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Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Kerrie Romanow
Rosalynn Hughey

SUBJECT: SEE BELOW

DATE: November 2, 2020

Approved

Date

11/5/20

**SUBJECT: UPDATED NATURAL GAS INFRASTRUCTURE PROHIBITION
ORDINANCE**

RECOMMENDATION

Approve an ordinance amending Chapter 17.845 of Title 17 of the San José Municipal Code to Amend Sections 17.845.010, 17.845.020, 17.845.030, 17.845.040, 17.845.050, and 17.845.060 and Add Section 17.845.045 to Prohibit Natural Gas Infrastructure in Newly Constructed Buildings effective on August 1, 2021 to:

- (a) Cover all new construction building types;
- (b) Add an exception for Hospitals; and
- (c) Allow limited exemptions on or before December 31, 2022 for:
 - (1) Food Service Establishments; and
 - (2) Manufacturing and Industrial Facilities.

OUTCOME

City Council approval of these recommendations will further community-wide progress on meeting the goals of the following Climate Smart San José strategies:

- Strategy 1.1: Transition to a renewable energy future
- Strategy 2.2: Make homes efficient and affordable for our residents
- Strategy 3.2: Improve our commercial building stock

BACKGROUND

Approved by City Council in February 2018, the Climate Smart plan includes the following goals and milestones to ensure San José can meet its greenhouse gas (GHG) emission reduction targets:

- Ensuring all new residential (by 2020) and commercial (by 2030) buildings are zero net energy (ZNE).
- Providing 100 percent carbon-free base power from San José Clean Energy by 2021.
- Reimagining the “Good Life 2.0,” that harnesses the benefits of sustainable actions and improves our quality of life.

In February 2019, City Council approved the City’s participation in the American Cities Climate Challenge (ACCC), which included a support package of in-kind services through organizations like the Natural Resources Defense Council, Inc. (NRDC) and New Buildings Institute (NBI), valued at \$2.5 million through 2020, and the commitment to pursue adoption of a reach code for all-electric construction, Electric Vehicle (EV) and solar-readiness in new residential and commercial construction. Through the ACCC grant, the City is receiving support for one-on-one technical assistance from the Association for Energy Affordability (AEA) to assist development projects in meeting San José’s new building reach code requirements and achieve all-electric designs.

The City has made significant progress towards achieving its Climate Smart goals through fulfilling its ACCC commitments. On September 17, 2019, City Council approved a resolution declaring a climate emergency which included the commitment to pursue a goal of prohibiting natural gas in new construction projects citywide by January 1, 2023. On the same date, City Council also approved the City’s building reach code (“Reach Code”), incentivizing all-electric buildings and requiring electric vehicle charging infrastructure (EVCI) and solar readiness requirements exceeding those of the 2019 California Green Building Standards. On October 29, 2019, City Council approved a natural gas infrastructure prohibition (i.e. natural gas piping to heat water, space, food, etc.) covering single-family, detached Accessory Dwelling Units (ADUs), and low-rise multifamily buildings up to three stories, supplementing the already adopted Reach Code and with the same effective date of January 1, 2020.

Pursuant to Council direction on June 9, 2020, staff provided an update to Council regarding whether the City should require electrification for wood-framed buildings up to seven stories. In order to inform staff’s analysis on a potential extension of the City’s natural gas infrastructure prohibition ordinance, in December 2019, the City hosted a three-hour Expert’s Roundtable convening industry stakeholders from various sectors, including building construction and development, real estate, affordable housing, architecture, engineering, industry associations, manufacturing, and more. City staff worked with the NBI to prepare a technical report, *Technical Analysis on Extending San José’s All-Electric Requirement*, which concluded that all-electric new construction is technologically feasible, although some market constraints remain. At the June 9 meeting in which the report was presented, Council directed staff to return in September 2020 with a natural gas prohibition ordinance amendment to be implemented on June 1, 2021, covering all building types, including mid-rise and high-rise multifamily buildings as supported by cost effectiveness studies, and exempting restaurants, hospitals, industrial, and manufacturing facilities.

ANALYSIS

In June 2020, the California Statewide Codes and Standards Program formally published its *Mid-Rise New Construction Reach Code Cost-Effectiveness Study*¹ which found that new all-electric mid-rise multifamily buildings can be cost-effective with appropriate design. This is consistent with the findings in the available preliminary draft that was discussed at the June 9, 2020 City Council meeting. While the full cost-effectiveness study for new high-rise residential is still being finalized and expected in early 2021, the California Statewide Codes and Standards Program provided its findings in its *2019 High-Rise Residential New Construction Reach Code Cost-Effectiveness Study for the City of San Jose (Climate Zone 4)* (see Attachment A) that this type of all-electric building can also be cost-effective with appropriate design. Other low-, mid-, and high-rise building types were already deemed cost-effective under existing cost-effectiveness studies previously presented to Council. These cost-effectiveness studies, which use different building prototypes to assess cost-effectiveness across a category of building types, utilize the cost-effectiveness methodology and cost-effectiveness standard required by the California Energy Commission (CEC) for updates to California's Energy Code, Title 24 Part 6. Although the Ordinance does not update an Energy Code, the cost effectiveness is an important consideration for Council and the community.

In order to review and discuss an updated natural gas infrastructure prohibition with building development stakeholders prior to returning to Council, City staff hosted four online webinars from July through August 2020 with a final webinar planned for October 28, 2020. The webinars were promoted via the City's Environmental Service Department (ESD) and Office of Economic Development (OED) websites and sent via email to over 225 stakeholders, including developers, contractors, environmental and transportation or energy non-profits, industry organizations, business associations, realtor organizations, labor groups, technical experts, educational groups, EV and solar companies, construction management and engineering firms, non-profits, utilities, and more than 100 Neighborhood Associations for all ten City Council Districts. During the additional stakeholder input sessions, attendees primarily expressed interest in understanding the ordinance details particularly around application to mixed-use buildings and exemption eligibility, and also learning more about all-electric building design options. Attachment B provides a summary of the questions and answers from the stakeholder input sessions.

City staff and AEA have also assisted several projects to date, including affordable housing, to work through all-electric design considerations. Most of the technical assistance provided has focused on three areas: 1) addressing issues with Title 24 software compliance, 2) heat pump water heater (HPWH) design and optimization, and 3) using solar thermal versus solar photovoltaic (PV) as a way to meet Title 24 compliance. City staff, AEA, and project design teams worked with the California Energy Commission to address some of the limitations of the current modeling software. Under the previous version of the software, only one specific HPWH

¹ Statewide Reach Codes Program. (2020, June). *Mid-Rise New Construction Reach Code Cost-Effectiveness Study*. Retrieved from https://localenergycodes.com/download/492/file_path/fieldList/2019%20Mid-rise%20NC%20Cost-Eff%20Report.pdf

system (Sanden) could be modeled; however, with support from our technical partner and collaboration with the CEC, two additional HPWH systems were approved to be modeled using the software. With technical assistance from AEA, City staff and project applicants discussed several HPWH system approaches (i.e., clustered vs. central HPWHs, single pass vs multi pass system) and HPWH brand options (comparing efficiency vs cost in particular). The teams also discussed placement options for HPWH systems and accompanying hot water storage. City staff was able to recommend design solutions based on the individual and unique limitations (i.e. space constraints, venting requirements) of each project. In terms of using solar thermal versus solar PV as a way to meet Title 24 compliance, City staff and AEA worked to determine a reasonable solar PV calculation, based on fundamental energy equations, in advance of compliance software being able to model for PV compliance. This enabled an all-electric affordable housing project to proceed with a much more cost-effective all-PV renewable design instead of the more costly and complicated solar thermal system that the compliance software would have forced the project team to install.

The *Technical Analysis on Extending San José's All-Electric Requirement* discussed at the June 9, 2020 City Council meeting identifies some common challenges with all-electric systems and offers solutions that can be addressed with early planning, best electric building practices, and thoughtful design. To continue to address barriers (e.g. market awareness and education) identified in the technical report, City staff intends to continue with its all-electric building assistance and outreach efforts including informational handouts, website updates, trainings, participation in a statewide consumer education campaign led by the Building Decarbonization Coalition, and technical assistance, as resources allow.

Based on the currently available cost-effectiveness analyses, NBI's technical report, stakeholder outreach, staff's experience working with project development teams under the current ordinances, the GHG reduction benefits, and previous Council direction, the updated ordinance prohibiting natural gas infrastructure will update the existing ordinance from new detached accessory dwelling units (ADUs), single-family, and low-rise multifamily buildings to all new buildings with an exception for Hospitals and limited exemptions on or before December 31, 2022 for Food Service Establishments and Manufacturing and Industrial Facilities². These facility types, which can have specialized operations and may lack emerging market examples, can be allowed longer time to transition to all-electric options. Sites applying for and receiving an exemption would still be required to meet the City's reach code requirement for being electrification-ready to ensure an easier transition from natural gas to electric equipment in the future. To allow adequate noticing to forthcoming building projects, the updated ordinance would become effective on August 1, 2021. By allowing the limited exemptions to expire after December 31, 2022, the City can still ensure that it meets its commitment to a goal of prohibiting natural gas in new construction projects citywide by January 1, 2023, as stated in its adopted resolution declaring a climate emergency. In addition, these exemptions are not expected to

² Hospital, Food Service Establishment, and Manufacturing and Industrial Facility as defined in *An Ordinance of the City of San José Amending Chapter 17.845 of Title 17 of the San José Municipal Code to Amend Sections 17.845.010, 17.845.020, 17.845.030, 17.845.040, 17.845.050, and 17.845.060 and Add Section 17.845.045 to Prohibit Natural Gas Infrastructure in Newly Constructed Buildings.*

severely impact GHG emissions reductions given their limited availability and limited applicability. The proposed ordinance will continue to not apply to attached and junior ADUs as they are considered additions/alterations and not new construction and therefore excluded from the natural gas infrastructure prohibition ordinance.

Building electrification, especially with a backdrop of protracted California fire seasons and looming Public Safety Power Shutdowns (PSPSs), often raise concerns around grid reliability. It is important to note that this ordinance does not propose electrification of one hundred percent of all buildings and grid impacts from the electrification of new construction will be marginal. Much larger grid impacts will be evaluated for future electrification of existing buildings, a much more time-consuming and costly endeavor, and utilities and state agencies are currently planning for that future.

As summarized in Attachment C, twenty-two other cities in California have implemented whole building, all-electric requirements. Some cities allow limited exemption requests for particular building types or uses. For example, twelve of the twenty two cities allow exemptions for retail cooking establishments. The two largest cities in the Bay Area after San José, San Francisco and Oakland are considering all-electric building requirements. San José's proposed update to its natural gas infrastructure prohibition ordinance is well-aligned with these efforts.

In addition to providing a positive benefit on indoor air quality, updating the current natural gas infrastructure prohibition will have a significant positive impact on future GHG emissions from the building sector. Based on the City's latest five-year development forecast, the projected GHG emissions offset over the estimated 50-year lifecycle of these buildings via this update is approximately 608,000 tons of CO₂ emissions. Furthermore, the ordinance will help San José reach its Climate Smart electrification and zero net energy building goals, City commitments set out in the adopted Climate Emergency resolution and transition the building industry toward all-electric power provided by San José Clean Energy.

The City remains a leader in addressing the global environmental crisis at a local level, from its approval of Climate Smart San José, to the adoption of Reach Code and Natural Gas Infrastructure Prohibition ordinances. The City's unique local, geological, topographical, and climatic conditions make it particularly vulnerable to the impacts of the changing climate, including risk of devastation from flood or fire. A rise in temperature increases the risks, both worldwide and locally, associated with climate change particularly to already vulnerable populations. Local governments continue to play a critical role in curbing GHG emissions. Replacing natural gas ultimately with carbon-free electricity in new buildings will help the City to mitigate the impact of climate change on local conditions, while also continuing to set an example for other cities to follow.

CONCLUSION

Staff recommends approving *An Ordinance of the City of San José Amending Chapter 17.845 of Title 17 of the San José Municipal Code to Amend Sections 17.845.010, 17.845.020, 17.845.030, 17.845.040, 17.845.050, and 17.845.060 and Add Section 17.845.045 to Prohibit Natural Gas Infrastructure in Newly Constructed Buildings* effective on August 1, 2021 to apply the City's natural gas infrastructure prohibition to all new construction building types with limited exemptions. This update is shown to be cost-effective under the State's methodology and will provide numerous health, safety, and greenhouse gas reduction benefits.

EVALUATION AND FOLLOW-UP

Staff will continue to return to Council semi-annually with a Climate Smart update. Staff will track data associated with the compliance of the City's reach code and natural gas infrastructure prohibition and report back to Council in May 2021 and annually thereafter, pursuant to City Council direction at the September 17, 2019 City Council meeting in which the building reach code was adopted. Staff will provide progress updates to the Transportation and Environment Committee and City Council on Climate Smart San José activities on a semi-annual basis.

CLIMATE SMART SAN JOSÉ

The recommendation in this memorandum aligns with one or more Climate Smart San José energy, water, or mobility goals:

- Strategy 1.1: Transition to a renewable energy future
- Strategy 2.2: Make homes efficient and affordable for our residents
- Strategy 3.2: Improve our commercial building stock

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the November 17, 2020 City Council meeting.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office, City Manager's Office, Community Energy Department, Housing Department, and Office of Economic Development.

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FISCAL/POLICY ALIGNMENT

The recommendations align with the Climate Smart San José strategies and the City's Envision 2040 General Plan approved by City Council.

CEQA

Categorically Exempt, File No. ER20-202, CEQA Guideline Section 15308 Actions by Regulatory Agencies for Protection of the Environment.

/s/
ROSALYNN HUGHEY
Director, Planning, Building, and Code Enforcement

/s/
KERRIE ROMANOW
Director, Environmental Services

For questions, please contact Ken Davies, Deputy Director, Environmental Services Department, at (408) 975-2587.

Attachments:

Attachment A – *2019 High-Rise Residential New Construction Reach Code Cost-Effectiveness Study for the City of San Jose (Climate Zone 4)*

Attachment B – Updated Natural Gas Infrastructure Prohibition Ordinance Webinar Questions and Answers

Attachment C – Summary of All-Electric Reach Codes

