CED AGENDA: 6/24/19
ITEM: D (5)

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: COMMUNITY & ECONOMIC DEVELOPMENT COMMITTEE

FROM: Rosalynn Hughey
Kerrie Romanow

SUBJECT: **SAN JOSE BUILDING REACH CODE UPDATE**

DATE: June 10, 2019

Approved Kim Walesh

Date June 14, 2019

RECOMMENDATION

Accept staff's report on the work that has been done to date on a proposed City of San José Building Reach Code, in conjunction with Climate Smart San José.

BACKGROUND

The climate challenges of this century directly affect the quality of life of all residents in San José. Over the past two years, across California and in the City, there have been more frequent and disruptive flooding, degraded air quality from massive wildfires, and record-breaking extreme heat events. These events, in turn, affect the health of residents and visitors, the safety of neighborhoods, the success of businesses and institutions, and the viability of plants and animals in local parks.

In response to the impacts of climate change, the City of San José was one of the first U.S. cities to adopt a Paris Agreement-aligned climate action plan: Climate Smart San José. Approved by City Council in February 2018, Climate Smart San José (Climate Smart) has specific goals and reduction strategies to reduce San Jose's greenhouse gas (GHG) emissions. Climate Smart San José establishes a goal that by 2020, 100 percent of new homes will be zero net energy (ZNE). As defined in Climate Smart, a ZNE building is one which is zero net carbon emissions, meaning that it would need to be all-electric with a clean energy source (i.e. via the grid and/or on-site renewable energy).

In order to further the Climate Smart goals, homes and commercial buildings built in San José will need to be designed to exceed the requirements of the 2019 Building Energy Efficiency Standards and CALGreen Building Standards (to be implemented in 2020). Every three years, cities and counties across the state adopt new building codes. Cities may also adopt building codes that are more advanced related to energy efficiency or conservation than those required by the State, known as "reach codes". Implementing a reach code for San José can have several benefits, such as:

- increased savings of both energy and money,
- reduced GHG emissions and implemented actions in Climate Smart San José through zero net carbon emission buildings and building electrification, and
- alignment with future state building codes and market benefits.

Additionally, the benefits of GHG-free electricity supplied by San José Clean Energy (SJCE) can best be realized by electrification of buildings and facilitation of electric vehicle use, which would be facilitated through the adoption of a reach code. Electrification will help transition residents and businesses away from the use of natural gas for space and water heating and gasoline for transportation to clean energy provided by SJCE. This will provide financial benefits for the City, which can then fund future electrification incentives.

The California Building Energy Efficiency Standards is comprised of different categories; residential, non-residential, high rise residential and hotel/motel. The residential category includes buildings, both single-family and multifamily, of three stories or less. High rise residential includes multifamily of four stories or greater. The non-residential category includes everything else except hotels and motels. A San José Reach Code would align with California Energy Standards and have separate, categorized requirements for residential and non-residential buildings.

Additional requirements for a reach code for energy standards are: 1) it must be at least as stringent as the statewide code; 2) it must be cost effective as defined by standards set by the California Energy Commission (CEC); 3) it must be submitted to and approved by the CEC; 4) it may not preempt federal appliance regulations; and 5) it must be re-approved with each three-year energy code update. The California Statewide Codes and Standards Program completed cost effectiveness studies for use statewide in the current building code adoption cycle to justify certain types of reach codes for both residential and non-residential new construction. Jurisdictions may also develop additional studies if needed to proceed with their specific reach code. Electric vehicle charging infrastructure (EVCI) requirements going beyond building code do not need a cost effectiveness study or separate CEC approval since they are not directly related to a building's energy efficiency.

In October of 2018, the City of San José was one of 25 cities to be awarded a grant under the American Cities Climate Challenge (ACCC). City Council approved the City's scope of work in its ACCC memorandum of understanding at the February 26, 2019 City Council meeting. ACCC will provide a support package of in-kind services valued at $2.5 million over a two-year period concluding at the end of 2020. The support package includes personnel resources, funding/or support from technical partners, technical assistance, access to trainings and communications support. As part of its ACCC commitment, the City agreed to pursue adoption of a reach code for electric vehicle and solar-readiness in new residential and commercial construction. In order to advance this initiative, the City has partnered with the New Buildings Institute (NBI) through the ACCC to facilitate the reach code development process, including stakeholder engagement. The reach code timing will be aligned with the City's implementation of the 2019 CA Energy Standards, which will go into effect on January 1, 2020. Due to the CEC's review and approval

period for a reach code, the ordinance for the San José Reach Code must be approved by City Council in August 2019, in order to align with the January 1, 2020 implementation date. The adoption of the 2019 edition of California Codes will occur separately from the reach code adoption.

ANALYSIS

Based on the City's latest five-year development forecast from February of this year, available on the City of San Jose Planning website, San José can conservatively expect roughly 350 single-family residences, 2,400 multifamily residences and 2.4 million square feet of commercial/industrial construction per year, over the next three years. Table 1, prepared by a regional consortium (TRC Consulting, Peninsula Clean Energy & Silicon Valley Clean Energy) illustrates the amount of GHG potentially generated by the construction and operation of different building types under the existing 2016 code.

Table 1

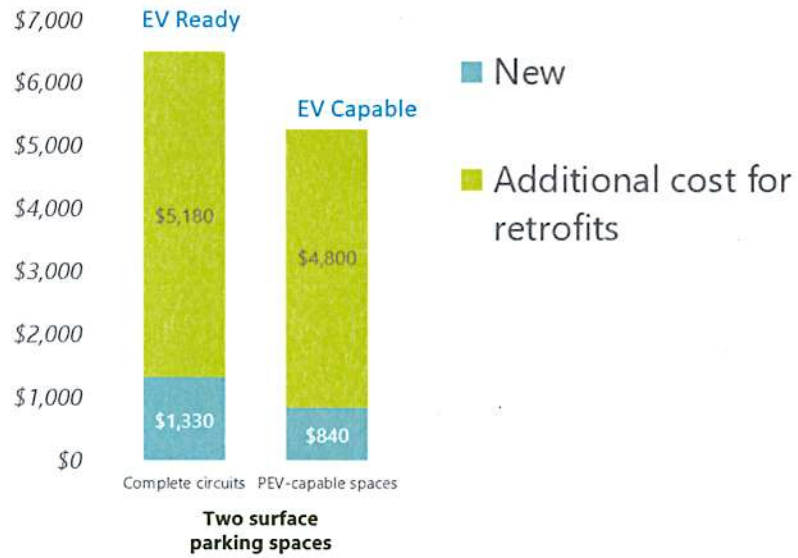
Building Type	Sq. Ft.	CO2/ Yr.		Units/ Yr.		Years in Service		Years in Code Cycle		Total CO2
Single- Family	2,700	2 tons	X	350	X	50	X	3	=	**105,000 tons**
Multi-Family	1,000	1 ton	X	2400	X	50	X	3	=	**360,000 tons**
Commercial/ Industrial	100,000	120 tons	X	24	X	50	X	3	=	**432,000 tons**
										1.7 trillion car miles

Courtesy TRC, PCE & SVCE

Based on this sample table, over a three-year period (the duration of time until a new building/energy code is adopted), new construction in San José could result in CO2e on the magnitude of the GHG equivalent of 1.7 trillion car miles over the next 50 years. If that same amount of construction occurred under the proposed reach code, the GHG generation would be substantially reduced. A reach code for new construction would have a long-lasting and significant impact in reducing the City's GHG emissions.

Adding additional amenities (including utility appliances and wiring) is more efficient during initial construction versus trying to retrofit a building after it is constructed. For example, Table 2, below shows the cost of new construction versus the cost of retrofit for EV Ready (essentially plug and play) and EV Capable (conduit and breaker space only) parking spaces.

Table 2 – Cost of EV Parking Spaces – New vs. Retrofit



Source: *"Driving Plug-In Electric Vehicle Adoption with Green Building Codes" by Energy Solutions, PG&E, ARB.* (Graphic courtesy TRC, PCE & SVCE)

As shown in the Table 2, there is a significant savings in adding the required fixtures during initial construction compared to having to add the fixtures as a retrofit. Other future costly retrofits that would be avoided by the reach code can include wiring/conduits and evaporate drains for heat pump water heaters, and wiring and upgraded panels for solar PV readiness

Regional Reach Code Efforts

At least 15 cities have already adopted a reach code in California (see Table 3).

Table 3 – California Cities that have adopted Reach Codes prior to 2019

City		Measures
Alameda County	2018	Solar PV
City of Brisbane	2017	Cool Roof, Solar PV
City of Chula Vista	2018	Outdoor Lighting
City of Del Mar	2018	Energy Efficiency
City of Davis	2017	Energy Efficiency, Solar PV
City of Fremont	2017	Lighting, Solar PV
City of Healdsburg	2017	Energy Efficiency
City of Lancaster	2018	Solar PV
Marin County	2017/8	Energy Efficiency
Mill Valley	2017	Energy Efficiency
City of Novato	2017	Energy Efficiency
City of Palo Alto	2016	Energy Efficiency, Solar PV, EV
Town of Portola Valley	2017	Energy Efficiency
City of San Francisco	2016	Solar PV or Solar Thermal
City of San Mateo	2016	Cool Roofs, Solar

In addition, regional efforts are now underway to support and encourage consistency of reach codes for cities located in the same county. Peninsula Clean Energy, Silicon Valley Clean Energy and the San Mateo County Office of Sustainability are convening stakeholders to develop model reach code language for electrification and electric vehicle charging infrastructure. They released a draft of model reach code language in May 2019. San Mateo County, Alameda County and Santa Clara County are currently exploring reach code options.

Regional reach code drafts for the 2019 building code cycle, supported by existing statewide cost-effectiveness studies, cover both residential and non-residential new construction. These draft reach codes have been framed to:

1. Incentivize building electrification by allowing all-electric buildings to simply meet building energy code.
2. Require mixed fuel (i.e. natural gas and electric) to go 14-29 percent above building energy code for residential new construction and 9-15 percent above building energy code for non-residential new construction.
3. Include electric vehicle charging infrastructure (EVCI) requirements to further and prepare for current and anticipated future electric vehicle uptake.

While it is important to consider San José's unique building development characteristics, there is a clear benefit to San José aligning as much as possible with regional reach codes to increase the regional consistency for new construction. In addition, it is important to note that there are specific types of uses that may have high energy demands (such as hospitals) that may need to be specifically exempted from the reach code.

Stakeholder Engagement

Throughout the reach code development process, Planning, Building and Code Enforcement (PBCE) and the Environmental Services Department (ESD) staff informed and coordinated with other City departments including the Departments of Community Energy, Housing, Public Works, San José Mineta International Airport, Department of Transportation, and the Office of Economic Development. With the assistance of other City departments, staff developed a stakeholder engagement list including approximately:

- 60 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, and utilities.
- More than 200 Neighborhood Associations for all 10 City Council Districts.

Reach code stakeholder engagement activities to date have included:

- City Reach Code webpage (http://www.sanjoseca.gov/index.aspx?NID=6357). Staff utilizes the webpage to keep the public informed about the City's reach code development process and timeline, including key meeting dates, agendas and content for stakeholder meetings, and periodic updates on our progress.

- Inviting stakeholders to two stakeholder engagement workshops covering:
    - Introduction to San José's reach code development process (May 29, 2019)
    - New non-residential construction focus (June 4, 2019)

- Presentation at the Silicon Valley Organization Housing & Development Policy Committee meeting (June 13, 2019)

Stakeholders have generally expressed understanding of the need for a reach code and have expressed support. Stakeholders have also shared the following feedback:

- Support of all-electric buildings cost competitiveness based on existing all-electric buildings that have been constructed or are being planned
- Interest in matching EVCI requirements to building use type (e.g. multifamily vs. retail)
- Interest in making all buildings solar-ready at minimum with potential exemptions depending on building limitations (e.g. shading)
- Concern about the potential for added costs and complications for high rise multifamily residential, both market rate and affordable, related to the proposed reach code, both in terms of water heating (conversion of gas boilers to electric) and additional EVCI
- Interest in addressing existing buildings through retrofit, either with this reach code or in the future
- Interest in the City providing incentives to encourage building electrification
- Concern whether the reach code would include remodels (it currently does not)
- Concern regarding the impact of additional on-site energy generation on the electric infrastructure/grid

Staff have responded to these items in the attached (Exhibit A) Frequently Asked Questions (also posted on the City's Reach Code webpage). Stakeholders will have the opportunity to continue to provide feedback through further engagement efforts. Staff will consider the input received in the development of a draft reach code for stakeholder input and the final reach code presented for City Council consideration.

Next Steps

Three additional stakeholder engagement workshops are scheduled to cover:

1. June 21, 2019 – Presentation at the Developers and Construction Roundtable
2. June 25, 2019 – New residential construction focus group
3. July 10, 2019 – Final input on draft reach code components

Staff will return to City Council in late summer 2019 to provide a reach code recommendation.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office.

CEQA

Under the provisions of Section 15308 of the California Environmental Quality Act (CEQA) as stated below, this project is found to be exempt from the environmental review requirements of Title 21 of the San José Municipal Code, implementing the California Environmental Quality Act of 1970, as amended. This categorical exemption excludes Actions by Regulatory Agencies for the 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, Interim Deputy Director, at (408) 975-2587.

Attachment:
Exhibit A: Frequently Asked Questions