City of Mountain View

MEMORANDUM

Community Development Department/
City Manager's Office

DATE: May 29, 2024

TO: Council Sustainability Committee

FROM: Lindsay Hagan, Assistant Community Development Director
Danielle Lee, Chief Sustainability and Resiliency Officer
Dawn S. Cameron, Acting Assistant City Manager/
Community Development Director

VIA: Audrey Seymour Ramberg, Assistant City Manager

SUBJECT: **Building Reach Code Updates**

RECOMMENDATION

Approve a recommendation to the City Council to direct staff to further electrification-readiness beyond the State Building Code minimums by: (1) preparing an ordinance updating Chapter 8 of the City Code (Mountain View Building Code) to expand electrical prewiring requirements in 2024; and (2) prepare energy performance requirements and additional prewiring requirements in the City ordinance to adopt the 2025 Triennial Building Code Update to Chapter 8 of the City Code in 2025.

BACKGROUND

On November 12, 2019, the City Council adopted Ordinance No. 17.19 establishing the City's first all-electric requirements for new construction in support of the City's fourth Environmental Sustainability Action Plan (ESAP, adopted in 2019) and Climate Protection Road Map for reducing greenhouse gas (GHG) emissions from new construction (adopted in 2015). Specifically, the ordinance imposed all-electric requirements on new construction and major renovations of single-family residences, duplexes, multi-family residences, hotels, motels, and other nonresidential buildings, and expressly prohibited the following natural gas appliances: space-conditioning (heat/cooling) equipment, clothes dryers, cooking appliances, fireplaces, fire pits, and water heaters. In addition to all-electric requirements, the City's Reach Code also included requirements for bird-safe glass in nonresidential development. With this ordinance, the City was one of the first in the region to apply all-electric requirements to major renovations in existing structures, in addition to new construction. This ordinance went into effect on January 1, 2020.

The City Council reenforced the local Reach Codes on December 13, 2021 by readopting the all-electric requirements and expanding requirements for electric vehicle (EV) parking and infrastructure, as well as solar requirements beyond State Building Code (State Code) minimums in Ordinance No. 15.22. This ordinance went into effect on January 12, 2023.

In January 2024, the Ninth Circuit U.S. Court of Appeals (Ninth Circuit) made a final decision on the California Restaurant Association's 2019 lawsuit against the City of Berkeley's ordinance banning natural gas infrastructure in new buildings, alleging it is unenforceable because it is preempted by the Federal Energy Policy and Conservation Act (EPCA). In its decision, the Ninth Circuit concluded that the EPCA expressly preempts state and local regulations, including building codes, concerning the energy use of covered natural gas appliances, and that the EPCA preemption applies to regulations addressing the appliances themselves and building codes that concern the use of natural gas. The Ninth Circuit stated further that "by enacting [the] EPCA, Congress ensured that states and localities could not prevent consumers from using covered products in their homes, kitchens, and businesses."[1] With this ruling, the Court has made clear that city building codes cannot prohibit the use of gas appliances directly or indirectly (via utility infrastructure). Additionally, a city cannot limit a consumer's product choice in their home or business if the product is covered under EPCA (which covers all major appliances) and the equipment is consistent with state building codes. However, a city can adopt electric-readiness and other efficiency requirements to ***encourage*** use of all-electric appliances in a local building code.

To align with the Court decision, on April 9, 2024, Council approved the staff recommendation to suspend Mountain View's all-electric building requirements in Chapter 8 of the City Code.[2] At this meeting, Council asked that staff explore options for accomplishing the City's electrification goals and seek input from the Council Sustainability Committee (CSC). Many other nearby agencies have also suspended enforcement of their all-electric codes, including the cities of Milpitas, Palo Alto, Half Moon Bay, Menlo Park, Atherton, San Mateo, South San Francisco, and Belmont, and the County of San Mateo. Cities have chosen to suspend the impacted sections of their local building codes in order to provide clarity on their alignment with the Court's ruling and transparency to the public on code requirements in effect.

On April 16, 2024, staff from the Community Development Department and the City Manager's Office provided a verbal overview to the CSC on the research staff has undertaken to date in considering alternative Reach Code updates. This memo restates and expands on some of the previous information shared with the CSC members and includes a staff recommendation on a path to move forward.

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[1] *California Rest. Ass'n v. City of Berkeley*, 89 F.4th 1094, 1103 (9th Cir. 2024).

[2] All other components of the Reach Codes remain in effect, including solar installation, greater electric vehicle charging installation and electric vehicle readiness, and bird-safe glass for nonresidential development.

Regional and State Decarbonization Goals

Achieving decarbonization and reduced GHG emission goals set at the federal level requires major shifts in market conditions for consumer products, public education, utility infrastructure, and everyday lifestyle as collectively we advance toward a healthier environment. No one agency or level of government can drive the change alone; it requires actions at every level to build the momentum of change. Some of the recent actions at the regional and state level that are contributing to all-electric requirements include:

- On March 15, 2023, the Bay Area Air Quality Management District (BAAQMD) adopted a requirement prohibiting the sale and installation of natural gas furnaces and water heaters that omit nitrogen oxides (NOx) within its jurisdictional boundary by 2027 to 2031, depending on the type of device. This type of phased regulation provides time for the market to adjust its consumer appliance offerings to meet the requirement, likely resulting in more electric appliances.

- In September 2022, the California Air Resources Board (CARB) adopted a strategy for the State Implementation Plan to reduce building-related GHG emissions by 2030. This strategy included an action item for CARB to explore developing and proposing zero-emission GHG standards for new space heaters and water heaters sold in California. This is similar to BAAQMD's zero NOx equipment requirement but at the state level. However, a formal policy or mandate has not yet been adopted. Adopting this requirement at the state level would further drive the market shift of available all-electric appliances statewide.

- The California Building Standards Commission is currently developing the 2025 Triennial California Building Code Update, as part of a regular three-year cycle, where discussions to date have included expanding electrical prewiring requirements for multi-family residential and nonresidential new construction beyond the current 2022 State Building Code, as well as expanding energy efficiency requirements. Initial discussions on building code updates at the state level did consider zero NOx emission standards for indoor equipment; however, the State decided to remove any further discussion or new codes related to zero NOx emissions at this time due to the extent of objections received by industry professionals. The 2025 Triennial State Code will be available to local cities by July 2025 and will go into effect on January 1, 2026.

These actions at the state and regional levels further support local agencies in adopting Reach Codes that go beyond the State Code minimums. **While the outcome of the Berkeley lawsuit invalidated the initial all-electric appliance/equipment requirements adopted in Chapter 8 of the City Code, there are alternative options to consider that will further electric-readiness in Mountain View beyond minimum requirements to advance the City's decarbonization goals.**

ANALYSIS

New Reach Code Update Options

As previously discussed with the CSC in April, staff has considered three options for Reach Code Updates that would allow Mountain View residents and businesses to better prepare for electric appliances now and in the future, particularly as BAAQMD's prohibition on natural gas appliance sales comes into effect. The options discussed below could be incorporated into the City's local building code by amending either State Building Code Part 6 (Energy Code) or Part 11 (California Green Building Code, CalGreen). If amendments are proposed to Part 6, the City would be required to obtain approval by the California Energy Commission (CEC) and would be required to prepare a Cost-Effectiveness Study, both of which would take additional time when compared to amending Part 11.

Option 1: Expand Electric Prewiring Requirements. The current 2022 State Building Code includes electrical prewiring requirements for some appliances in new single-family homes and multi-family residential buildings as listed in Table 1 on the following page. Option 1 would expand prewiring requirements to include the installation of all electrical components from the service panel to the installed natural gas appliance in a new-construction building (including major renovations). The components include the following:

- Installing the electrical line (prewiring) and an outlet (or outlet cover);
- Labeling the voltage for future use;
- Providing a dedicated space on the service panel for the appliance circuit; and
- In some cases, ensuring there is adequate space to accommodate the future electric appliance.

These amendments could be accommodated in the City's local building code by amending Part 11 (CalGreen) of the State Code. Table 1 summarizes additional appliances and equipment the City could consider in a Reach Code Update under this option.

TABLE 1: ELECTRICAL PREWIRING REQUIREMENTS (OPTION 1)

Current 2022 State Building Code Electrical Prewiring Requirements	Potential Expanded Electrical Prewiring Requirements
<u>For Single-Family Residential New Construction:</u> • Heat pump water heater • Solar • Energy storage • Stove • Clothes dryer <u>For Multi-Family Residential New Construction:</u> • Heat pump water heater • Stove • Clothes dryer	Expand electrical prewiring requirements under current City new construction and major renovation threshold to include: <u>For Single-Family Residential</u>: • Heat pump space heating (furnace) • Outdoor cooking facilities • Pool/spa heating equipment • Indoor/outdoor fireplaces or fire pits <u>For Multi-Family Residential:</u> • Building electrical system sizing • Central (shared) and individual heat pump water heaters • Outdoor cooking facilities • Pool/spa heating equipment • Indoor/outdoor fireplaces or firepits <u>For Nonresidential, Hotel/Motel, and Mixed-Use:</u> • Commercial kitchens • Hot water supply temperature • All nonresidential gas or propane appliance <u>AND</u> Evaluate electric prewiring requirements in existing buildings for residential and nonresidential projects (e.g., kitchen renovation or you touch it, prewire it)

The benefit of this approach is that there are examples of expanded electrical prewiring requirements in other cities, and the approach allows consumer choice regarding natural gas appliances (consistent with the Ninth Court ruling) while still requiring an applicant to make future replacement with electric appliances easier. There is also minimal cost to the applicant to install the additional electrical components, especially since this type of electrical work is already being undertaken in new construction and major renovation projects. However, the cost will need to be studied if lower construction thresholds are being considered for triggering prewiring requirements in existing building renovations. While this process does still allow for mixed-fuel (gas and electric) buildings and is not as stringent as the City's prior Reach Code (a complete prohibition on gas), it has the advantage of applying to all development types and can be more readily adapted to apply to existing buildings.

Option 2: Adopt an Air Quality (Zero NOx) Approach. This includes adopting amendments to the local building code to address indoor air quality standards by establishing an emissions

requirement on natural gas appliances. An example of this approach is adopting emission standards for indoor appliances, such as only allowing natural gas equipment that emits zero nitrogen oxide (Zero NOx) (like the Town of Los Altos Hills).[3] These requirements could be adopted into the local building code as an amendment to Part 11 (CalGreen Code). Currently, there is no available natural gas equipment on the consumer market that does not emit nitrogen oxide.

This approach would most closely align with the City's prior prohibition on natural gas appliances; however, there are no other examples of implementation on multi-family residential and nonresidential development. Additionally, this approach includes potential legal risk with adopting regulations that: (1) indirectly prohibit use of natural gas appliances by requiring use of appliances that are not yet available on the market, effectively resulting in no consumer choice, which appears in conflict with the Court ruling; and (2) includes air quality-based requirements in the building code, which may not be within the regulatory authority of the building code, whose purpose is to provide general building design and construction requirements related to fire and life safety, structural safety, and access compliance. Lastly, the state dropped consideration of new regulations regarding zero emissions in the 2025 Code Update due to the volume of opposition.

Option 3: Adopt Energy Performance (Single-Margin) Approach. This approach includes regulating the energy performance from equipment within a building at a set percentage above the State Code minimum to encourage the use of all-electric appliances. It utilizes an existing Title 24 Compliance Report prepared by a licensed professional that is required to be submitted for all new buildings and major renovations to a local city during permitting. In this case, the Title 24 Report would require the applicant to adjust their project's report to exceed the State Code minimums. A Title 24 Report can be thought of as an energy budget in that the applicant can adjust various energy efficiency improvements that are either existing or proposed in the building to net a certain numeric result that exceeds minimum standards. This approach can only be adopted into the local building code as an amendment to Part 6 (Energy Code) of the State Code.

One benefit to this approach is it utilizes an existing permit submittal requirement to encourage the adoption of electric appliances and equipment. There are numerous examples of this program in place in other cities, including San Luis Obispo and San Jose. The City of Palo Alto is actively pursuing this approach as their preferred Reach Code Update in response to the Berkeley case. The City of Santa Cruz also adopted this approach in late 2023. This approach still allows the consumer to have choice with installing a natural gas appliance; however, if they elect gas, these programs often require the installation of other electric appliances/equipment or solar elsewhere in the project to meet the higher percentage threshold for energy performance. This

[3]The Los Altos Hills Zero NOx Ordinance only applies to water heaters, heating/cooling (furnace), and clothes dryers for single-family residential new construction. It does not apply to indoor and outdoor cooking equipment, outdoor fireplaces, generators, and pool/spa heaters or multi-family residential or commercial buildings.

approach does not typically capture as many types of appliances as electrical prewiring, especially since appliances are only one piece of improving energy efficiency within a building. As a result, many cities that adopt energy performance approaches often adopt them in tandem with additional electric prewiring requirements to further their Reach Code impacts.

To adopt this approach, a city is required to produce a Cost-Effectiveness Study to demonstrate that the value of benefits associated with a particular requirement exceeds the cost of that requirement. Specifically, the Study is required for amendments to efficiency or conservation standards in Part 6 (Energy Code). This study must demonstrate that there is at least one cost-effective path to comply with the requirements that uses appliances meeting minimum federal appliance efficiency standards. Overall, it must be shown that there is a reduction in energy consumption over time (more stringent than the minimum State Code) because of this implementation. Numerically, this analysis evaluates how many years it takes to recoup the initial cost and whether the benefits exceed the costs. In simpler terms, this looks at the initial cost of the requirement compared to the ongoing operational outcome to ensure it is a cost-effective investment that reduces energy use for the consumer.

Summary Comparison of Reach Code Options

Table 2 provides a comparison of the three options based on the following considerations: (1) how closely they align with Mountain View's prior Reach Codes in effect before the outcome of the Berkeley case; (2) whether there are other adopted examples which include a range of development types; and (3) whether the upcoming 2025 Triennial Building Code Update anticipates the incorporation of some Reach Codes, potentially simplifying the code transition for applicants into the near-term update anticipated to be effective on January 1, 2026.

TABLE 2: COMPARISON OF REACH CODE UPDATE OPTIONS

Consideration	Expanded Prewiring Requirements	Air Quality (Zero NOx)	Energy Performance (Single Margin)
Aligns closest to Mountain View's Reach Code requirements pre-Berkeley Lawsuit	◑	●	◑
Includes adopted examples that apply to all development types (e.g., single-family, multi-family, nonresidential, etc.)	◑	○	◑
Anticipated to be added/expanded in the 2025 State Building Code Triennial Update, allowing for easier transition	●	○	●
Legend: ○ Does not ◑ Partially/Somewhat ● Does			

STAFF RECOMMENDATION

Staff recommends preparing Reach Code Updates in two phases to allow for a quick update that can take effect by January 1, 2025, while also developing a larger Reach Code Update based on the new 2025 Triennial Building Code that will be effective in 2026. This phased approach includes adopting electrical prewiring requirements that are in line with the current City thresholds for new construction and major renovations by Q4 2024 (Option 1). Then, staff will prepare an Energy Performance approach with additional expanded prewiring requirements that exceeds the City's current thresholds for new construction in line with the 2025 Triennial Building Code Update in Q4 2025 (Combining Options 1 and 3). Table 3 summarizes staff's recommended approach.

TABLE 3: STAFF RECOMMENDATION FOR REACH CODE UPDATES

Phase 1 (2024): Expanded Electrical Prewiring Requirements	Phase 2 (2025): Energy Performance Approach and Additional Electrical Prewiring Requirements
• Add electrical prewiring requirements beyond the 2022 State Building Code minimums for single-family, multi-family, and nonresidential development. • Retain existing thresholds for new construction and major renovations of existing buildings. • Anticipate bringing to Council in Q4 2024 for adoption; target effective date January 1, 2025.	• Establish an energy performance approach using 2025 Energy Code factors. • Remove any duplicate electrical prewiring requirements in 2025 Code Update, while adding new prewiring requirements for existing buildings (below the City's current new construction and major renovation threshold). • Anticipate bringing to Council in Q4 2025 for adoption as part of 2025 Triennial Update; target effective date January 1, 2026.

City staff has heard from building code professionals that there is likely going to be new energy efficiency requirements in Part 6 Energy Code in the 2025 State Code, which impacts the energy performance approach and electrical prewiring requirements. Staff's proposed approach with the Phase 2 update, as part of the 2025 Triennial Update, will allow the energy performance and prewiring requirements to build off the updated baseline factors in the new State Code, which will be effective from 2026 through 2028. This approach is preferred over attempting to quickly adopt an energy performance approach based on current 2022 codes, which would only be effective for one year since new baseline standards will be set in the 2025 Triennial Code. As a result, the City would be required to adjust the energy performance approach to the new baseline and seek approval again by the CEC, creating duplicative work in quick succession for the City.

In reviewing the other options discussed, Option 1 is often seen to be adopted in tandem with either Option 2 or Option 3 to maximum electrification efforts. Staff does not recommend combining Options 2 and 3, since this would result in multiple regulations with staggered triggers

of enforcement that would cause confusion as to which regulation was in effect. It could also be challenging for City staff to enforce overlapping code requirements. Additionally, staff is not recommending Option 2 (Air Quality Approach) as its current framework has the greatest potential risk for legal challenge and there are no applied examples to multi-family residential and nonresidential development. If the City were to adopt an Air Quality Approach and it was legally challenged, it may result in the City needing to suspend enforcement and portions of the building code again and pursue another alternative.

Implementation Timeline

Attachment A and the summary below includes an overview of the anticipated 20-month Reach Code Update timeline, as well as other important timing factors that directly impact the development of the Reach Code Updates.

- **Q2 2024**—The City suspended the natural gas appliance prohibition in the Mountain View Building Code. In response, staff is bringing forward to Council a recommendation on Reach Code Updates in June 2024.

- **Q3 2024**—City staff prepares draft amendments to Chapter 8 of the City Code (Building Code), in consultation with Silicon Valley Clean Energy (SVCE), for expanded electrical prewiring requirements within the City's existing new construction and major renovation thresholds. During this time, the State begins finalizing the 2025 Triennial Building Code.

- **Q1 2025**—The City's adopted Phase 1 electrical prewiring requirements are in effect. The State of California continues to finalize the 2025 State Code and prepare for code publication to cities statewide.

- **Q1/Q2 2025**—SVCE begins engaging cities to embark on Reach Code Updates in line with the new 2025 Triennial Building Code, including preparing Cost-Effectiveness Studies and other regulatory requirements for local cities (like Mountain View) to use in their adoption of the 2025 State Code.

- **Q3 2025**—The State of California releases the final 2025 State Code to local cities in July. Cities have four months to draft their ordinance amendments for targeted adoption in October 2025. During this four-month period, SVCE is coordinating and providing technical support to cities in preparing the Reach Code elements in their draft ordinances. The City, with support from SVCE, conducts community outreach.

- **Q4 2025**—City staff targets presenting the final 2025 Triennial Building Code and Reach Code Updates to Council for consideration, inclusive of a new energy performance approach and additional electrical prewiring requirements beyond Phase 1. The intent is to have an effective date as close as possible to January 1, 2026. With an energy

performance approach, the City would be required to submit the Council-adopted Building Code Update to the CEC following the public hearing.

It is important to note that most building code updates by local cities are adopted approximately three months prior to going into effect. This lead time is necessary to prepare for implementation, including training staff and building plan checkers on new regulations, updating state-required application submission checklists and required forms, and educating applicants on upcoming changes that may impact their project design. Applicants also need time to prepare their permit submissions.

Community Education and Outreach

As highlighted by the CSC in April, community education is paramount to encourage electric-readiness in Mountain View. As part of the Reach Code updates, staff proposes the following community engagement:

- For *Phase 1 (Expanded Prewiring Requirements)*, staff will provide notification on the City website of the upcoming changes being considered by the Council regarding electrical prewiring from the anticipated June 2024 Council meeting through the final adoption hearing in Q4 2024 of the code updates.

- For the remainder of 2024, City staff will develop educational and informational content for the City website, flyers, and other resources to help inform the community and public on the benefits of going electric.

- *Phase 2 (Energy Performance and Additional Prewiring Requirements)* will include notification on the City website in summer 2025 alerting applicants to upcoming 2025 Triennial Building Code Updates, including potential Reach Code considerations by the City. A community meeting with current applicants and interested community groups will be held in Q3 2024 to provide an overview of upcoming proposed Reach Code changes.

- On an ongoing basis, City staff will continue investigating creative ways to inform and engage the community on going electric.

CONCLUSION

While the outcome of the Berkeley case has resulted in a pause to many decarbonization building regulations in the region, cities and advocates are collaborating on alternative pathways to support electrification while reducing dependency on natural gas. State and regional agencies, such as BAAQMD and CARB, are establishing statewide efforts of electrification which support cities in their Reach Code efforts at the local level. In staff's assessment of the available alternatives to encourage electric-readiness, focusing on a phased approach with expanded

electrical prewiring requirements and greater energy performance will allow the City to advance decarbonization goals while complying with the Ninth Circuit court ruling and near-term State Code updates. In the event of Council approval of the proposed approach, staff would begin work on the Phase 1 prewiring requirements immediately, targeting to present it to Council for adoption in Q3 2024 with an effective date of January 1, 2025. Staff work on the Phase 2 additional prewiring requirements and energy performance approach would begin in Q1 2025, timed to coincide with the 2025 State Triennial update, with plans to bring the complete update to Council in Q4 2025 for adoption with an effective date of January 1, 2026.

NEXT STEPS

CSC input and recommendation on Reach Code Updates to the Building Code will be presented to the City Council for consideration and approval. Staff anticipates bringing this item to the June 25, 2024 Council meeting.

LH-DL-DSC/4/CDD
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Attachment: A. Implementation Timeline