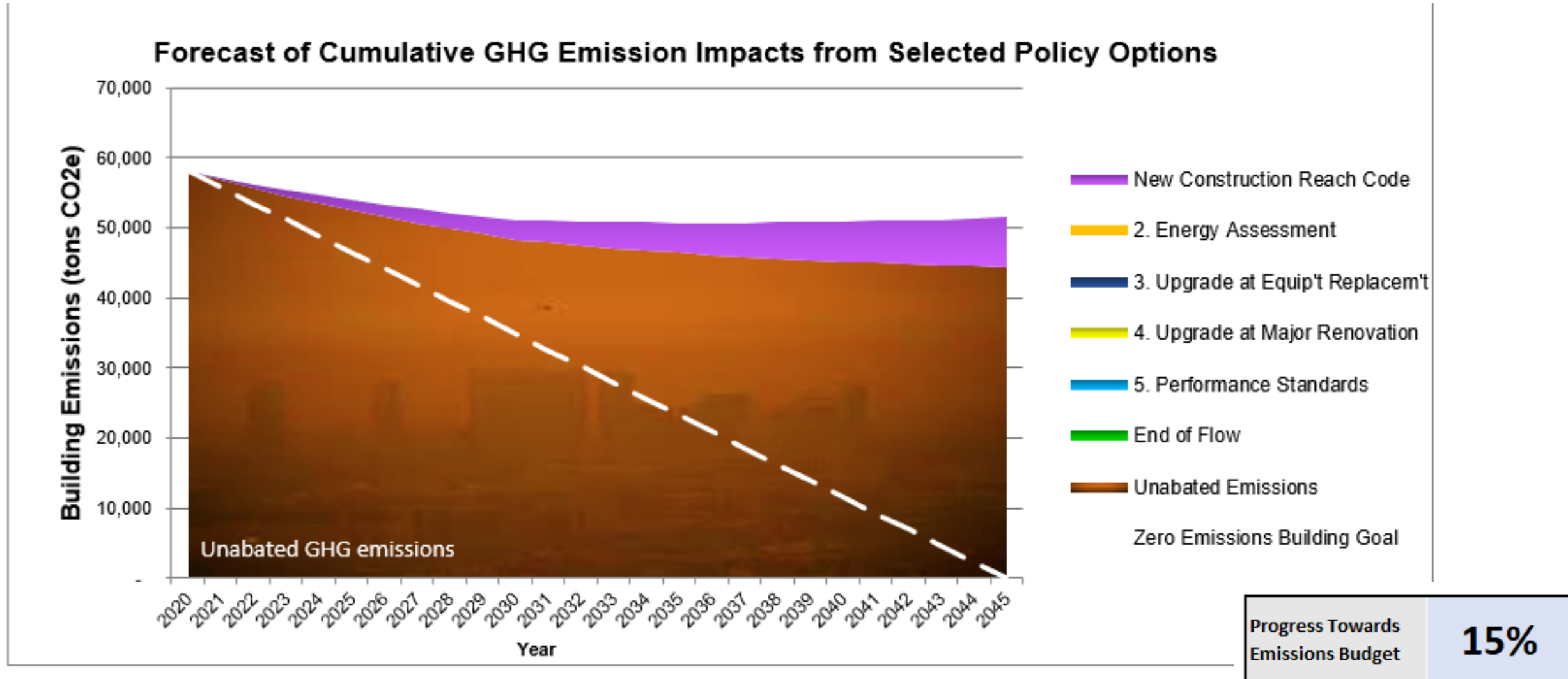
Menu of Policy Options: Single-Family Residential

7				Compliance	
8	Policy Options Analyzed	Include?	Start Year	Start	Improve to
9	0 - New Home Reach Code or All-Electric Ordinance	<input checked="" type="checkbox"/>	2021	0%	100%
10	1 - Code Compliance	<input type="checkbox"/>	2029	30%	90%
11	2- Energy Assessment & Disclosure	<input type="checkbox"/>	2022	0%	100%
12	3- Upgrade @ Time of Equipment Replacement	<input type="checkbox"/>	2029	0%	30%
13	4- Upgrade @ Time of Major Renovation	<input type="checkbox"/>	2024	0%	100%
14	5- Building Performance Standards	<input type="checkbox"/>	2022	0%	30%
15	End of Flow	<input type="checkbox"/>	2040	0%	100%

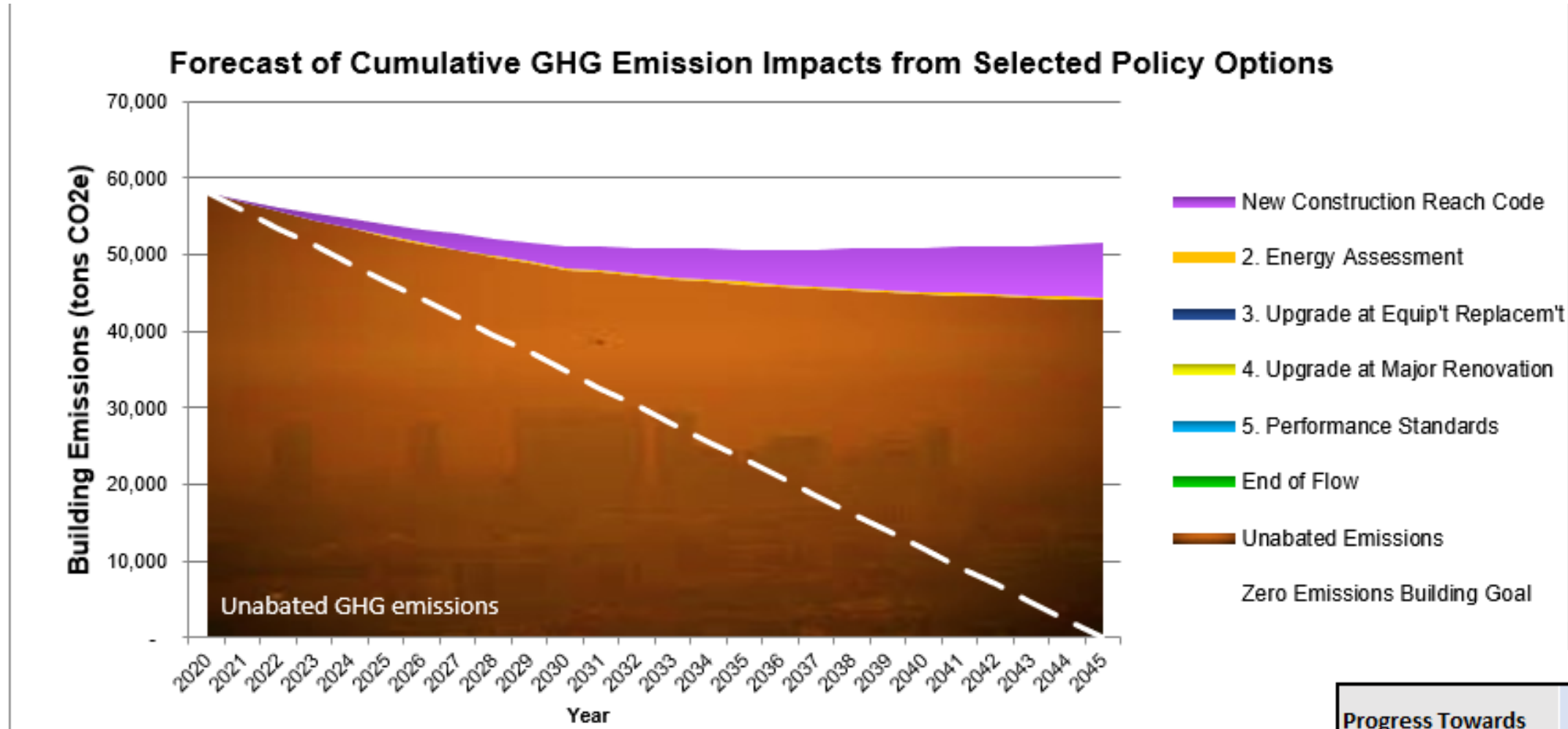
Unabated GHG Emissions for SF Homes 2020 – 2045



Continue All-Electric Requirement for New SF Homes

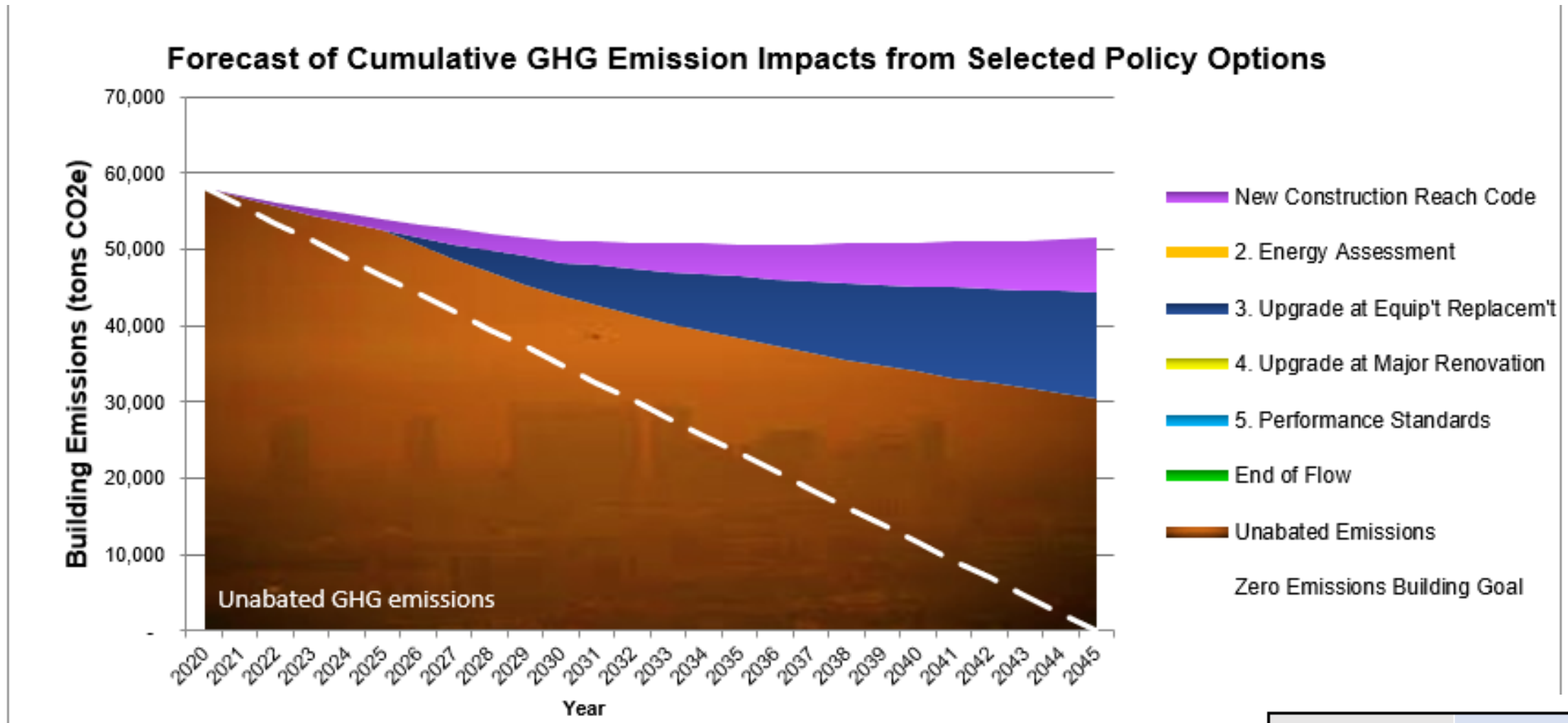


Energy Assessment & Disclosure



Progress Towards Emissions Budget **16%**

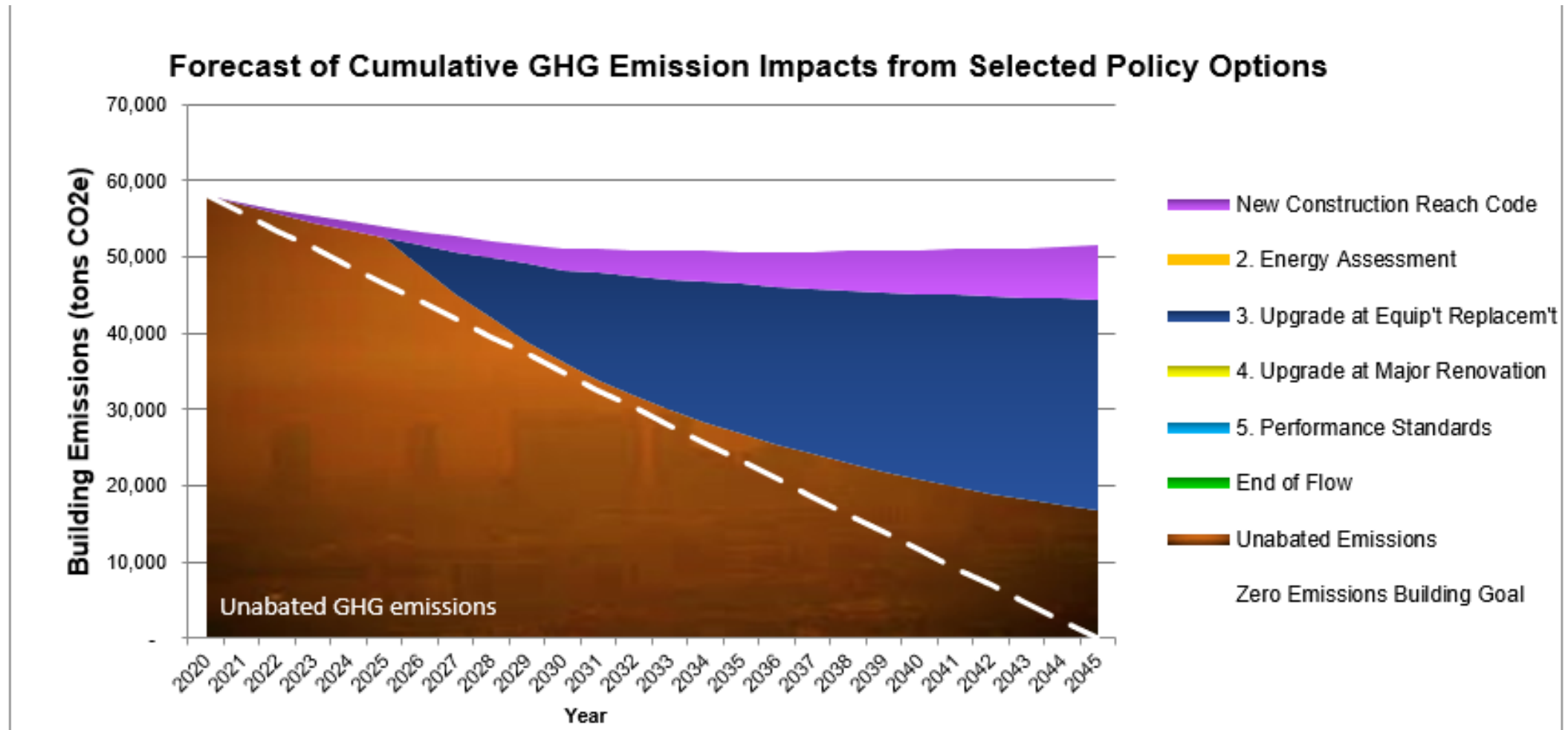
Upgrade @ Time of Equipment Replacement, Start 2026



Does not include enhanced code compliance.

Progress Towards Emissions Budget	42%
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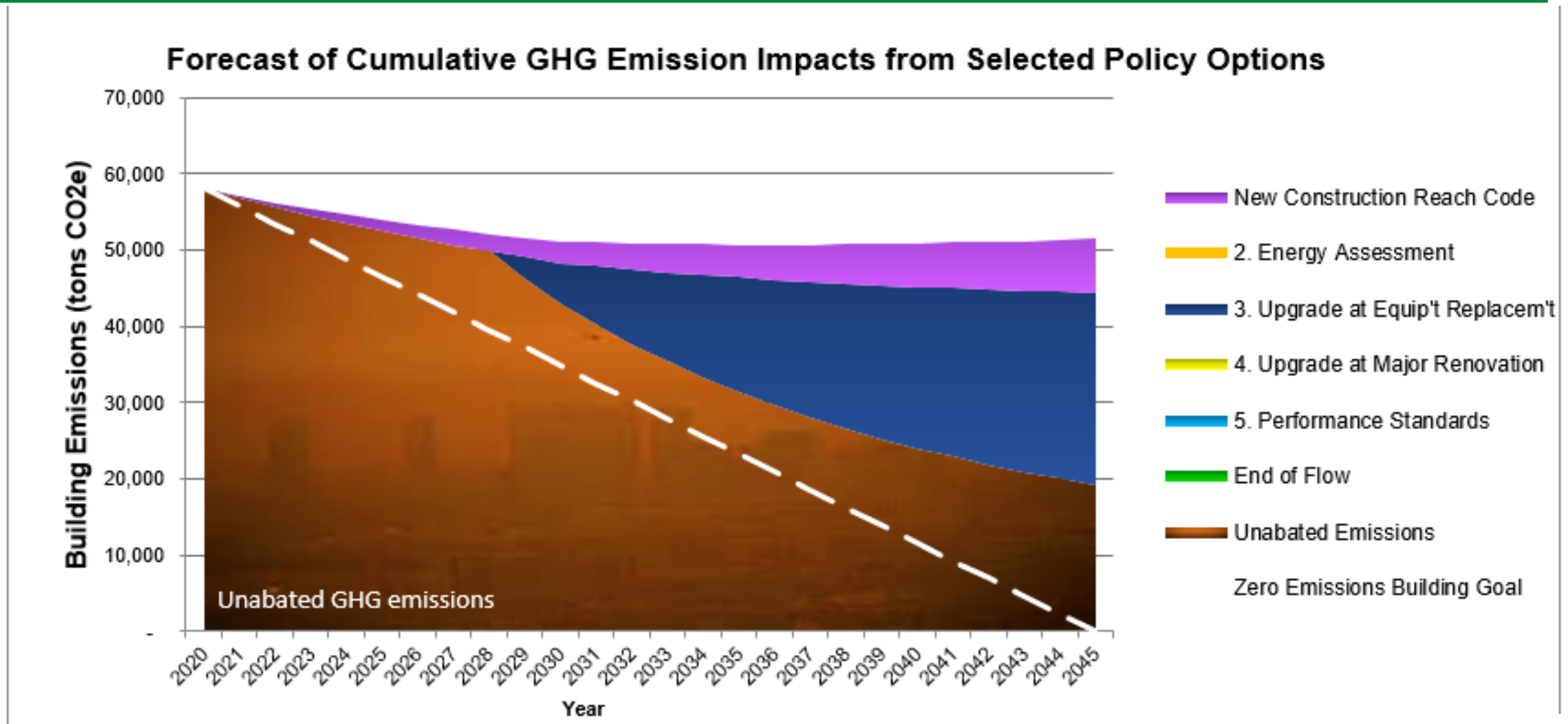
Upgrade @ Time of Equipment Replacement, Start 2026



Includes enhanced code compliance.

Progress Towards Emissions Budget	76%
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Upgrade @ Time of Equipment Replacement, Start 2029

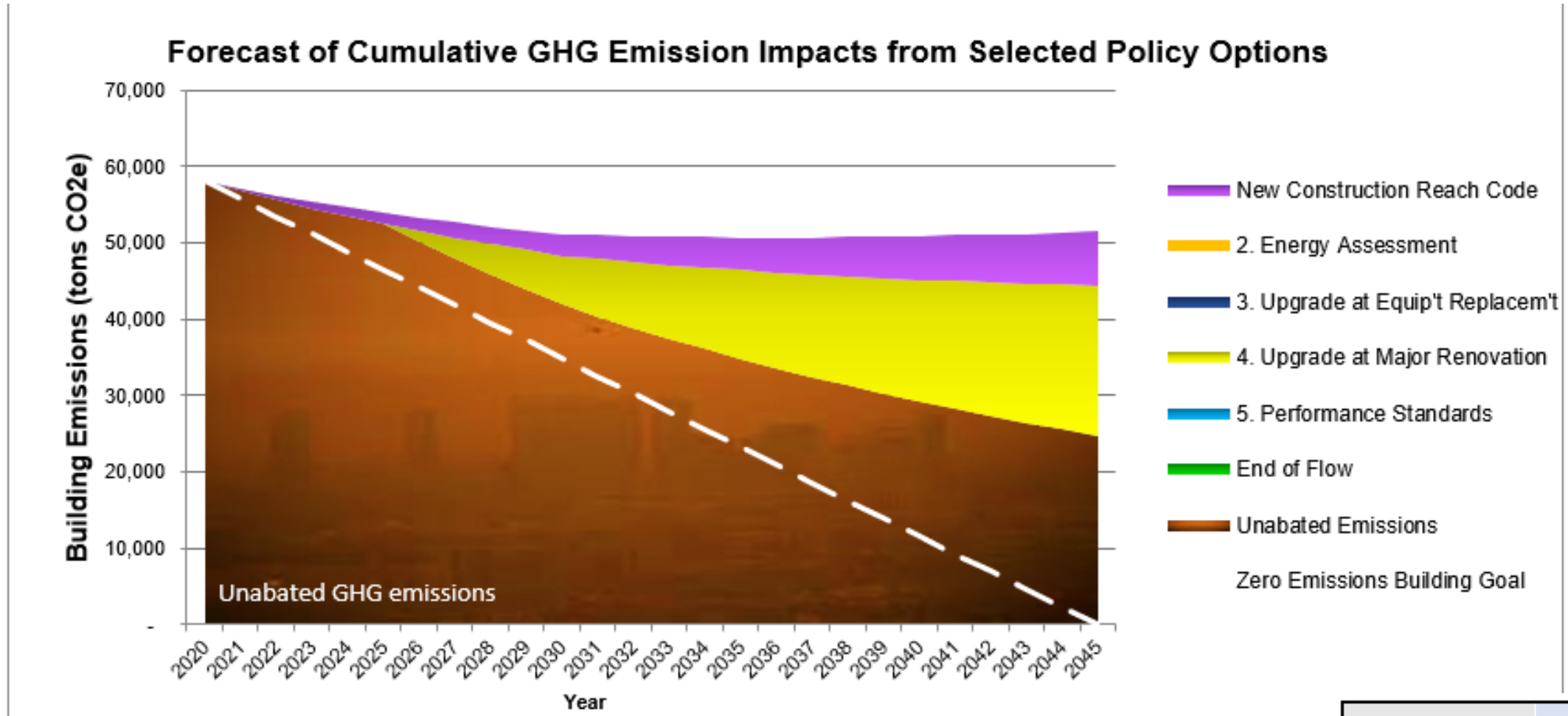


Assumes point-of-sale rule adopted by BAAQMD, banning gas furnaces & water heaters.

Progress Towards Emissions Budget

61%

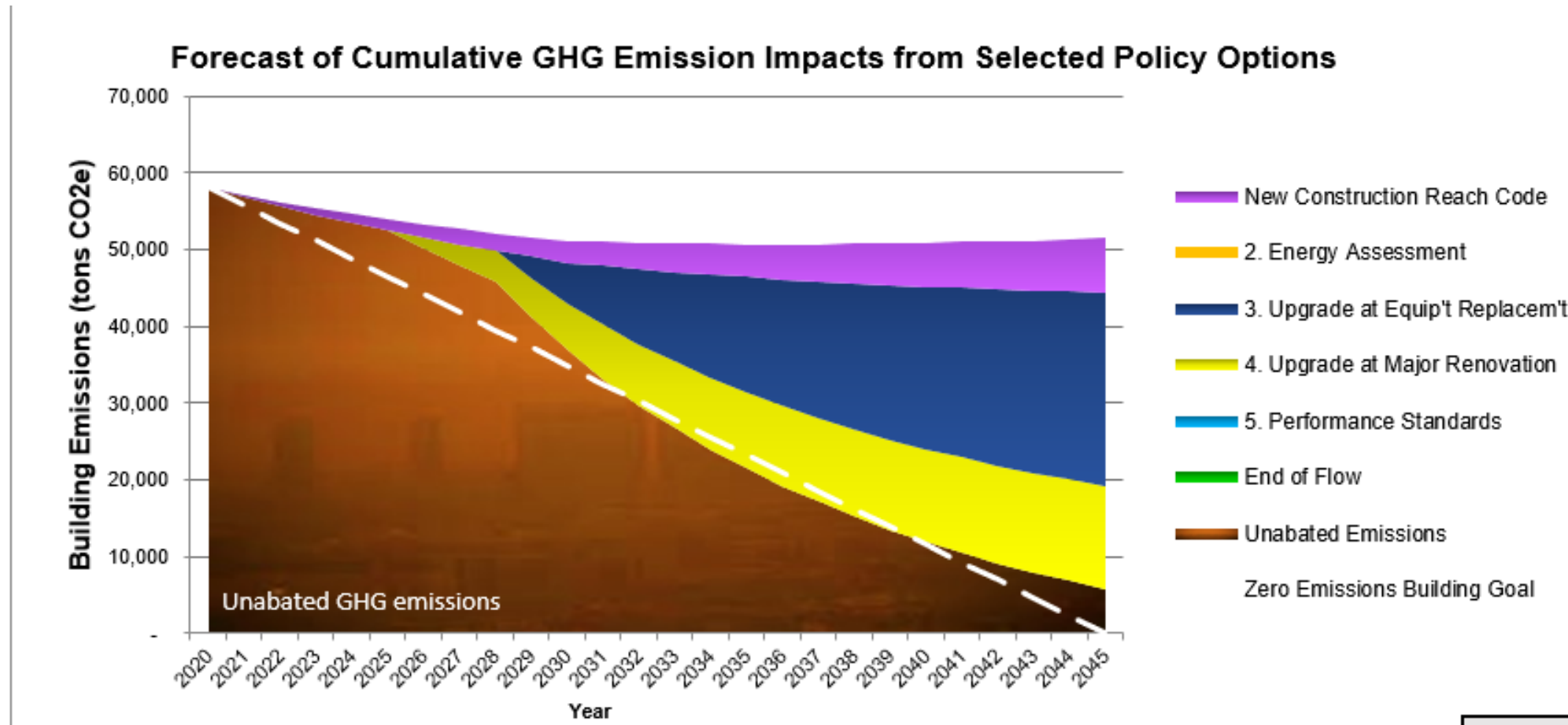
Upgrade @ Time of Major Renovation, Start 2026



Progress Towards
Emissions Budget

53%

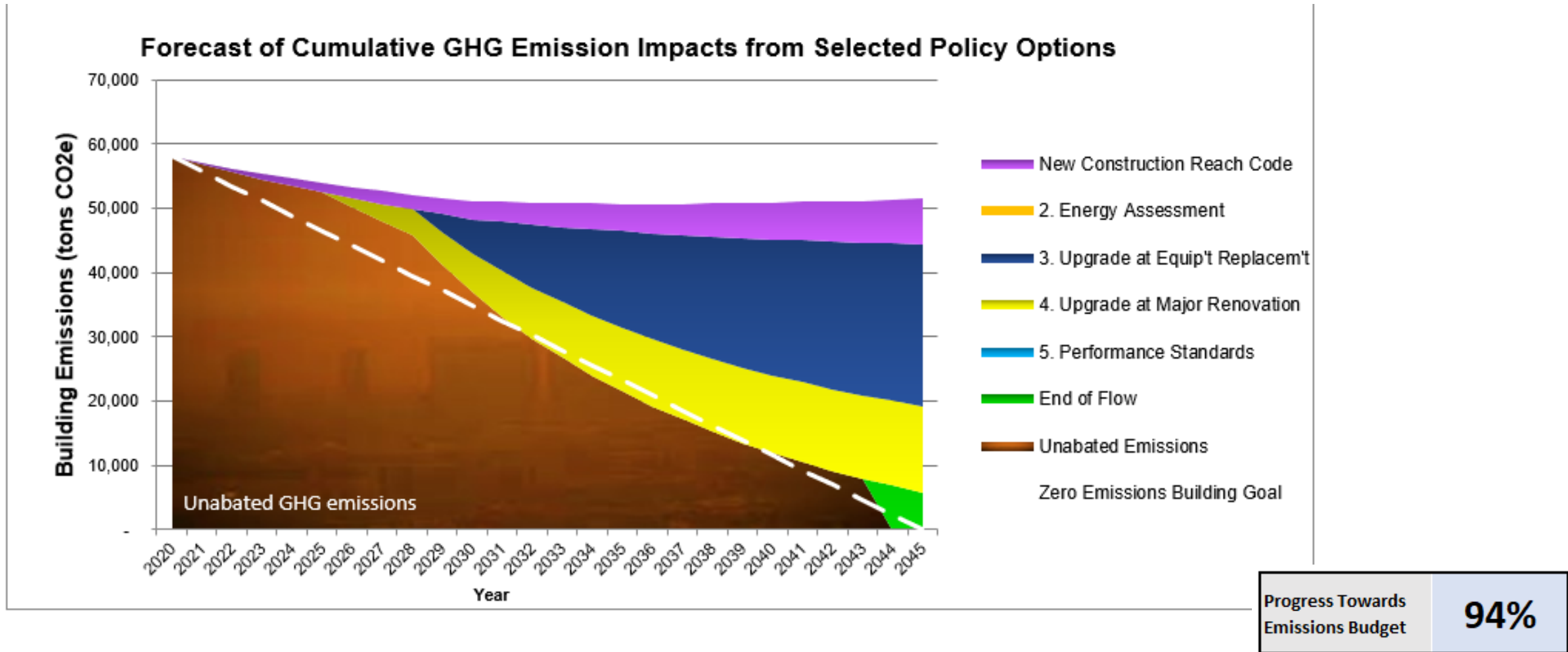
Upgrade @ Time of Major Renovation, Start 2026 and Upgrade @ Time of Equipment Replacement, Start 2029



Progress Towards
Emissions Budget

92%





Upgrade @ Time of Major Renovation (start 2026) and Upgrade @ Time of Equipment Replacement (start 2029) and End of Flow (start 2044)



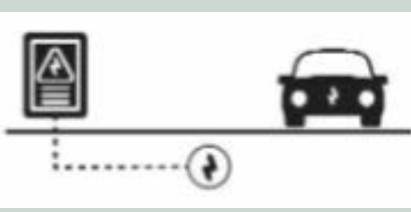
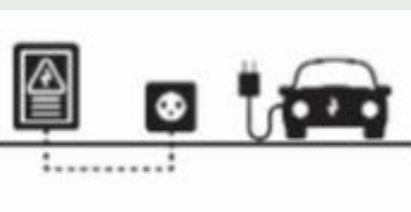

7 – EV Charging Requirements

1. Single-Family
2. Multi-Family
3. Non-Residential
 - Office
 - Non-Office

Electric Vehicle Charger Types

Level 1		15-20 Amp, 120 Volt (standard household outlet) Driving Distance provided: 3-4 miles/hour
Low Power Level 2		20 Amp, 208/240 Volt Driving Distance provided: 10-15 miles/hour
High Power Level 2		40+ Amp, 208/240 Volt Driving Distance provided: 25-30 miles/hour
DC Fast Charge		80-400 Amp, 200-600 Volt DC (direct current) Driving Distance provided: 125-1000 miles/hour

EV Charging Readiness

EV Capable		Raceway (conduit), electrical capacity (breaker space)
EV Ready		EV Capable + overcurrent protection devices, wiring and outlet (i.e. full circuit)
EVCI (electric vehicle charger installed)		All equipment to deliver electricity to EV (aka EVSE = electric vehicle supply equipment)

EV Charging – Single-Family

	2019 CalGreen	Hayward's Current Reach Code	2022 CalGreen	<i>Model Reach Code (potential requirements)</i>
Single Family & Townhome	One Level 2 EV Capable for one parking space per dwelling unit	Two Level 2 EV Ready spaces per dwelling unit	No changes	One Level 2 EV Ready space One Level 1 EV Ready space

EV Charging – Multi-Family

	2019 CalGreen	Hayward's Current Reach Code	2022 CalGreen	Model Reach Code (potential requirements)	Model Reach Code (Affordable Housing)
Multi-Family ≤20 dwelling units	10% of units must have one Level 2 EV Capable space	100% Level 2 EV Ready space	10% Level 2 EV Capable; 25% <u>low power</u> Level 2 EV Ready (35% total)	40% <u>high power</u> Level 2 EVSE; 60% Level 1 EV Ready	15% <u>high power</u> Level 2 EVSE; 25% <u>low power</u> Level 2 EV Ready 60% Level 1 EV Ready
Multi-Family >20 dwelling units	10% of units must have one Level 2 EV Capable space	75% Level 2 EV Ready space; 25% Level 2 EV Capable space (100% total)	10% Level 2 EV Capable; 25% <u>low power</u> Level 2 EV Ready; 5% <u>high power</u> Level 2 EVSE (40% total)	(100% total)	(100% total)

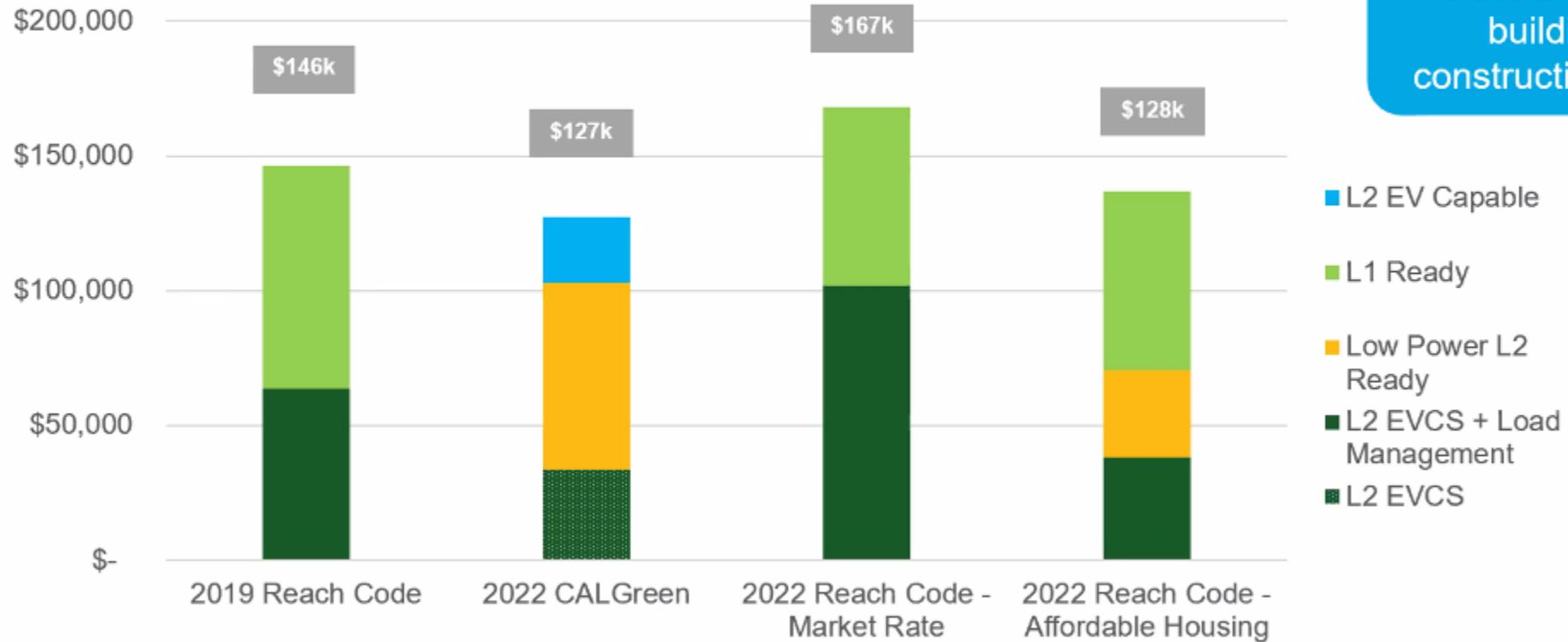
EV Charging – Non-Residential

	2019 CalGreen	Hayward's Current Reach Code	2022 CalGreen	<i>Model Reach Code (potential requirements)</i>
Non-Res Office	6% Level 2 EV Capable	20% Level 2 EV Charger Installed; and 30% of spaces must be EV Capable (50% total)	5% Level 2 EVCS; and 10% Level 2 EV Capable (25% total)	20% Level 2 EV Charger Installed; and 30% Level 2 EV Capable (50% total)
Non-Res Non-Office		15% Level 2 EV Charger Installed		10% Level 2 EV Charger Installed; and 10% Level 2 EV Capable (20% total)

100% Access Doesn't Need to Cost More



EV Infrastructure Cost for 100-Dwelling Multifamily Building



Each scenario is ~0.3% of whole-building construction cost

- L2 EV Capable
- L1 Ready
- Low Power L2 Ready
- L2 EVCS + Load Management
- L2 EVCS

% of dwellings with access

100%

40-60%

100%

100%

Assumes \$392/ft²
Source: [Turner and Townsend, 2021](#)

Public Outreach

- Email to 658 builders and developers
- Regional Workshops on February 15 and 16
- Conversations with Affordable Housing Developers

Next Steps

May 2022	Present refined/updated recommendations to CSC
June 2022	Present to Planning Commission
June 2022	Council Work Session to consider draft Reach Code
July 2022	Present draft Ordinance to CSC
October 2020	Council considers adoption
November 2020	File with CA Building Standards Commission
January 2023	Reach Code takes effect

Staff Recommendation

That the Committee reviews and comments on this report and provides direction to staff.

