BERKELEY CITY COUNCIL FACILITIES, INFRASTRUCTURE, TRANSPORTATION, ENVIRONMENT & SUSTAINABILITY COMMITTEE REGULAR MEETING

Thursday, October 03, 2019
2:00 PM

2180 Milvia Street, 6th Floor - Redwood Room

Committee Members:

Councilmembers Cheryl Davila, Kate Harrison, and Rigel Robinson

AGENDA

Roll Call

Announcement: Brown Act Participation Rules

Public Comment on Non-Agenda Matters

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes - July 18, 2019

Committee Action Items

The public may comment on each item listed on the agenda for action as the item is taken up. The Chair will determine the number of persons interested in speaking on each item. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Chair may limit the public comment for all speakers to one minute per speaker. Speakers are permitted to yield their time to one other speaker, however no one speaker shall have more than four minutes.

Following review and discussion of the items listed below, the Committee may continue an item to a future committee meeting, or refer the item to the City Council.

Committee Action Items

2. Amending Chapter 19.32 of the Berkeley Municipal Code to Require Kitchen Exhaust Ventilation in all Residential and Condominium Units Undergoing Renovations and Prior to Execution of a Contract for Sale or Close of Escrow
From: Councilmember Harrison
Referred: September 9, 2019
Due: February 17, 2020
Recommendation: 1. Adopt an ordinance amending Berkeley Municipal Code (BMC) 19.32 to require kitchen exhaust ventilation in residential and condominium units undergoing renovations and in all existing residential buildings prior to execution of a contract for sale or close of escrow.
2. Refer to the City Manager to draft a resolution establishing appropriate local climatic, geological or topographical findings as required by the California Building Standards Commission.
Financial Implications: See report
Contact: Kate Harrison, Councilmember, District 4, (510) 981-7140

3. Amending Chapter 19.34 of the Berkeley Municipal Code to Expand Automatic Gas Shut-Off Valve Requirements in Multifamily, Condominium and Commercial Buildings Undergoing Renovations and to All Existing Buildings Prior to Execution of a Contract for Sale or Close of Escrow
From: Councilmembers Harrison and Bartlett
Referred: August 26, 2019
Due: February 3, 2020
Recommendation:
1. Adopt an ordinance amending Berkeley Municipal Code (BMC) 19.34.040 to expand requirements for automatic natural gas shut-off valves or excess flow valves in multifamily, condominium and commercial buildings undergoing renovations and in all existing buildings prior to execution of a contract for sale or close of escrow.
2. Refer to Planning Department to draft a resolution establishing appropriate local climatic, geological or topographical findings as required by the California Building Standards Commission.
Financial Implications: See report
Contact: Kate Harrison, Councilmember, District 4, (510) 981-7140

4a. Recommendations for a Fossil Fuel Free Berkeley
From: Energy Commission
Referred: May 14, 2019
Due: October 29, 2019
Recommendation: The Berkeley Energy Commission recommends the City Council refer to the City Manager to implement the recommendations listed below as well as additional measures outlined in the attached report to aggressively reduce greenhouse gas (GHG) emissions in the city and the region.
Financial Implications: Unknown
Contact: Billi Romain, Commission Secretary, 981-7400

Committee Action Items

4b. Companion Report: Recommendations for a Fossil Fuel Free Berkeley
(Item Contains Supplemental Material)
From: City Manager
Referred: May 14, 2019
Due: October 29, 2019
Recommendation: Refer to the City Manager to continue to implement existing policies and programs that are consistent with the recommendations in the Berkeley Energy Commission's Fossil Fuel Free Berkeley Report, such as the Building Energy Saving Ordinance and development of new building codes that promote building electrification, and also to complete new evaluations and analyses of current and potential future greenhouse gas reduction programs and policies in order to inform next steps for accelerating progress to a Fossil Fuel Free Berkeley.
Financial Implications: See report
Contact: Timothy Burroughs, Planning and Development, 981-7400

Unscheduled Items

These items are not scheduled for discussion or action at this meeting. The Committee may schedule these items to the Action Calendar of a future Committee meeting.

5. Considering Multi-year Bidding Processes for Street Paving
From: Mayor Arreguin, Councilmembers Hahn, Harrison and Davila
Referred: March 11, 2019
Due: November 9, 2019
Recommendation: 1. Restate the recommendation approved at the December 11, 2018 Council meeting to create a two-year bidding process for street paving to realize savings by (a) reducing by 50% City staff time devoted to bidding and contracting processes over each two year period and (b) benefitting from reduced pricing which may be available for larger contracts that offer greater economies of scale and reduce contractors' bidding and contracting costs.
2. Short-term referral to the City Manager to explore the possibility, feasibility, costs, and benefits of bidding in increments of up to 5 years to encompass entire 5-year paving plans, or other ideas to more rationally and cost-effectively align the paving plan with budget cycles and reduce costs associated with frequent bid cycles for relatively small contracts.
Financial Implications: See report
Contact: Jesse Arreguin, Mayor, (510) 981-7100

Items for Future Agendas

- **Discussion of items to be added to future agendas**

Adjournment

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Written communications addressed to the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee and submitted to the City Clerk Department will be distributed to the Committee prior to the meeting.

This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Members of the City Council who are not members of the standing committee may attend a standing committee meeting even if it results in a quorum being present, provided that the non-members only act as observers and do not participate in the meeting. If only one member of the Council who is not a member of the committee is present for the meeting, the member may participate in the meeting because less than a quorum of the full Council is present. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Mark Numainville, City Clerk, (510) 981-6900.

COMMUNICATION ACCESS INFORMATION:
This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at (510) 981-6418 (V) or (510) 981-6347 (TDD) at least three business days before the meeting date. Attendees at public meetings are reminded that other attendees may be sensitive to various scents, whether natural or manufactured, in products and materials. Please help the City respect these needs.

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I hereby certify that the agenda for this special meeting of the Berkeley City Council was posted at the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way, as well as on the City's website, on September 26, 2019.

Mark Numainville, City Clerk

Communications

Communications submitted to City Council Policy Committees are on file in the City Clerk Department at 2180 Milvia Street, 1st Floor, Berkeley, CA.

01

BERKELEY CITY COUNCIL FACILITIES, INFRASTRUCTURE, TRANSPORTATION, ENVIRONMENT & SUSTAINABILITY COMMITTEE REGULAR MEETING MINUTES

BERKELEY CITY COUNCIL SPECIAL MEETING MINUTES

Thursday, July 18, 2019
2:00 PM

2180 Milvia Street, 6th Floor - Redwood Room

Committee Members:

Councilmembers Cheryl Davila, Kate Harrison, and Rigel Robinson

Roll Call: 2:05 p.m.

Present: Davila, Robinson, Harrison

Public Comment on Non-Agenda Matters: 1 Speaker.

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes for Approval - June 17, 2019

Action: M/S/C (Robinson/Davila) to approve the minutes as presented.
Vote: All Ayes.

Committee Action Items

The public may comment on each item listed on the agenda for action as the item is taken up. The Chair will determine the number of persons interested in speaking on each item. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Chair may limit the public comment for all speakers to one minute per speaker. Speakers are permitted to yield their time to one other speaker, however no one speaker shall have more than four minutes.

Following review and discussion of the items listed below, the Committee may continue an item to a future committee meeting, or refer the item to the City Council.

Committee Action Items

2a. Recommendations for a Fossil Fuel Free Berkeley
From: Energy Commission
Referred: May 14, 2019
Due: October 29, 2019
Recommendation: The Berkeley Energy Commission recommends the City Council refer to the City Manager to implement the recommendations listed below as well as additional measures outlined in the attached report to aggressively reduce greenhouse gas (GHG) emissions in the city and the region.
Financial Implications: Unknown
Contact: Billi Romain, Commission Secretary, 981-7400

2b. Companion Report: Recommendations for a Fossil Fuel Free Berkeley
From: City Manager
Referred: May 14, 2019
Due: October 29, 2019
Recommendation: Refer to the City Manager to continue to implement existing policies and programs that are consistent with the recommendations in the Berkeley Energy Commission's Fossil Fuel Free Berkeley Report, such as the Building Energy Saving Ordinance and development of new building codes that promote building electrification, and also to complete new evaluations and analyses of current and potential future greenhouse gas reduction programs and policies in order to inform next steps for accelerating progress to a Fossil Fuel Free Berkeley.
Financial Implications: See report
Contact: Timothy Burroughs, Planning and Development, 981-7400

Action: No speakers. Items 2a and 2b were continued to the next regularly scheduled meeting.

Committee Action Items

3. Considering Multi-year Bidding Processes for Street Paving
From: Mayor Arreguin, Councilmembers Hahn, Harrison and Davila
Referred: March 11, 2019
Due: September 15, 2019
Recommendation: 1. Restate the recommendation approved at the December 11, 2018 Council meeting to create a two-year bidding process for street paving to realize savings by (a) reducing by 50% City staff time devoted to bidding and contracting processes over each two year period and (b) benefitting from reduced pricing which may be available for larger contracts that offer greater economies of scale and reduce contractors' bidding and contracting costs.
2. Short-term referral to the City Manager to explore the possibility, feasibility, costs, and benefits of bidding in increments of up to 5 years to encompass entire 5-year paving plans, or other ideas to more rationally and cost-effectively align the paving plan with budget cycles and reduce costs associated with frequent bid cycles for relatively small contracts.
Financial Implications: See report
Contact: Jesse Arreguin, Mayor, 981-7100

Action: No speakers. M/S/C (Davila/Harrison) to grant the author, Mayor Arreguin a 60-day extension to continue to work with staff. The item was continued to the next regularly scheduled meeting.

Unscheduled Items

These items are not scheduled for discussion or action at this meeting. The Committee may schedule these items to the Action Calendar of a future Committee meeting.

- **None**

Items for Future Agendas

- **None**

Adjournment

Action: M/S/C (Harrison/Davila) to adjourn the meeting.
Vote: All Ayes.

Adjourned at 2:09 p.m.

I hereby certify that this is a true and correct record of the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee meeting held on July 18, 2019.

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Michael MacDonald, Assistant City Clerk

02

Kate Harrison
Councilmember District 4

ACTION CALENDAR
September 24, 2019

To: Honorable Mayor and Members of the City Council

From: Councilmember Harrison

Subject: Amending Chapter 19.32 of the Berkeley Municipal Code to Require Kitchen Exhaust Ventilation in all Residential and Condominium Units Undergoing Renovations and Prior to Execution of a Contract for Sale or Close of Escrow

RECOMMENDATION

1. Adopt an ordinance amending Berkeley Municipal Code (BMC) 19.32 to require kitchen exhaust ventilation in residential and condominium units undergoing renovations and in all existing residential buildings prior to execution of a contract for sale or close of escrow.

2. Refer to the City Manager to draft a resolution establishing appropriate local climatic, geological or topographical findings as required by the California Building Standards Commission.

POLICY COMMITTEE TRACK

Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee

BACKGROUND

The California Building Standards Code, or Title 24 of the California Code of Regulations, specifies the standards for buildings and other structures in California. Title 24 is intended to protect public health, safety, and general welfare building occupants, and is updated at the state level and adopted by local jurisdictions every three years. Municipalities are permitted to make local amendments to the Building Standards Code[1] as deemed necessary for general welfare, as long as they are submitted to the California Building Standards Commission with the necessary findings. The ideal time to

[1] "Local Amendments to Building Standards—Ordinances," California Building Standards Commission, https://www.dgs.ca.gov/BSC/Codes/Local-Jurisdictions-Code-Ordinances.

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update local buildings codes is before the next code cycle. Berkeley will adopt the 2019 code on January 1, 2020.

Cooktops contribute to toxic indoor air quality. A 2013 Lawrence Berkeley National Laboratory (LBNL) study found that "60 percent of homes in the state that cook at least once a week with a gas stove" produce toxic levels of nitrogen dioxide, formaldehyde and carbon monoxide exceeding federal standards for outdoor air quality.[2] A prior LBNL study found that the "aggregate health consequences of poor indoor air quality…are as significant as those from all traffic accidents or infectious diseases in the United States."[3] Even electric cooktops generate toxic particulate matter. Unfortunately, the Environmental Protection Agency does not currently regulate indoor air quality.

Researchers in the United States are Australia have begun to link the use of natural gas stoves with asthma attacks and associated hospitalizations.[4] Asthma and its relationship to natural gas and other forms of cooking present profound questions about equity.[5] Researchers from the University of California, Berkeley, and the University of California, San Francisco found that the highest asthma rates in Berkeley and Oakland tracked areas that were redlined pursuant to racist housing policies.[6] This issue is compounded by state and regional efforts to boost home efficiency to trap air indoors.

The state currently requires kitchen exhaust ventilation systems in all new residential construction, but not for existing building renovations, nor at time of sale. Ventilation systems are designed to remove combustion and other cooktop byproducts from the residential unit to preserve air quality.

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[2] "Pollution in the Home: Kitchens Can Produce Hazardous Levels of Indoor Pollutants," Julie Chao, Lawrence Berkeley National Laboratory, July 23, 2013, https://newscenter.lbl.gov/2013/07/23/kitchens-can-produce-hazardous-levels-of-indoor-pollutants/.

[3] *Id.*

[4] Amy Mitchell-Whittington, "Cooking with gas, damp housing may cause childhood asthma: study," Brisbane Times, April 15, 2018, https://www.brisbanetimes.com.au/national/queensland/cooking-with-gas-damp-housing-may-cause-childhood-asthma-study-20180415-p4z9pz.html; Nadia N. Hansel et al., "A Longitudinal Study of Indoor Nitrogen Dioxide Levels and Respiratory Symptoms in Inner-City Children with Asthma," Environmental Health Perspectives., October 2008, https://pdfs.semanticscholar.org/e099/2f996c97844af8fbcf86b4824fbb7b1cf092.pdf.

[5] A 2017 California Public Health Department report found that asthma is 30% more prevalent for African Americans and 40% more prevalent for Asian Americans and Native Americans than whites. Gay/lesbian and bisexual men and women have 40-60% higher asthma prevalence than straight men and women. Hispanics and Asians born in the U.S. are more than twice as likely to have current or lifetime asthma than Hispanics and Asians born outside of the U.S. *See* California Department of Health, "Asthma Prevalence in California: A Surveillance Report," January 2017, https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHIB/CPE/CDPH%20Document%20Library/Asthma_Surveillance_in_CA_Report_2017.pdf.

[6] UC Berkeley Public Health, "Historically redlined communities face higher asthma rates" May 2019, https://sph.berkeley.edu/historically-redlined-communities-face-higher-asthma-rates.

This ordinance proposes requiring kitchen exhaust ventilation systems in any multifamily residential or condominium units subject to an addition, alteration or repair for which a building permit is issued and the valuation for the work exceeds $10,000. The requirement would also apply prior to execution of a contract for sale or close of escrow.

The transfer of property currently triggers various state and local building code requirements. For example, at time of sale the state health and safety code requires that, gas water heaters are seismically braced, anchored, or strapped.[7] Other local ordinances related to environment, such as the BMC 19.81: the Building Energy Saving Ordinance, require energy efficiency reports prior to time of sale. The intention of Section 403.7.4 is to ensure that all buildings and units therein that are sold in Berkeley include exhaust ventilation systems, therefore enhancing air quality and public safety across the existing building stock.

FINANCIAL IMPLICATIONS

Staff time to submit ordinance to the Building Standards Commission and to draft findings resolution. In addition, building inspector staff time will be necessary to compliance with new provisions.

ENVIRONMENTAL SUSTAINABILITY

Mandating kitchen exhaust ventilation systems in residential units undergoing renovation and all units at sale will enhance indoor air quality.

CONTACT PERSON

Councilmember Kate Harrison, Council District 4, (510) 981-7140

ATTACHMENTS

1: Ordinance

[7] Health and Safety Code § 18031.7, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=18031.7.&lawCode=HSC

AMENDING CHAPTER 19.32 OF THE BERKELEY MUNICIPAL CODE TO REQUIRE KITCHEN EXHAUST VENTILATION IN ALL RESIDENTIAL AND CONDOMINIUM UNITS UNDERGOING RENOVATIONS AND PRIOR TO EXECUTION OF A CONTRACT FOR SALE OR CLOSE OF ESCROW

BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That Berkeley Municipal Code Section 19.32 is hereby amended to read as follows:

Chapter 19.32

BERKELEY MECHANICAL CODE

Sections:

19.32.040 Residential Kitchen Exhaust Ventilation.
Chapter 4 of the 2019 California Mechanical Code is adopted in its entirety subject to the modifications thereto which are set forth below.

403.7.3.0 General Requirements for Residential Kitchen Exhaust Ventilation.
Residential kitchen exhaust ventilation systems installed in compliance with this Section pursuant to a building permit issued on or after the effective date of this Section shall comply with all applicable requirements of the Berkeley Mechanical Code.

403.7.3.1 Existing Multifamily and Condominium Buildings.
Residential kitchen exhaust ventilation systems are required in any multifamily residential or condominium unit subject to an addition, alteration or repair for which a building permit is issued on or after the effective date of this Section and the valuation for the work exceeds $10,000.

403.7.4 Sale of Existing Buildings.
The requirement to install kitchen exhaust ventilation systems in multifamily or condominium buildings shall apply prior to entering into a contract of sale, or prior to the close of escrow when an escrow agreement has been executed in connection with a sale as follows:

1. in any residential or condominium building or structure, applicable to all units therein; or
2. in an individual condominium unit.

Section 2. The effective date of this amendment shall be January 1, 2020, or the effective adoption date of the 2019 California Building Standards Code, whichever is sooner.

Section 3. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.

Kate Harrison
Councilmember District 4

03

ACTION CALENDAR
September 10, 2019

To: Honorable Mayor and Members of the City Council

From: Councilmembers Harrison and Bartlett

Subject: Amending Chapter 19.34 of the Berkeley Municipal Code to Expand Automatic Gas Shut-Off Valve Requirements in Multifamily, Condominium and Commercial Buildings Undergoing Renovations and to All Existing Buildings Prior to Execution of a Contract for Sale or Close of Escrow

RECOMMENDATION

1. Adopt an ordinance amending Berkeley Municipal Code (BMC) 19.34.040 to expand requirements for automatic natural gas shut-off valves or excess flow valves in multifamily, condominium and commercial buildings undergoing renovations and in all existing buildings prior to execution of a contract for sale or close of escrow.
2. Refer to Planning Department to draft a resolution establishing appropriate local climatic, geological or topographical findings as required by the California Building Standards Commission.

POLICY COMMITTEE TRACK

Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee

BACKGROUND

The California Building Standards Code, or Title 24 of the California Code of Regulations, specifies the standards for buildings and other structures in California. Title 24 is intended to protect public health, safety, and general welfare building occupants, and is updated at the state level and adopted by local jurisdictions every three years. Municipalities are permitted to make local amendments to the Building Standards Code[1] as deemed necessary for general welfare, as long as they are submitted to the California Building Standards Commission with the necessary findings. The ideal time to

[1] "Local Amendments to Building Standards—Ordinances," California Building Standards Commission, https://www.dgs.ca.gov/BSC/Codes/Local-Jurisdictions-Code-Ordinances.

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update local buildings codes is before the next code cycle. Berkeley will adopt the 2019 code on January 1, 2020.

Natural gas in buildings poses significant risks to health and safety. A recent ordinance adding Chapter 12.80 to the Berkeley Municipal Code phases out natural gas in new buildings.[2] This will make Berkeley's new building stock safer and greener over time, but there is an outstanding need to prevent seismic and other disasters in existing buildings.

Gas shut-off valves are a component of a plumbing system capable of preventing the flow within a gas piping system. Shut-off valves allow for a resident to stop the flow of gas in their homes in case of an emergency, such as an earthquake or a gas leak.

All existing buildings, if they have natural gas, should have a shut-off valve of some kind. However, manual shut-off valves require timely attention during a seismic event, physical access and exertion, and mechanical knowledge to operate. In case of a natural disaster, relying purely on manual shut-off valves can be dangerous. For example, following the 2010 San Bruno explosion, Pacific Gas & Electric officials testified before the National Transportation Safety Board that "gas feeding the flames could have been shut off an hour earlier if PG&E had automatic or remotely controlled valves on the pipeline that exploded."[3] Since the San Bruno explosion, gas companies across California have urged a fast transfer to automatic shut-off valves.

Currently, BMC 19.34.040 requires automatic gas shut-off valves in all new construction or existing buildings that undergo repair or alteration exceeding $50,000 consistent with sewer lateral requirements. However, it makes blanket exceptions for buildings with individually metered residential units when the building contains five or more residential units, unless the units are condominiums, putting renters at risk of physical harm.

In recommending this exception for multi-unit buildings in 2010, City staff intended to reduce the cost burden to property owners. For example, City staff were concerned that the ordinance would require very large multifamily buildings to install shut-off valves in every unit in a 50 unit building when completing a $50,000 renovation.[4]

While financial costs are important, there will also likely be significant costs to human life and property resulting from natural gas infrastructure during seismic events that far

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[2] Susie Cagle, "Berkeley became first US city to ban natural gas. Here's what that may mean for the future," The Guardian, https://www.theguardian.com/environment/2019/jul/23/berkeley-natural-gas-ban-environment.

[3] Paul Rogers, "PG&E officials grilled about automatic shut of valves," Mercury News, March 1, 2011, https://www.mercurynews.com/2011/03/01/pge-officials-grilled-about-automatic-shut-off-valves-3/.

[4] "Installation of Automatic Gas Shut-off Valves," Berkeley Planning and Development Department, July 13, 2010, https://www.cityofberkeley.info/recordsonline/api/Document/Af7NhvRQQKZ1%C3%81%C3%89xY9QpwmChW6QBqKp%C3%89scsKBcIRXOVsvA1QIgXjP%C3%89Rs2zLVn2kCnCNjn918yaZSDbGqiogMWpBM%3D/

outweigh the costs to property owners for installing shut-off valves. A more-tailored and comprehensive approach was adopted by the City of Los Angeles's 1997 policy in the wake of the Northridge Earthquake, requiring valves in all multifamily, condominium and commercial units when a permit for any addition, alteration or repair valued in excess of $10,000 is taken out affecting the entire building, or in specific units affected by work in excess of $10,000.[5]

This item proposes to apply the $50,000 threshold for all work affecting multifamily, condominium and commercial buildings exclusive of work affecting the units and apply a $10,000 threshold to work in excess of $10,000 inclusive of any individual unit. In addition, this item proposes maintaining the current single-family home requirement when a permit is taken out of any addition, alteration or repair valued in excess of $50,000.

Consistent with the Los Angeles code, the item removes the exception for commercial occupancies and uses in mixed use buildings of residential and non-residential occupancies with a single gas service line larger than 1 1/2 inches that serves the entire building. Berkeley City staff in 2010 previously suggested that pipes larger than 1 1/2 inches were marginally more expensive to retrofit with valves and therefore warranted an exception. Though upon further review, the few additional hundred dollars in labor and materials per valve does not warrant an exception due to ongoing risks to health and safety.

Berkeley is on top of one of California's most dangerous fault lines, the Hayward fault, making it prone to earthquakes. The extreme fire risk associated with natural gas infrastructure is illustrated by the 2017 U.S. Geological Survey stimulation of "a 7.0 quake on the Hayward fault line with the epicenter in Oakland." The agency's report predicted that "about 450 large fires could result in a loss of residential and commercial building floor area equivalent to more than 52,000 single-family homes and cause property (building and content) losses approaching $30 billion."[6] The report identified ruptured gas lines as a key fire risk factor. This finding mirrors the destructive gas fires resulting from the Loma Prieta (1989) and Northridge (1994) earthquakes.
According to the most recent census, 59.1% of units in Berkeley are occupied by renters.[7] It is vital to extend the shut-off valve requirement to rental units to prioritize the health and safety of all Berkeley residents and the broader community.

Beyond extending this protection to large rental buildings during major renovations, this ordinance amends BMC 19.34 to mirror the City of Los Angeles's code to require

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[5] City of Los Angeles Ordinance No. 171874, December 16, 1997, http://clkrep.lacity.org/onlinedocs/1995/95-0217-S1_ORD_171874_02-05-1998.pdf; *See also*, City of Los Angeles Plumbing Code Section 94.1217.0.

[6] "The HayWired earthquake scenario—Engineering implications," U.S. Geological Survey, April 18, 2018, https://pubs.er.usgs.gov/publication/sir20175013v2.

[7] "Bay Area Census: City of Berkeley" http://www.bayareacensus.ca.gov/cities/Berkeley.htm

installing automatic shut-off valves prior to execution of a contract for sale in all buildings and units therein.

The transfer of property triggers various state and local building code requirements. For example, at time of sale the state health and safety code requires that, gas water heaters are seismically braced, anchored, or strapped.[8] Other local ordinances related to environment, such as the BMC 19.81: the Building Energy Saving Ordinance, require energy efficiency reports prior to time of sale. The intention of Section 1209.4.2 is to ensure that all buildings that are sold in Berkeley include automatic gas shut-off valves, therefore enhancing seismic safety across the existing building stock.

FINANCIAL IMPLICATIONS
Staff time to submit ordinance to the Building Standards Commission and to draft findings resolution. In addition, building inspector staff time will be necessary to compliance with new provisions.

ENVIRONMENTAL SUSTAINABILITY
Mandating shut-off valves in rental units undergoing renovation and all units at sale will prevent the excess release of greenhouse gases (methane) due to gas leaks and fires during seismic events and other related emergencies.

CONTACT PERSON
Councilmember Kate Harrison, Council District 4, (510) 981-7140

ATTACHMENTS
1: Ordinance

[8] Health and Safety Code § 18031.7, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=18031.7.&lawCode=HSC

AMENDING CHAPTER 19.34 OF THE BERKELEY MUNICIPAL CODE TO EXPAND AUTOMATIC GAS SHUT-OFF VALVE REQUIREMENTS IN MULTIFAMILY, CONDOMINIUM AND COMMERCIAL BUILDINGS UNDERGOING RENOVATIONS AND TO ALL EXISTING BUILDINGS PRIOR TO EXECUTION OF A CONTRACT FOR SALE OR CLOSE OF ESCROW

BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That Berkeley Municipal Code Section 19.36.040 is hereby amended to read as follows:

19.34.040 Gas Shut-Off Valves.

Chapter 12 of the 2016~~6~~9 California Plumbing Code is adopted in its entirety subject to the modifications thereto which are set forth below.

1209.2 General Requirements for Gas Shut-Off Valves. Automatic gas shut-off valves installed either in compliance with this Section or voluntarily pursuant to a plumbing permit issued on or after the effective date of this Section, shall comply with the following:

1209.2.1 All valves shall:

1. Comply with all applicable requirements of the Berkeley Plumbing Code.

2. Be tested and listed by recognized testing agencies such as the Independent Laboratory of the International Approval Services (IAS), Underwriter's Laboratory (UL), International Association of Plumbing and Mechanical Officials (IAPMO) or any other agency approved by the State of California Office of the State Architect (OSA).

3. Be listed by the State of California Office of the State Architect (OSA).

4. Be installed on downstream side of the gas utility meter.

5. Be installed in accordance with the manufacturer's instructions.

6. Be installed in accordance with a plumbing permit issued by the City of Berkeley.

7. Provide a method for expedient and safe gas shut-off in an emergency.

8. Provide a capability for ease of consumer or owner resetting in a safe manner.

1209.2.2 Motion activated seismic gas shut-off valves shall be mounted rigidly to the exterior of the building or structure containing the fuel gas piping, unless otherwise specified in the manufacturer's installation instructions.

1209.3 Definitions

For the purpose of this Section terms shall be defined as follows:

AUTOMATIC GAS SHUT-OFF VALVE shall mean either a motion activated gas shut-off valve or device or an excess flow gas shut-off valve or device.

DOWNSTREAM OF GAS UTILITY METER shall mean all gas piping on the property owner's side of the gas meter and after the service tee.

EXCESS FLOW GAS SHUT-OFF VALVE shall mean an approved valve or device that is activated by significant gas leaks or overpressure surges that can occur when pipes rupture inside a structure. Such valves are installed at each appliance, unless otherwise specified by the manufacturer's installation instructions.

MOTION ACTIVATED GAS SHUT OFF VALVE shall mean an approved gas valve activated by motion. Valves are set to activate in the event of a moderate or strong seismic event greater than 5.0 on the Richter scale.

UPSTREAM OF GAS UTILITY METER shall mean all gas piping installed by the utility up to and including the meter and the utility's service tee.

1209.4 Devices When Required. Approved automatic gas shut-off or excess flow valves shall be installed as follows:

1209.4.1 New Construction. In any new building construction containing gas piping for which a building permit is first issued on or after the effective date of this Section.

1209.4.2 Existing Buildings. In any existing building, when any addition, alteration or repair is made for which a building permit is issued on or after the effective date of this Section and the valuation for the work exceeds $50,000.

1209.4.2.1 Multifamily, Condominium and Commercial Buildings.

1. In any existing commercial, multifamily and condominium and commercial building, and applicable to all units and tenant spaces therein if the building is individually metered and lacks a central automatic shut-off valve downstream of the utility delivery point, when any addition, alteration or repair exclusive of individual units or tenant spaces is made for which a building permit is issued on or after the effective date of this Section and the valuation for the work exceeds $50,000.
2. In any existing commercial, multifamily and condominium unit for all gas piping serving only those individual units, when any addition, alteration or repair inclusive of individual units or tenant spaces is made for which a building permit is issued on or after the effective date of this Section and the valuation for the work exceeds $10,000.

1209.4.3 Sale of Existing Buildings.
The requirement to install seismic gas shutoff or excess flow shutoff valves shall apply

prior to entering into a contract of sale, or prior to the close of escrow when an escrow agreement has been executed in connection with a sale as follows:

1. in any building or structure, and all units therein when gas piping serving those units lacks a central automatic shut-off valve downstream of the utility delivery point; or
2. in an individual condominium unit for all gas piping serving that individual unit.

1209.4.4 Exceptions:

~~1. Buildings with individually metered residential units when the building contains 5 or more residential units, unless the units are condominiums.~~

~~2. For residential or mixed use condominium buildings, valves are required when the value of the work exceeds $50,000 in any single condominium unit or when any work done outside of the units exceeds $50,000.~~

~~3. Commercial occupancies and uses in mixed use buildings of residential and non-residential occupancies with a single gas service line larger than 1 1/2 inches that serves the entire building.~~

14. Automatic gas shut-off valves installed with a building permit on a building prior to the effective date of this Section provided the valves remain installed on the building or structure and are adequately maintained for the life of the building or structure.

25. Automatic gas shut-off valves installed on a gas distribution system owned or operated by a public utility.

Section 2. The effective date of this amendment shall be January 1, 2020, or the effective adoption date of the 2019 California Building Standards Code, whichever is sooner.

Section 3. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.

Energy Commission

4a

ACTION CALENDAR
May 14, 2019

To: Honorable Mayor and Members of the City Council

From: Berkeley Energy Commission

Submitted by: Ryan Bell, Chairperson, Berkeley Energy Commission

Subject: Recommendations for a Fossil Fuel Free Berkeley

RECOMMENDATION

The Berkeley Energy Commission recommends the City Council refer to the City Manager to implement the recommendations listed below as well as additional measures outlined in the attached report to aggressively reduce greenhouse gas (GHG) emissions in the city and the region.

FISCAL IMPACTS OF RECOMMENDATION

Unknown.

CURRENT SITUATION AND ITS EFFECTS

This report responds to the Fossil Free Berkeley and Climate Emergency referrals from the June 12, 2018 Council meeting sponsored by Council member Davila, Mayor Arreguin and Councilmember Harrison. The Energy Commission has prepared a Fossil Fuel Free Berkeley Report including the following recommendations to achieve the goals outlined by council to address the climate emergency and transition Berkeley away from fossil fuels.

Four Fast Track Proposals

- Opt all East Bay Community Energy accounts to 100% renewable electricity in 2019. This would result in an immediate 10% reduction in GHGs.
- Integrate greenhouse gas (GHG) reduction goals into the objectives and responsibilities of every city department. Amend funding priorities to support this initiative.
- Develop an updated Climate referendum to put before the voters that includes challenging proposals and why they are necessary. A successful referendum campaign would provide the platform for massive public education and support Council decision making.
- Lead a regional effort to change the Utility Users Tax structure in order to assess taxes on natural gas usage separately from electricity usage, followed by a referendum asking voters to approve raising the natural gas usage tax. Funds raised would be dedicated to de-carbonization efforts.

Summary of Recommendations

Citywide Transportation

1. Accelerate infrastructure changes to support walking, biking, and small electric and human powered vehicles.
    a. Build all high priority projects in the city's bicycle, pedestrian, and BeST plans including tier 1 projects in the bike plan by 2025.
    b. Re-prioritize road and sidewalk capital expenditures to accelerate changes in favor of walking, human powered vehicles, and other low carbon footprint mobility alternatives.
    c. Add 3 FTE to the Transportation Division to expedite implementation.
2. Explore developing Berkeley shuttle services similar to the Emery Go-Round using EVs.
3. Develop effective communication and education strategies. Continue to expand programs that encourage residents to shift to fossil fuel free modes of transport.
4. Consider free transit passes for youth, restricted vehicle access to certain streets, and additional parking fees. Funds raised would be used to support fossil fuel free transportation programs.

Residential and Commercial Buildings

1. Opt all accounts in Berkeley up to 100% renewable EBCE electricity in 2019, with a policy of no added cost for CARE customers and an outreach campaign to enroll all eligible customers in the CARE program. This is the most significant action the city can take to reduce GHGs.
2. Expand BESO and include electrification along with energy efficiency. Consider more triggers that require an energy audit, more detailed energy audits, requiring the seller to complete the audit to the buyer, and requiring implementation of some of audit recommendations.
3. Stop expansion of natural gas infrastructure by prohibiting gas cooktops and dryers in new residences. Place a moratorium on new gas hook ups if possible.
4. Funding options for electrification and energy efficiency upgrades:
    a. Sales transfer tax rebates, similar to the seismic rebate but tied to implementation of BESO recommendations.
    b. A new, very low interest revolving loan fund.
    c. Strategic relaxation of the Planning Code in exchange for electrification and energy efficiency measures.
5. Develop an effective communication and education strategy that reaches the Berkeley community at large. This strategy should include updating the City’s permit service center website to reflect the City’s prioritization of electrification, and low carbon footprint and low toxic construction. The City’s website needs to offer clear guidance reflecting the urgency of the climate crisis.

Regional Action

1. Lead a regional effort to make changes to the Utility Users Tax structure in order to assess taxes on natural gas usage separately from electricity usage. The City Council adopted a resolution in favor of this change and is awaiting support from other cities in the region to share the fees PGE would charge to modify the billing. Once complete, the City should submit a referendum to voters that would raise the tax on natural gas usage and dedicate the funds to de-carbonization efforts.
2. Encourage the Bay Area Air Quality Management District (BAAQMD) to adopt rules with future effective dates to prohibit sale of gas powered appliances. It has used the authority in the past to prohibit the sale of polluting products like high VOC paints and to restrict installation of wood burning fireplaces.
3. Increase regional and support state efforts to expand availability of low global warming potential refrigerant, heat pump space and water heaters for the retrofit markets.
4. Initiate regional policy consistent with fossil free goals for ride hailing services and the introduction of autonomous vehicles. Support state programs that restrict the use of fossil fuel by ride hailing services and autonomous vehicles. Regulate these services to reduce overall per capita VMT.
5. Explore viability of reducing R-1 zoning to increase housing availability, opportunities for home ownership and improve transit access through increasing densification. Such transit oriented development can provide the density to support expansion of regional transit.

Given statutory limitations on specific authorities held by the City, the Energy Commission is not able to determine a date by which Berkeley could be completely fossil fuel free. However, aiming to be fossil fuel free by 2030 to the fullest extent possible is a compelling goal. Urgency prompts the Commission to recommend aggressively prioritizing options with high early impacts. Lastly, Berkeley will only become a carbon sink if it is also virtually fossil free. The City has little capacity to sequester carbon.

At the January 23, 2019 meeting, the commission took the following action:

Action: Motion/Second (Weems/Patel) to approve the Fossil Fuel Report with amendments and recommend City Council refer to the City Manager to implement the recommendations in the report to aggressively reduce GHG emissions in the city and the region.

Vote: Ayes –Leger, Bell, Patel, Weems, Paulos, Stromberg; Noes – None; Abstain – None; Absent – Luce, Schlachter.

BACKGROUND
The Fossil Free Berkeley and Climate Emergency resolutions asked the Energy Commission to consider actions “to further implement the Climate Action Plan and establish the goal of becoming a Fossil Fuel Free Berkeley” and to consider several actions the city might take as part of this review.

ENVIRONMENTAL SUSTAINABILITY
These recommendations are intended to accelerate citywide reductions in GHGs.

RATIONALE FOR RECOMMENDATION
While making recommendations for all of the actions the Council requested that the commission consider, the main recommendations for reducing GHG emissions focus on transportation and residential and commercial buildings as they are responsible for 98% of Berkeley’s GHG emissions.

ALTERNATIVE ACTIONS CONSIDERED
None considered.

CITY MANAGER
See Companion Report.

CONTACT PERSON
Billi Romain, Energy Commission Secretary

Attachments:
1: Berkeley Energy Commission Recommendations for a fossil fuel free Berkeley.

Fossil Free Berkeley Report

Berkeley Energy Commission January 23, 2019

Council Referral

On June 12, the Berkeley City Council passed item 30 “Fossil Free Berkeley” which refers “to the Energy Commission and Transportation Commission consideration of the proposed resolution or similar action to further implement the Climate Action Plan and establish the goal of becoming a Fossil Fuel Free Berkeley, and further consider:

> Establishing a date by which we are committed to being a Fossil Fuel Free City;
>
> Opposing further transportation of oil, gas, and coal;
>
> Fully implementing Berkeley Deep Green Building, raising the citywide LEED certification requirement above the current LEED Silver, and applying the same requirements to newly constructed city facilities, and major renovations;
>
> Requiring all future City government procurements of vehicles to minimize emissions, and establishing a goal and plan for transitioning the city’s vehicle fleet to all electric vehicles;
>
> Establishing a goal and plan for transitioning to 100% renewable energy for municipal operations and a community wide goal of 100% reductions by 2030;
>
> Formally opposing the recent expansion of offshore drilling by the Trump Administration; and
>
> Calling for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure.”

On June 12, the Berkeley City Council also passed item 49 “Declaration of a Climate Emergency” which refers “to the Energy Commission to study and report back to Council on **a** path for Berkeley to become a “Carbon Sink” as quickly as possible, and to propose a deadline for Berkeley to achieve this goal” ideally by 2030.

This Report is the Energy Commission’s response to Council’s June 12 referrals.

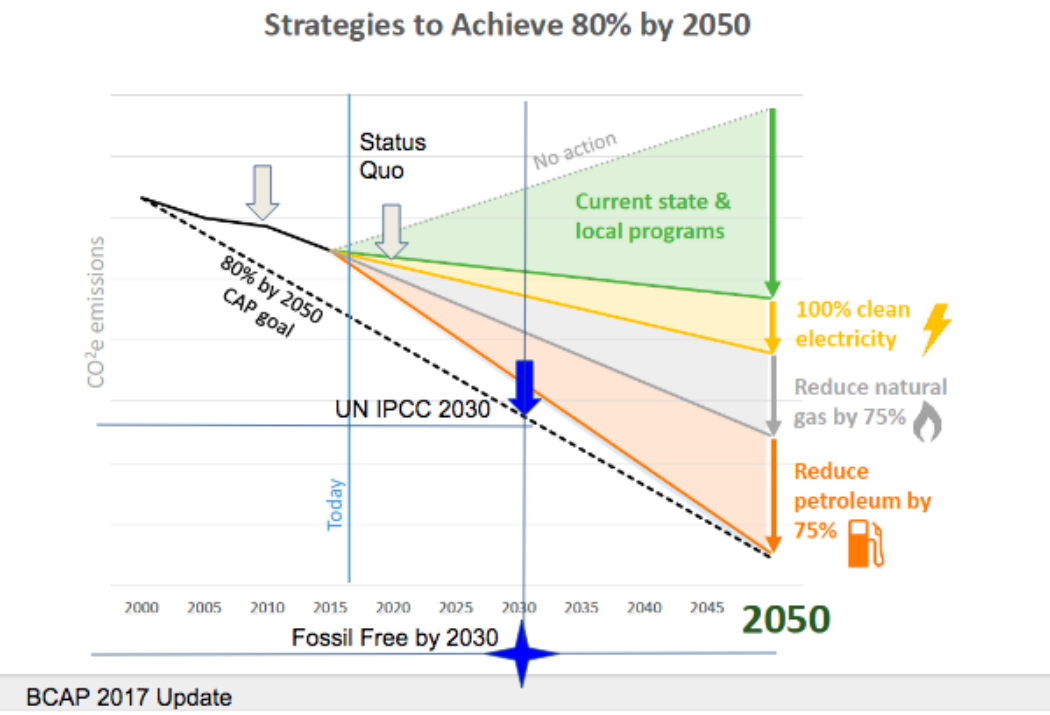
Executive Summary

The City Council's Climate Emergency Resolution lists record breaking climate related catastrophes and urges 'out of the box' thinking for solutions.

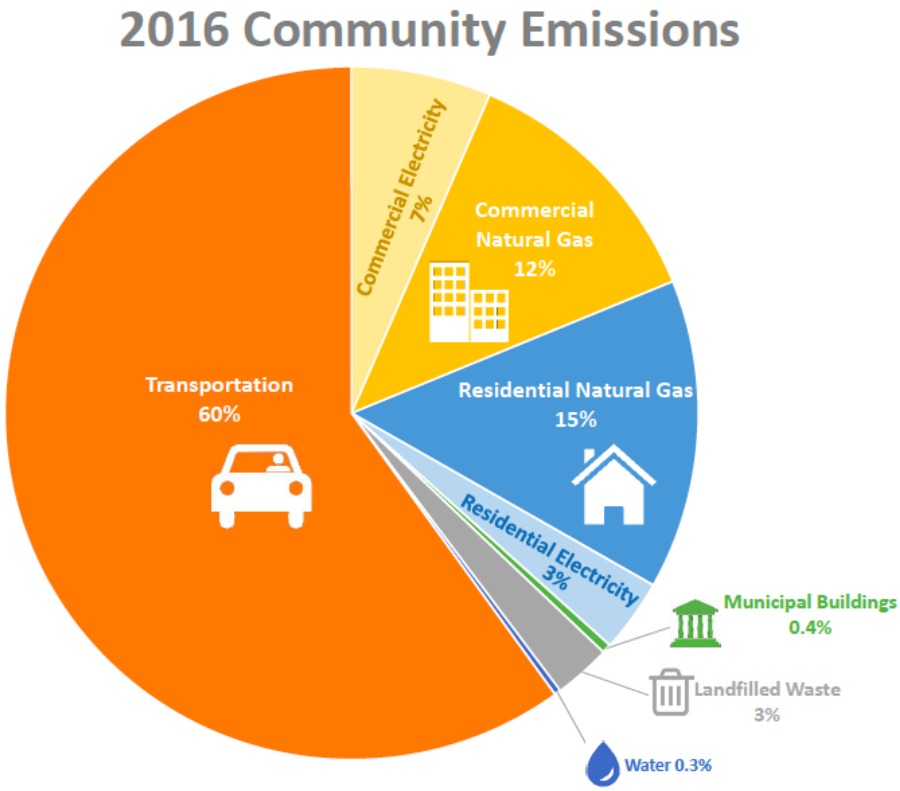
As if intended to support the Council's climate emergency declaration, the UN IPCC issued a heart rattling Special Report (IPCC-SR15, 10/9/2018) noting global temperatures are rising faster than predicted an myriad of cascading effects are happening sooner, and reiterating a worldwide goal to keep warming to no more than 1.5 °C. It asserts Greenhouse pollution must be reduced 45 percent from 2010 levels by 2030 and 100 percent by 2050.

The trajectory of the Berkeley Climate Action Plan's 2020 emission reduction targets, extended to 2030, is roughly in line with the IPCC-SR15 goal. However, according to the city's 2018 Annual Progress Update Berkeley is significantly behind in achieving the Climate Action Plan 2020 reduction goals, let alone extending that trajectory through 2030 as recommended by IPCC-SR15, or doubling down to become 100% fossil free by 2030 as to be considered in the Fossil Fuel Free Berkeley Resolution Council adopted in June.

IPCC and Fossil Free by 2030 goals superimposed on 2017 CAP update



Clearly in order to meet any of these 2030 goals we need a sea change in commitment. Specifically, we must exert the will to honestly accept and meet the challenge we face. The 2018 CAP Update shows where we need to act:



Given statutory limitations on specific authorities held by the City, the Energy Commission is not able to determine a date by which Berkeley could be completely fossil fuel free. However, aiming to be fossil fuel free by 2030 to the fullest extent possible is a compelling goal. Urgency prompts the Commission to recommend aggressively prioritizing options with high early impacts. Lastly, Berkeley will only become a carbon sink if it is also virtually fossil free. The City has little capacity to sequester carbon.

Four Fast Track Proposals

- Opt all East Bay Community Energy accounts to 100% renewable electricity in 2019. This would result in an immediate 10% reduction in GHGs.
- Integrate greenhouse gas (GHG) reduction goals into the objectives and responsibilities of every city department. Amend funding priorities to support this initiative.
- Develop an updated Climate referendum to put before the voters that doesn't soft pedal very challenging proposals and why they are necessary. A successful referendum campaign would provide the platform for massive public education and

support Council decision making. This referendum would be submitted to the voters in November 2020 and would include binding mandates and specific priorities for emissions reductions.

- Lead a regional effort to make changes to the Utility Users Tax structure in order to assess taxes on natural gas usage separately from electricity usage. Once complete, the City should submit a referendum to voters that would raise the tax on natural gas usage and dedicate the funds to decarbonization efforts.

Summary of Recommendations

Citywide Transportation

1. Accelerate infrastructure changes to support walking, biking, and small electric and human powered vehicles.
    a. Build all high priority projects in the city's bicycle, pedestrian, and BeST plans including tier 1 projects in the bike plan by 2025.

    b. Re-prioritize road and sidewalk capital expenditures to accelerate changes in favor of walking, human powered vehicles, and other low carbon footprint mobility alternatives.

    c. Add 3 FTE to the Transportation Division to expedite implementation.

2. Adopt financial incentives and disincentives to reduce transportation carbon emissions such as: free transit passes for youth, restricted vehicle access to certain streets, and additional parking fees. Funds raised would be used to support fossil fuel free transportation programs.

3. Explore developing Berkeley shuttle services similar to the Emery Go-Round using EVs.

4. Develop effective communication and education strategies. Continue to expand programs that encourage residents to shift to fossil fuel free modes of transport.

Residential and Commercial Buildings

1. Opt all accounts in Berkeley up to 100% renewable EBCE electricity with a policy of no added cost for CARE customers and an outreach campaign to enroll all eligible customers in the CARE program. This is the most significant immediate thing the city can to do reduce greenhouse gas emissions. A ton of GHG gases eliminated in 2019 is far more impactful in slowing climate change than a ton eliminated in 2025 or even in 2020 because of the impact of positive feedback loops.

2. Expand BESO and include electrification along with energy efficiency. Consider instituting more triggers that require an energy audit, more detailed energy audits, not allowing the seller to transfer the audit to the buyer, and required implementation of some of the measures recommended in the energy audit.

3. Stop expansion of natural gas infrastructure by prohibiting gas cooktops and dryers in new residences. Place a moratorium on new gas hook ups if possible.

4. Funding options for electrification and energy efficiency upgrades:

    a. Sales transfer tax rebates, similar to the seismic rebate but tied to implementation of BESO recommendations.

    b. A new, very low interest revolving loan fund.

    c. Strategic relaxation of the Planning Code, such as density and/or parking requirements, or accelerated review in exchange for electrification and energy efficiency measures.

5. Develop an effective communication and education strategy that reaches the Berkeley community at large. This strategy should include updating the City's website to reflect the City's prioritization of electrification, and low carbon footprint and low toxic construction. Updated green building information should be easily found on the Permit Service Center home page. The City's website needs to offer clear guidance reflecting the urgency of the climate crisis.

Regional Action

1. Lead a regional effort to make changes to the Utility Users Tax structure in order to assess taxes on natural gas usage separately from electricity usage. The City Council adopted a resolution in favor of this change and is awaiting support from other cities in the region to share the fees PGE would charge to modify the billing. It is time to look aggressively for the necessary funds and initiate the process. Once complete, the City should submit a referendum to voters that would raise the tax on natural gas usage and dedicate the funds to decarbonization efforts.

2. Encourage the Bay Area Air Quality Management District (BAAQMD) to adopt rules with future effective dates to prohibit sale of gas powered appliances. It has used the authority in the past to prohibit the sale of polluting products like high VOC paints and to restrict installation of wood burning fireplaces. Prohibiting sale of gas powered appliances would support electrification.

3. Increase regional and support state efforts to expand availability of low global warming potential refrigerant heat pump space and water heaters for the retrofit markets.

4. Initiate regional policy consistent with fossil free goals for ride hailing services and the introduction of autonomous vehicles. Support state programs that restrict the use of fossil fuel by ride hailing services and autonomous vehicles. Regulate these services to reduce overall per capita VMT.

5. Explore viability of reducing R-1 zoning to increase housing availability, opportunities for home ownership and improve transit access through increasing densification. Such transit oriented development can be adopted throughout the region to reduce development pressure on open spaces, provide more housing near jobs, and provide the density to support expansion of regional transit.

Analysis

I. Establishing a date by which we are committed to being a Fossil Fuel Free City

Recommendations

1. Consider a new ballot initiative for updating the Climate Action Plan in order to engage Berkeley residents in the comprehensive and ambitious efforts that will be needed.

2. The City should take aggressive, immediate, and sustained action to achieve the goal of a fossil free Berkeley to the fullest extent possible while simultaneously calling for necessary and immediate complementary emergency actions by other local, regional (e.g. MTC/ABAG, BAAQMD, RayREN) state and federal governmental bodies.

Discussion

The Energy Commission believes that the Berkeley Residents who initiated "Fossil Free Berkeley" intend it to apply to the entire city, not just municipal operations. Our comments reflect this point of view.

The two Council items 30 and 49 taken together suggest a goal of 2030 for Berkeley to become fossil free. It should be noted that this is far more ambitious than recommendations by the IPCC and recently adopted state laws[1] which taken together would suggest a goal of 50% reduction of greenhouse gas (GHG) emissions by 2030.

In some ways, Berkeley is better positioned than many cities to take the initiative to make accelerated and meaningful reductions in fossil fuel consumption.

- Unlike many other GHG emissions sectors, techniques for eliminating building GHGs--specifically improving energy efficiency, electrifying remaining energy uses, and using renewably generated electricity--are all commercially available, and can improve comfort and safety and offer property owners economic savings over time. Energy efficiency programs have been around for decades and the city's unique BESO energy audit program helps property owners prioritize efficiency upgrade spending. Because of recent developments in heat pump technologies making electric heat pump space and water heating more than 3 times as efficient as their gas equivalents and the dramatic

[1] SB 100 commits state utilities to provide 60% renewable electricity by 2030, and zero carbon electricity by 2045.
AB 3232 charges the California Energy Commission with assessing how to reduce emissions from the state's building stock by 40 percent below 1990 levels by 2030.
SB 1477 will expand the accessibility of clean heating technologies by promoting them in the market with incentives and training.
Executive Order B-55-18 commits California to economy-wide carbon neutrality by 2045.

increase of renewables on the electricity grid, all electric homes, even without solar panels, can produce substantially less GHGs than natural gas powered ones.

- Berkeley's size, density, mild and dry climate, and mass transit infrastructure make it ideally suited for an accelerated reduction in transportation related GHGs. The recent commercial introduction of vehicle sharing programs and proliferation of small electric vehicles such as electric bikes, scooters, and tricycles solve two of the main long time challenges to rethinking the transportation picture in Berkeley. They dramatically reduce costs of electric transport and offer small scale power assisted options, particularly for hills residents.

  According to the 2017 Bicycle Plan a "2015 survey of Berkeley residents showed 90 percent of Berkeley residents already bicycle or would consider bicycling if the right bikeway facility or roadway conditions were available. That is a larger percentage than any other city that has conducted a similar study, including Portland…."

- Finally, residents voted overwhelming in favor of the Berkeley Climate Action plan in 2006 and are likely to support new targeted programs to accelerate reductions in GHGs.

The challenges to accelerating GHG reductions cannot be overstated. They are technological, political and social. And, the more ambitious the reduction goals the greater the challenges. While Berkeley is better set up to meet a goal of 100% reduction by 2030 than many communities, it is still a very difficult task.

- The vast majority of buildings rely on natural gas for operation. Every one of them will need to be shifted from gas to all electric operation. Every fossil fuel operated vehicle on the roads will need to be eliminated. How do we motivate ourselves to electrify our buildings and give up our fossil fuel vehicles?

- As much as a quarter of Berkeley's past GHG reductions are a result of state programs such as the renewable fuels portfolio standard. To push ahead with an accelerated GHG reduction goal, the city will need to rely on local programs.

- There are real technological hurdles that need to be solved before complete electrification of the California or US economy can occur. It is hoped these problems will be solved by 2030 or much sooner. While they do not prohibit Berkeley from being fossil free by 2030 as an isolated entity, they do drive up the cost for some of the needed technologies, particularly in relationship to vehicles and battery storage. In addition, regional and state governments will be reluctant to set goals without confidence that the technologies are in place to meet them, so Berkeley will likely be out of step with others the more aggressively it pursues accelerated GHG reductions.

Finally, the urgency of the climate crisis requires use of the simplest, cheapest and most available tools at hand to achieve high early results. A ton of GHG gases eliminated in 2019 is far more impactful in slowing climate change than a ton eliminated in 2025 or even in 2020. Because of positive feedback loops, the effects of GHG emissions are amplified. For example warmer, dryer forests burn more which releases more CO2 which contributes to more forest fires. Establishment of new manufacturing facilities and a city scale power company would take decades. It will be far more effective to work with existing programs such as East Bay Community Choice Energy, BESO, and the Berkeley Bicycle Plan.

II. Opposing further transportation of oil, gas, and coal

Recommendations

1. In order to put the brakes on the transport of refinery feedstock and refined products traveling though Berkeley, call for a plan to a responsibly wind down all Bay Area refineries as California demand wanes.

2. Consider a ban on the storage and transport of coal within the City

Discussion

It should be noted that the City of Berkeley has already adopted a more specific position in opposition to transport of oil, gas and coal: joining neighboring communities in September in calling for a ban on coal shipments through East Bay Communities.

Unfortunately, the Federal Government has jurisdiction over rail transport limiting the City's options for preventing travel by rail through Berkeley.

Eliminating transport of fossil fuels would require the shutdown of all Bay Area oil refineries, because their products are trucked to and through Berkeley for cars, trucks, planes and trains operating in the Bay Area. It would also mean that all ground vehicles, including trains would have to be converted to run on 100% carbon-free electricity, and air transport be fueled by bio-fuel or by imported fossil fuels.

Regarding the shutdown of local refineries, Communities for a Better Environment has drafted a California Refinery Study and will soon launch a campaign to responsibly wind down all California refineries by 2035, by requiring annual emission reductions of 5% beginning in 2020. Mayors of Benicia and Richmond, home to the Valero and Chevron refineries, are already making public statements in support of winding down Bay Area refineries. As California electrifies it vehicles, we must ensure refineries are not permitted to maintain or increase refining activities such that fossil fuel exports increase and frontline communities remain subject to the health consequences of this dirty, outdated industrial sector.

III. Fully implementing Berkeley Deep Green Building plan, raising the citywide LEED certification requirement above the current LEED Silver,

and applying the same requirements to newly constructed city facilities, and major renovations

Municipal Buildings Recommendations

1. Immediately convene a citywide departmental summit including Public Works and Planning and Development to establish a timeline and budget for electrifying all city owned buildings and installing solar plus storage at City buildings wherever possible.

2. Review and re-prioritize all funds currently earmarked for capital improvements to facilitate rapid electrification of municipal buildings.

3. Work with East Bay Community Energy to secure grants for solar with storage.

4. Use the 2 x 2 process to coordinate with BUSD in establishing a fossil fuel free goal and providing BUSD with technical and policy assistance to achieve it.

5. Set higher goals for municipal buildings related to indoor air quality, lowered carbon footprint, and all electric as outlined in Berkeley Deep Green Building and Healthy Building Network's HomeFree Spec guidance.[2] In addition to developing expertise that can be shared with Berkeley residents and property owners, these changes would have health, environmental, and economic benefits. The City can decide the standards which municipal buildings must be built or remodeled to. It is our understanding that currently, there is no requirement beyond meeting minimum state building codes.

Residential and Commercial Buildings Recommendations

1. Develop options for expanding the coverage of the current LEED requirements to other areas of the City including mandatory points in certain sections.

2. Strategically relax the Planning Code, such as density and/or parking requirements or accelerated permit review in exchange for electrification and energy efficiency measures.

3. Place moratorium on natural gas cooktops and dryers in new residences or on new gas hook ups if possible.

4. Institute a transfer tax rebate for energy efficiency upgrades and electrification at time of sale.

5. Ensure every plan checker is trained in methods of electrification, and instructed to present that information to property owners at the beginning of the permit application process. In this way, every interaction with property owners becomes an opportunity to educate them on their options for home energy efficiency and

[2] https://homefree.healthybuilding.net/reports

electrification and their importance. Building owners need to understand the importance of reducing energy consumption and electrification and to switch out fossil fuel appliances for electric whenever possible.

6. Expand BESO and shift focus to include electrification along with energy efficiency. To be considered are: instituting more triggers that require an energy audit, more detailed energy audits, not allowing the seller to transfer the audit to the buyer, and required implementation of some of the measures recommended in energy audit.

7. Develop an effective communication and education strategy that reaches the Berkeley community at large. This strategy should include updating the City's website to reflect the City's prioritization of electrification, and low carbon footprint and low toxic construction. Updated green building information should be easily found on the Permit Service Center home page. Many architects, builders and homeowners begin the design process online, making key decisions based on information found online. It is critical the City's website offer clear guidance reflecting the urgency of the climate crisis.

8. Work with PG&E to develop a plan for eventually shutting down natural gas service in Berkeley. Priority should be given to areas most vulnerable to the effects of climate change and earthquakes and those where infrastructure has not yet been upgraded to plastic. Funds that would be spent on upgrading gas infrastructure can instead be used for electrifying buildings and under-grounding electrical lines.

9. Consider the development of a long term funding plan such as a very low interest revolving loan fund to assist property owners to decarbonize their buildings.

10. The City should work with the BAAQMD to adopt rules with future effective dates to prohibit sale of gas powered appliances.

11. Increase regional and support state efforts to expand availability of low global warming potential refrigerant heat pumps space and water heaters for retrofit markets.

Discussion

The Berkeley Deep Green Building (BDGB) initiative, adopted by the City Council in 2017, outlines best practices for green building including zero net energy and all electric construction, low carbon footprint and low toxicity building materials, and water conservation. City staff has provided a detailed analysis and review of progress in implementation. See the Energy Commission Agenda from 4-25-18 for copy of this review.

Energy efficiency measures including: low toxic, low carbon footprint insulation, air sealing, and replacing incandescent with LED lights, have long been recognized as important to greenhouse gas reduction. BDGB argues in addition that going all electric is foundational to achieving fossil fuel free goals. Historically energy efficiency standards and incentive programs have been based on the assumption that natural

gas appliances have lower environmental impacts than electric appliances. However, this is no longer the case. The dramatic increase of renewables in supplying electricity and the development of heat pump technologies for space and water heating, which are more than 3 times as efficient as their gas equivalents, have turned this balance around. If the significant fugitive emissions from gas infrastructure and their concomitant climate changing and indoor air quality impacts are added to the equation, the scale definitely tips in favor of all electric buildings.

Natural gas is also a safety issue in Berkeley. The recent gas line explosions around Lawrence Massachusetts are only the most recent in a long line of such incidents. Even though PG&E is working to upgrade existing infrastructure, rising sea levels in West Berkeley and the overdue earthquake on the Hayward fault threaten Berkeley. Electricity infrastructure has its safety issues as well. Money saved on gas infrastructure could be used on improving the safety and reliability of electric power.

One of the stumbling blocks to a fossil free California is energy storage. All electric, energy efficient buildings can be key in addressing this problem by reducing overall energy demand and drawing energy for space and water heating in the middle of the day when it is most abundant and storing it for use in the evening after the sun goes down. As a quarter of all energy used in the home is for water heating, state policymakers and manufacturers are already working on ways to incorporate tanked electric water heaters into energy management programs.

Heat pump space and water heaters are commercially available and can be economical. Recent studies of homes by Rocky Mountain Institute and NRDC[3] have found that all electric construction can be cost effective, especially in new construction where there are significant savings from not installing natural gas plumbing and infrastructure. All electric construction can also be economical in remodels in cases were natural gas equipment is older and needs replacing and where electrification is coupled with solar PV installation.

As the city is largely built out, construction tends to focus on remodels and new construction of high rise apartment buildings. Every effort needs to be made to guide these projects to be all electric. Currently it appears the economics for high rise residential buildings in Berkeley favor electric heating and air conditioning paired with central gas heat for water. Though adding significant cost to construction, some developers will run natural gas to individual units for the perceived increased value of a gas cooktop. It should be noted that building owners who install natural gas heating and appliances now will be left with stranded assets as society is quickly shifting to all electric operation.

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[3] https://rmi.org/insight/the-economics-of-electrifying-buildings/
https://www.nrdc.org/experts/pierre-delforge/new-report-heating-next-clean-energy-frontier-ca

The biggest challenge in Berkeley is electrifying existing buildings -- particularly where no work is anticipated or no permit is obtained for the work. This is a major source of greenhouse gases in our city and across the state. Several state level assistance programs can help property owners with improvements. However they generally fall short of amounts needed and currently rebates are not available for switching gas appliances to electric.

California has been a leader in improving energy efficiency and expanding renewable electricity generation. Several state laws from 2018 will continue that effort:

- SB 100 commits state utilities to provide 60% renewable electricity by 2030, and zero carbon electricity by 2045.
- AB 3232 charges the California Energy Commission with assessing how to reduce emissions from the state's building stock by 40 percent below 1990 levels by 2030.
- SB 1477 will expand the accessibility of clean heating technologies by promoting them in the market with incentives and training.
- Executive Order B-55-18 commits California to economy-wide carbon neutrality by 2045.

While California has been a leader in improving energy efficiency, state laws and regulations have been slow to guide and in some cases act as barriers to the transition to all-electric construction. Many of these barriers are obscure and buried deep in regulatory policy:

- 3 prong test. The 3 prong test is policy established in the early 1990s originally intended to ensure fuel switching did not occur that caused adverse effects on the environment. At the time it generally meant discouraging shifts from natural gas to electric. However the policy assumptions continue to serve the same purpose even as the climate impacts of the two fuels have completely changed places. This policy is the core of why PG&E will not provide energy upgrade rebates when changing gas to electric heat.
- Title 24 assumptions. Title 24 is the shorthand name for the energy efficiency standards of the California Building Code. These are updated every 3 years and currently include several assumptions that favor gas heating and air conditioning over electric.
- Energy rate structure. Retail prices for natural gas do not reflect the GHG emissions of gas compared to electricity, or the grid benefits of flexible electric loads like tanked electric water heaters.

Of these barriers, only the assumptions in title 24 have begun to shift in PG&E territory. The standards that will go into effect in 2020 will no longer penalize use of

heat pump water heaters in low rise residential construction. However many other assumptions within the new standards will continue to support use of natural gas such as the climate benefits of electricity in the TDV and the lack of credit given to tanked electric water heaters for energy storage.

At the regional level, BAAQMD has the authority to regulate air pollution including GHGs. It has used the authority in the past to prohibit the sale of polluting products like high VOC paints. It could prohibit sale of gas powered appliances to support electrification and elimination of GHG emissions.

Working within state level constraints, planning staff have developed and pushed policies that improve the energy efficiency of buildings in Berkeley and encourage a shift to all electric, carbon free operation. Policies they have developed unique to Berkeley include:

- New non-residential construction and additions in the downtown area need to be LEED Gold or equivalent.
- Free advice and consultation on green building design and strategies.
- Building renovation and new construction over 10,000 square feet needs to have an energy analysis and a completed green building checklist.
- Under the BESO program, at time of sale for residences and more frequently for commercial properties, owners must complete an energy audit of the building.

City staff are pursuing many additional efforts:

- Reviewing the BESO program to improve effectiveness. Scope of review to include requiring energy audits sooner for more properties, expanding the triggers that require an audit to include remodeling, more detailed energy audits including electrification, elimination of the option of allowing the buyer to perform the audit, and implementation of some of the upgrades recommended by the energy audits.
- Expanding heat pump water heater availability through collaboration on BayRen's mid-market expansion grant program.
- Pursuing "reach" building codes for the 2020 building codes that give regulatory advantage to all electric construction. The most important priority for this effort is new multi-unit high rise apartment buildings and major remodels.
- Advocating for state level policies that allow building owners to receive energy efficiency rebates when switching fuels.

- Advocating for removal of all biases against electrification within the state building energy codes including Total Daily Value (TDV) and computer modeling assumptions.

Care should be taken that solutions do not create additional problems. Many building materials are coming under increasing scrutiny for their long trail of environmental and health impacts, such as polystyrene and PVC plastics and organo-halogenated materials. Others have such a high global warming footprint, such as certain foam plastic insulations that their use minimizes the GHG reduction benefits of the projects. The refrigerants commonly used in most heat pumps in the U.S.A. also have very high global warm potential. While heat pumps still have dramatic energy saving benefits over other options, phase out of these chemicals under state Air Resources Board programs will improve their GHG benefits.

IV. Requiring all future City government procurements of vehicles to minimize emissions, and establishing a goal and plan for transitioning the city's vehicle fleet to all electric vehicles

See V. for discussion and recommendation concerning 100% renewable energy for municipal vehicles.

V. Establishing a goal and plan for transitioning to 100% renewable energy for municipal operations and a community wide goal of 100% reductions by 2030.

See III. for discussion and recommendation concerning 100% renewable energy for buildings.

Municipal Transportation Recommendations

1. Assess the city's transportation vehicle needs and develop an aggressive timeline for transitioning to all electric.[4] This assessment would include consideration of: 1) Switching to lower carbon transport options such as electric carts or bicycles where possible and 2) the timing of technology development and commercialization for car batteries.

2. Immediately switch diesel vehicles to run on renewable diesel in the interim until fossil fuel free options are available for the tasks they perform.

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[4] Ref: San Francisco Ordinance 115-17 Administrative Code Section 4.10-1:

> c) By December 31, 2022, all light duty vehicles in the City fleet must be Zero Emission Vehicles in compliance with Environment Code Section 404, unless there is a waiver. exemption, or applicable exception. detailed in Environment Code Chapter 4.

Citywide Transportation Recommendations

The Energy Commission would like to coordinate recommendations with the Transportation and Public Works Commissions to accelerate a reduction in fossil fuel vehicles in Berkeley. To begin the process, the Energy Commission makes the following recommendations:

1. Re-prioritize road and sidewalk capital expenditures to accelerate changes in favor of walking, human powered vehicles, and other low carbon footprint mobility alternatives. The Council should amend funding priorities to reflect the climate emergency.

2. Adopt financial incentives and disincentives to reduce transportation carbon emissions such as: free transit passes for youth, restricted vehicle access to certain streets, and additional parking fees. Funds raised would be used to support fossil fuel free transportation programs.

3. Develop and implement a transit plan in support of the Climate Action Plan. The transit plan could include detailed accountability metrics such as required dates for identified new routes, dates for replacement of fossil fueled busses and shuttles with electric busses and shuttles, and smaller intra-neighborhood subsidiary transit (shuttles). The city should explore developing its own shuttle services similar to the Emery Go-Round using EVs as part of the transit plan.

4. Add 3 FTE to the Transportation Division to expedite implementation of the city's bicycle, pedestrian, and BeST plans.

5. Build all high priority projects in the city's bicycle, pedestrian, and BeST plans including tier 1 projects in the bike plan by 2025.

6. Develop a communication strategy to inform residents of fossil free and lower carbon footprint personal mobility options and the desirability of prioritizing these options.

7. Continue to develop and expand programs that encourage residents to shift to fossil fuel free modes of transport, such as electric bike and scooter sharing, Waterside Workshop, and Safe Routes to School.

8. Work with State authorities to prohibit operation of autonomous vehicles within city limits unless they are electric vehicles.

9. Use the 2x2 process to encourage the BUSD to develop a plan for phasing out fossil fuel vehicles and supporting families to safely get to and from school without cars.

10. Lobby and work collaboratively with public and private transportation providers and the commercial sector to convert all vehicle fleets to electric power.

11. Support state programs that restrict the use of fossil fuel vehicles by ride hailing services such as Uber and Lyft.

Discussion

One of the greatest challenges we face is how to eliminate emissions from transportation. By far the most promising way to make transportation renewable is with electric vehicles.

The vast majority of fossil fuel powered vehicles operated in the city are owned by individuals and companies and government entities outside of the city simply driving through the city or entering the city for business or pleasure. For the purposes on this report, the fossil fuel free goal will be focused on reducing fossil fueled vehicular traffic on city streets. It should be noted that for Berkeley to be truly fossil free, all ground vehicles, including trains, must be converted to electric power. We recognize the City has no independent way to get Amtrak and freight trains off fossil fuels.

The Commission believes that the goal of 100% emission reduction from vehicles is most likely to happen using batteries. Fuels other than electricity are possible but less likely to be adopted. Biofuels have a limited role because of lack of feedstock availability without associated environmental damage (the food vs. fuel problem).

Electric automobiles are quieter and more economical to operate than gas cars. Although only 2% of new car sales in the United States in 2018 were electric, that represented an 81% increase in sales over 2017. Electric auto sales were about 6% of new cars in California in 2018, and reached 10% in December. Because of their lower operating and maintenance costs, electric cars are competitive in lifetime costs of ownership. Residents of homes without garages (of which there are many in Berkeley), and apartments without charging stations, face a serious challenge to find a place to plug in. We encourage further city action on this.

Another option is hydrogen. To be emission-free the hydrogen has to be produced from renewable electricity or directly from sunlight with a catalyst. The problem is that hydrogen storage is very expensive either as a liquid or as a high pressure gas, both because it is energy intensive and because the container is expensive. Furthermore, the likelihood of leakage is much higher than, say, natural gas and the likelihood of explosive ignition in the presence of oxygen is also much higher than natural gas.

One biofuel that can play a useful role in Berkeley as bridge to electrification is renewable diesel. Renewable diesel though made entirely from vegetable oils is not biodiesel. It is processed to meet the exact performance specifications required for diesel motors. It does not void manufacturer warranties and can be used in any diesel vehicle. The emissions are much cleaner, the carbon footprint is lower and it is cheaper than diesel. While its use should be minimized because of the potential food vs fuel concerns, it can be used immediately in all city diesel vehicles until they can be replaced with fossil fuel free alternatives.

The city already has advocated walking, human powered vehicles, electric vehicles and mass transportation accessibility to all in its 2009 Climate Action Plan. In achieving a fossil fuel free goal, there are important timing issues. Several significant transportation changes are just over the horizon that will dramatically reshape our city street experience including:

- Expanded ride hailing operations such as Uber and Lyft, especially as autonomous vehicle operation is perfected;
- Docked and undocked ride sharing vehicles; and
- Proliferation of varied electric vehicles including electric golf carts, bicycles, tricycles, stand-up scooters, hoverboards, Segways, and wheelchairs.
- Breakthroughs in battery technologies that will dramatically lower the cost and improve performance of electric vehicles.

The city should be careful about engaging in longer term contracts and that decisions be revisited regularly as new technologies mature and the economics change for different transportation modes.

VI. Formally opposing the recent expansion of offshore drilling by the Trump Administration

Offshore Drilling Recommendation

Formally endorse California laws intended to block offshore drilling if it has not done so already.

Discussion

The State legislature has passed and the Governor has signed SB 834 (an act to add Section 6245 to the Public Resources Code, relating to state lands) and SB 1775 (an act to add Section 6245 to the Public Resources Code, relating to state lands). Both Sections are entitled State lands: leasing: oil and gas. These new laws are intended to block the Trump administration's plan to expand offshore oil drilling by prohibiting new leases for new construction of oil and gas-related infrastructure, such as pipelines, within state waters if the federal government authorizes any new offshore oil leases.

VII. Calling for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure

The Council has rightly included the need for regional coordination to address energy supply, housing and transportation. It's safe to say all Bay Area cities are grappling with these issues in one way or another, with significant disparities among them in both priorities and resources. It will take trust, willingness to move away from a

provincial mentality, leadership from MTC/ABAG and BAAQMD and probably some State action to facilitate deep progress in these areas.

VII.1. Renewable Energy Sources

Renewable Energy Sources Recommendations

1. Opt up all Berkeley's municipal, commercial and residential accounts to EBCE's[5] 100% Renewable electricity with a policy of no added cost for CARE customers and an outreach campaign to enroll all eligible customers in the CARE program in 2019.

2. Partner with all cities in CCAs to influence state legislators, the Governor, and CPUC Commissioners to develop guiding legislation, policies, and rules that support the continued existence of CCAs.

Discussion

It is critical to move toward 100% clean energy generation sources as soon as possible in order to fully realize GHG emission reductions through "fuel switching" from combustion to electricity in all spheres. There is long established worldwide consensus that the path to climate stabilization requires, in this order:

1. Deep reductions in energy demand through conservation and efficiency,
2. Conversion to clean electricity generation, and
3. Massive electrification.

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[5] A regional approach to increase reliance on renewable energy sources is possible through our new energy provider: East Bay Community Energy (EBCE). EBCE was initiated under a state law passed in 2002 that allowed government jurisdictions to create agencies (called Community Choice Aggregators or CCAs) to purchase power on their residents' behalf as a way to provide energy options to Californians. As a local government agency, EBCE is not for profit and is entirely devoted to the community. Even before EBCE was providing electricity, it was developing a plan to invest locally in energy development. In July 2018, the Board of EBCE adopted a groundbreaking Local Development Business Plan which spells out strategies for local clean energy, energy efficiency, and energy storage projects specifically to help address the environmental, economic, and social justice needs of the East Bay community.

Once established, a CCA is authorized to automatically enroll all accounts in its jurisdiction in the new energy program. Customers have the option of changing the product they are enrolled in or switching back to PG&E. EBCE currently offers three electricity supply products to its residential, commercial and municipal customers:

- Bright Choice - a mix of electricity generated by fossil fuels, renewable sources and large scale hydro, which the State of California does not classify as renewable. It is offered at a slightly lower in price than electricity from PG&E;
- Brilliant 100 - a mix of renewable energy and large hydropower at the same price as PG&E power; and
- Renewable 100 - 100% renewable energy at a slightly higher price.

Both Berkeley (through BESO and other programs) and California (largely through frequent Energy Code updates) have long standing, successful conservation and efficiency requirements. We are national leaders in this and continue to press forward with program improvements and new initiatives. Now that a 100% renewable option is available from EBCE, Berkeley can immediately convert the entire city to clean electricity generation, and turn its focus to the challenge to 'electrifying everything.' Shifting accounts to 100% renewable will reduce community-wide GHG emissions by a whopping 10%.[6]

Under the Climate Emergency Resolution, Council has signaled the intention to act boldly. Berkeley has already fallen significantly behind in achieving it's 2050 GHG emission reduction goal as set forth in the 2009 Climate Action Plan.[7] Opting all its EBCE customers to the Renewable 100 plan is the single most impactful and timely action the City can take in 2019, both because of immediate emission reductions, and to avoid GHG emissions from future increases in demand due to electrification. It is critical to do this now because by the end of 2020, EBCE will be required to sign long term contracts for 65% of its supply portfolio. Once these long term contracts are signed, it will be more difficult for EBCE to shift the sources of its power mix. For these reasons, the Energy Commission recommends that Berkeley move to 100% renewable electricity in 2019.

While EBCE energy mix options were being established last spring, the Berkeley City Council, as did most EBCE cities, chose to enroll all residential and commercial accounts in Bright Choice. Berkeley enrolled its municipal accounts in Brilliant 100. The City of Albany enrolled all accounts in Brilliant 100, Hayward enrolled its residential accounts in Brilliant 100, and the City of Piedmont enrolled all accounts in Renewable 100. We note that ten jurisdictions in Los Angeles and Ventura counties served by Clean Power Alliance (CPA, a CCA) were enrolled in Green Power, its 100% renewable product, as the default. These ten jurisdictions cover a third of CPA's one million customers.[8]

CPA, like EBCE, also has a Community Advisory Committee to help prioritize local renewable energy development and job creation, rebates and incentives. For California's progressive cities and counties, enrollment in 100% renewable energy is a climate action whose time has clearly come. Because 35% of EBCE's power purchase agreements are not required to be long term and electrification will increase demand, we anticipate ample opportunities for EBCE to make significant investments in local

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[6] Berkeley Climate Action Plan Annual Progress Update, Office of Energy and Sustainable Development, Planning Department, Slide 5, December 6, 2018

[7] Berkeley Climate Action Plan Annual Progress Update, Office of Energy and Sustainable Development, Planning Department, Slide 14, December 7, 2017

[8] Clean Power Exchange, Alliance will provide clean, competitive energy, January 12, 2019 https://cleanpowerexchange.org/alliance-will-provide-clean-competitive-energy/

energy development. As the local development market matures, there will be rolling opportunities to incorporate locally generated power into long term contracts.

There were initial concerns that new EBCE customers would opt out and go back to PG&E. There were also worries that customers would opt out if enrolled in a cleaner mix of energy generation priced at the same or slightly higher cost than PG&E rates. Both of these fears have been shown to be unfounded for the inner East Bay cities of Alameda County. In fact, among all Alameda County cities in EBCE, only the City of Livermore, at 5.56%, has had an opt out rate greater than 2.07%.[9] Piedmont's experience in making Renewable 100 the default level is instructive. As of December 2018, 6.8% of customers opted down to Brilliant 100 or Bright Choice, and only 2.07% opted out and went back to PG&E. The takeaway is that few customers took any action, and of those who did, the overwhelming majority (77.7%) chose to stay in EBCE.

Concerns have also been raised that opting all customers to the 100% Renewable product would harm low-income customers. The Energy Commission recommends that EBCE follow CPA's lead in which "customers in 100 percent renewable energy communities who are enrolled in CARE, FERA or Medical Baseline will get Green Power at no extra charge."[10] We understand that EBCE is reporting strong net revenues which could be allocated to subsidize CARE customers. Alternatively, non-CARE customers could absorb the additional cost. Furthermore, the value of the non-binding nature of the enrollments is that price sensitive customers can opt down. Unlike an increase in property taxes, nonCARE customers who cannot afford to pay any more for power can simply opt down to the lower priced option.

It has recently come to light that Bright Choice power may in fact have a higher carbon content that electricity provided by PG&E.[11] The City Council has the opportunity right now, while the nascent EBCE is locking in long term contracts for power, to opt all accounts to fossil fuel free power to ensure that joining the CCA does in fact reduce citywide GHGs.

The political landscape for CCAs is fraught with heavy opposition from PG&E and its entrenched allies in State government even as they supply electricity that is cleaner and cheaper than their for-profit counterparts.[12] Berkeley needs to partner with all Bay

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[9] EBCE Enrollment Update, December 5, 2018

[10] Clean Power Exchange, Alliance will provide clean, competitive energy, January 12, 2019 https://cleanpowerexchange.org/alliance-will-provide-clean-competitive-energy/

[11] See comments in: https://www.berkeleyside.com/2018/12/11/why-does-your-december-electricity-bill-look-different

[12] A 2016 UCLA study found that CCAs in California offered 25% more renewable energy compared to the investor-owned utility (IOU) in the same area resulting in an estimated reduction of 600,000 metric tons of CO2 in 2016.

Area cities in CCAs to work with our elected representatives to defeat legislative threats and overcome obstacles at the California Public Utilities Commission. Also, the CCA's themselves need to ensure unity and coordinated responses to initiatives aimed at undermining success.

VII.2. Affordable Densification of Cities

Affordable Densification Recommendations

1. Work with MTC/ABAG, BART cities and counties to reframe and expand Transit Oriented Development concepts to conform with internationally used approaches that look beyond infill at already heavily used transit hubs, and prioritize infill housing everywhere developed in concert with expanded transportation strategies and expanded services (educational, recreational, commercial and environmental enhancement).

2. Work with Bay Area cities and counties to develop a regional funding mechanism to subsidize low income and affordable housing in all jurisdictions.

2. Explore viability of reducing R-1 zoning to increase housing availability, opportunities for home ownership and improve transit access through increasing densification. In addition, support adoption of such transit oriented development throughout the region to reduce development pressure on open spaces, provide more housing near jobs, and provide the density to support expansion of regional.

Discussion

In order to provide affordable densification we need massive housing construction, housing subsidies and expanded transit opportunities. The high cost of living in the Bay Area includes the high cost of construction. If we want to reduce vehicle miles traveled (VMT) and the unhealthy stress of long commutes we must find ways to subsidize housing for average people, because at the present time people living on average incomes who do not already own homes cannot afford to live in the Bay Area either as renters or homeowners, forcing many into ever longer vehicular commutes. This is something that needs to be addressed by both the region and the state. There is too much disparity in wealth across the region for the problem to be completely solved by individual cities.

A desire for walkable neighborhoods and transit access has contributed to gentrification in Berkeley and San Francisco. This new gentrification is fueled by the migration of young professionals from the suburbs to these two cities in particular because they both have ample neighborhood scale services. Remarkably, the median price paid per square foot of living space is no longer significantly higher in most R-1 zones where access to transit is often limited.[13] This indicates that the hunger for the amenities of a more urban lifestyle is widespread. It's quite possible that there is an

[13] (https://www.trulia.com/real_estate/Berkeley-California/market-trends/)

untapped openness to neighborhood-scale services and transit development in existing suburbs too. This possibility needs to be explored. Any such nascent cultural shifts should be identified and reinforced. The suburbs have already absorbed job growth in the form of large business parks. Likewise, rails to trails conversions have acculturated suburban residents to walking and biking where convenient. Managed thoughtfully, initiatives to increase suburban infill housing coupled with increased transit, active transportation options and some small scale services could be welcome developments.

The push for housing densification in the Bay Area has relied on a concept of transit-oriented development (TOD) defined by MTC as [emphases added]:

> "the clustering of homes, jobs, shops and services near *rail stations, ferry terminals or bus stops with high-frequency service*"

defined by BART as:

> "mixed-use, higher density development *adjacent to frequent transit*."

and directed by Berkeley's General Plan to:

> "[e]ncourage and maintain zoning that allows greater commercial and residential density and reduced residential parking requirements in *areas with above-average transit service* such as Downtown Berkeley."

This perspective pre-supposes that densification is not a serious goal beyond existing heavily used transit corridors, or beyond cities that are already dense. Plan Bay Area forecasts the need for 800,000 new housing units by 2040. It seems doubtful that so much new housing can be built only around existing transit lines. Recent state legislation for infill housing fell victim to this kind of limited thinking.

In other parts of the world, TOD includes community scale planning with new transit service in mind, not just placing new homes near existing heavily used transit. We need to expand the mindset of housing development in the Bay Area to one of transit *coordinated* development (TCD). We need suburban infill housing developed in concert with public transit strategies, and educational, recreational and commercial services. Infill housing and transit alone do not address human needs for social, commercial and fitness activities. Enhancement of ecological surroundings is also important. A comprehensive TCD approach would improve the quality of life in many ways, serve as an attractor to development and significantly reduce GHG emissions.

Note that a substantial amount of new housing units in the suburbs will need to be subsidized for the reasons described above. Affordable and workforce housing is critical for every Bay Area city and county. Plan Bay Area has set forth affordable housing goals for the whole region, but so far every city is failing. Taking a comprehensive TCD approach would make such infill projects more relevant and attractive to existing residents.

One action cities such as Berkeley can take is to change zoning restrictions to eliminate R-1 zoning. Berkeley's General Plan institutionalizes R-1 low density housing:

"These areas are generally characterized by single-family homes. Appropriate uses for these areas include: residential, community services, schools, home occupations, recreational uses, and open space and institutional facilities. Building intensity will range from one to 10 dwelling units per net acre, not including secondary units, and the *population density will generally not exceed 22 persons per acre.*"[Emphasis added.]

The recent move to allow Accessory Dwelling Units is too restrictive to increase density to the extent needed on the land that is most available. It also preserves privilege, in failing to foster home ownership for additional residents.

Berkeley's R-1 zoning is visually correlated with the legacy of red-lining. Its perpetuation restricts growth in areas with the most open land that could support densification. There is quite a lot of aging housing stock in the Berkeley that needs significant renovation, including in R-1 zones. Under current policies, large houses in R-1 cannot be subdivided to allow for more occupants. As a result when modernized they grow larger and more luxurious, a sort of "deep gentrification." It's well documented, but rarely acknowledged, that such consumption drives GHG emission increases.

If the zoning was changed and subsidies provided, we could see small scale condo development like is happening in areas with higher density zoning, and much lower average household CO2e emissions because all the infill would be natural gas free as well as house more people. We could also reverse gentrification and truly become a city that prioritizes diversity. Increased density in R-1 areas would facilitate increased transit service and car sharing, and reduce congestion in shopping corridors. The fact is, many people actually spend little free time in their homes and gardens, preferring to recreate elsewhere, and even when self or contractually employed, preferring to go to work spaces and coffee shops with other people. Children in R-1 zones don't generally play in their neighborhoods, but are shuttled daily to many activities, increasing VMT. Densifying housing in R-1 areas could eventually prompt further zoning changes along the more major roads already served by public transit leading to infill services and commercial development there as well such as the two small and well used commercial districts in Kensington. The result could very well be both environmentally preferable and lead to an increase in our city-wide happiness quotient. Human happiness is correlated with low economic disparity. Our zoning ordinances should be reviewed to see how they amplify disparity and/or inhibit community happiness and act as a bias toward creating GHGs.

VII.3. Low Emissions Public Transportation Infrastructure

Public Transportation Recommendations

The Energy Commission would like to coordinate recommendations with the Transportation and Public Works Commissions for accelerating a reduction in fossil fuel vehicles in Berkeley. To begin the process, the Energy Commission makes the following recommendations.

1. Work with AC Transit to convert all public transit to EVs.
2. Work with AC Transit and major employers to expand existing bus service and add all manner of appropriately sized bus and shuttle services, including into the suburbs.
3. Work to create dedicated bus/shuttle-only lanes on all bridges, freeways and major streets.
4. Work to normalize ride sharing.
5. Work with MTC, regional transit providers and the state to augment subsidies such that public transit is affordable for all.
6. Lobby the state to regulate ride hailing services to reduce overall per capita VMT.

Discussion

MTC distributes enormous sums of money and wields huge power over regional transportation decisions but has not seriously addressed how the region can mitigate climate pollutants from transportation. As a start we need to press MTC to set clean transportation goals commensurate with the damage to our climate that dirty transportation has wrought and the urgency to make drastic emission cuts by 2030. The goal setting process must include a planning document showing the path to take, and policy commitment to achieve the goals.

The Bay Area's freeways are already some of the most crowded in the nation. As housing affordability has worsened, more people are commuting farther distances to their Bay Area jobs. According to MTC, time spent in weekly traffic in the Bay Area shot up 80% between 2010 and 2016. All this traffic is increasing transportation emissions, with no end in sight. Clearly there is a need for increased transportation options, and they need to be carbon free. To expand clean public transits as quickly as possible, light rail is not likely to play a large role. EV buses and shuttles can be built and routed in the time frame we need.

Given the number of tech workers (living all over the region, including the suburbs) who now take buses to their jobs, it is clear that old ideas about who will use bus transit is completely obsolete.

Like housing, transportation is an equity issue. All driving services, public or private, should be required to provide a living wage to drivers. Likewise, we cannot expand public transportation services without massive investment to assure affordability for all. This is a wealthy region that can afford such investments. Significant wealth generated

in this region is also sent to Sacramento. We need the state to assist in subsidizing the transition to clean, affordable public transit available to all.

On June 12, the Berkeley City Council also passed item 49 "Declaration of a Climate Emergency" which refers "to the Energy Commission to study and report back to Council on a path for Berkeley to become a "Carbon Sink" as quickly as possible, and to propose a deadline for Berkeley to achieve this goal."

Carbon Sink Recommendations

1. Plant more trees.
2. Apply compost (and biochar where possible) to city parks, median strips and generally all planted areas.
3. Support use of low carbon construction materials both in municipal buildings and commercial and residential projects.
4. Support urban farming: for example through recently adopted urban farming policies and also planting suitable edible perennials in public spaces.
5. Support citywide programs, such as the Ecology Center's farmers market program, that give all residents access to fresh, organic, regionally grown foods.

Discussion

Carbon sequestration is an essential component of comprehensive state, national and global efforts to meet climate change reduction goals. The October 9, 2018 UN IPCC report recommends that at least 1000 gigatons of CO2 be removed from the atmosphere and sequestered by the end of the century. A wide range of strategies are being looked at to remove and sequester atmospheric carbon. The most promising strategies, biological sequestration, rely on natural processes, including afforestation and carbon farming. The California Air Resources Board is already providing Cap and Trade funds to support and expand these promising approaches to carbon sequestration.

Because of the density of habitation, Berkeley is unlikely to be able to be a carbon sink until annual emissions have been reduced by about 99%. Citywide CO2 emissions totaled 640,000 metric tons in 2015. With roughly 6 square miles of space not covered with buildings and roads, only a very small fraction of these annual emissions could be offset with biological sequestration.[14]

[14] Background for Carbon Sink section:
Carbon sequestering buildings: While using rapidly renewable materials such as wood, straw and bamboo can sequester carbon in buildings, the amount is quickly offset by the vastly greater energy intensity of metals, plastics and concrete required in taller buildings and

While not having significant climate benefits, carbon sequestering strategies such as afforestation and application of biochar to the soil can have health and resilience benefits for the city residents improving air quality and local sources of food.

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seismically active zones. In Berkeley, the effects of low carbon footprint construction can at best lower the carbon footprint of an individual building, which is important. However, it cannot provide a means to offset carbon emissions in the city generally.
Biological sequestration in soil: It is practical to sequester carbon from the atmosphere in two ways, changing farming practices to capture more carbon in soils, and reversing deforestation. (It is also possible to capture CO2 from the air but because of the low concentration of CO2 in the air, the cost is prohibitive. Sequestering the captured CO2 is also expensive, , requiring either mineralization or pressurization in a natural cavern (think Aliso Canyon) which is not present in Berkeley.)
Berkeley is 10.5 square miles. If 40% is impervious surfaces, then approximately 6.3 square miles would be available for carbon sequestration.
(https://en.wikipedia.org/wiki/Impervious_surface#Total_impervious_area) If the City and its residents were to implement ambitious carbon building land management practices, the land could optimistically sequester 2 metric tons of CO2 per acre annually or about 8000 metric tons of CO2.(Soil Carbon Restoration: Can Biology do the Job? by Jack Kittredge, policy director, NOFA/Mass www.nofamass.org August 14, 2015) This compares to annual emissions of approximately 640,000 metric tons.
Purchasing carbon offsets: Carbon offsets cost between $5.50 and $29 per ton of CO2. Taking the average, it would cost $1.1 mill to offset 640,000 metric tons or about $90 per resident. (https://www.whatitcosts.com/carbon-offsets-cost-prices/) However, purchasing carbon offsets should be discouraged since it transfers money away from Berkeley without addressing our local objective of becoming fossil free.

Office of the City Manager

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October 3, 2019

To: Facilities, Infrastructure, Transportation, Environment & Sustainability (FITES) City Council Policy Committee

From: Timothy Burroughs, Director, Planning and Development Department

Subject: Recommendations for a Fossil Fuel Free Berkeley

INTRODUCTION

At its meetings in June and July 2019, the FITES Committee considered the recommendations of the Energy Commission and the Planning Department's Office of Energy and Sustainable Development (OESD), in response to an earlier City Council referral establishing the goal of becoming a Fossil Fuel Free Berkeley. The FITES Committee requested that staff "prepare an itemized list with prioritization, based off of the recommendations made by the Energy Commission, and to identify projects already taking place." This staff report responds to that request.

BACKGROUND

On June 12, 2018 Berkeley City Council passed the Fossil Free Berkeley and Climate Emergency referrals to the Energy Commission and Transportation Commission. The Fossil Fuel Free Berkeley Report refers "to the Energy Commission and Transportation Commission consideration of the proposed resolution or similar action to further implement the Climate Action Plan and establish the goal of becoming a Fossil Fuel Free Berkeley, and further consider:

- Establishing a date by which we are committed to being a Fossil Fuel Free City;
- Opposing further transportation of oil, gas, and coal;
- Fully implementing Berkeley Deep Green Building, raising the citywide LEED certification requirement above the current LEED Silver, and applying the same requirements to newly constructed city facilities, and major renovations;
- Requiring all future City government procurements of vehicles to minimize emissions, and establishing a goal and plan for transitioning the city's vehicle fleet to all electric vehicles;
- Establishing a goal and plan for transitioning to 100% renewable energy for municipal operations and a community wide goal of 100% reductions by 2030;
- Formally opposing the recent expansion of offshore drilling by the Trump Administration; and

- Calling for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure."

The Energy Commission prepared a Fossil Fuel Free Berkeley Report[1] including recommendations outlined below to achieve the goals outlined by Council to address the climate emergency and transition Berkeley away from fossil fuels. In response to the Energy Commission's report, staff provided a Staff Companion Report[2] which recommended referring to the City Manager to continue to implement existing policies and programs that are consistent with the recommendations in the Berkeley Energy Commission's Fossil Fuel Free Berkeley Report, such as the Building Energy Saving Ordinance and development of new building codes that promote building electrification, and also to complete new evaluations and analyses of current and potential future greenhouse gas reduction programs and policies in order to inform next steps for accelerating progress to a Fossil Fuel Free Berkeley. Additional work beyond current activities would require additional staff capacity and resources.

The Energy Commission's report included four fast track proposals, fourteen summary recommendations, and fifty-one total recommendations. This document provides responses to each of the Energy Commission's recommendations along with a description of the additional resources that would be required to achieve each recommendation, and the status of the recommendation. Input is being provided from staff in the Office of Energy & Sustainable Development Division of Planning, the Transportation Division of Public Works, and the Parks, Recreation & Waterfront Department.

The "Status" column has one of the following statuses:

- *Complete*: This work has already been completed.
- *In progress*: This work is currently being done or is on the work plan to be completed.
- *Alternative work in progress*: Staff is working on tasks that achieve similar goals.
- *Not in Fiscal Year 2020 – 2021 Strategic Plan*: This recommendation is not in the Fiscal Year 2020 – 2021 Strategic Plan.

CONTACT PERSON

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[1] See https://www.cityofberkeley.info/uploadedFiles/Clerk/2019-6-17%20Agenda%20Packet%20-%20Facilities.pdf, Item 3A.
[2] See same link as above, Item 3B.

Recommendations	Staff Response	Additional Resources Required	Status
Fast Track			
1. Opt all East Bay Community Energy (EBCE) accounts to 100% renewable electricity in 2019. This would result in an immediate 10% reduction in GHGs. *[Note also #35 under All Recommendations]*	Opting up all accounts would require significant additional analysis and research by City and EBCE staff. Issues to consider would include: • Potential impact on opt-out rates • Impact on utility rates for low and moderate income households • Availability of renewable energy resources • Staff capacity required at EBCE and City of Berkeley • GHG reduction impact	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
2. Integrate greenhouse gas (GHG) reduction goals into the objectives and responsibilities of every city department. Amend funding priorities to support this initiative.	Significant progress has been made to integrate sustainability objectives into infrastructure and facility upgrade projects, among other examples. Additional work and analysis would be required to develop a formal and sustained program to further integrate sustainability throughout City operations.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
3. Develop an updated Climate referendum to put before the voters that includes challenging proposals and why they are necessary. A successful referendum campaign would provide the platform for massive public education and support Council decision making.	Staff defers to Council regarding this recommendation. Note that staff is currently developing a “Pathway to Clean Energy Buildings Report” that will identify the most effective options for helping Berkeley buildings become fossil fuel free and an “Electric Mobility Roadmap” to identify the most effective fossil free mobility measures. This project is scheduled to kick off in July and be completed in 2020.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.

Recommendations	Staff Response	Additional Resources Required	Status
4. Lead a regional effort to change the Utility Users Tax (UUT) structure in order to assess taxes on natural gas usage separately from electricity usage, followed by a referendum asking voters to approve raising the natural gas usage tax. Funds raised would be dedicated to de-carbonization efforts.	The Pathway to Clean Energy Buildings Report (starting in July) will consider the UUT as a potential funding option, as well as other options.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
ALL PROPOSED RECOMMENDATIONS			
I. Establishing a date by which we are committed to being a Fossil Fuel Free City			
1. Consider a new ballot initiative for updating the Climate Action Plan in order to engage Berkeley residents in the comprehensive and ambitious efforts that will be needed.	Significant work is underway to implement the current CAP, as well as to update its implementation measures through efforts such as the Pathway to Clean Energy report, BESO evaluation, Electric Mobility Roadmap, Deep Green Building Initiative, and more.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
2. The City should take aggressive, immediate, and sustained action to achieve the goal of a fossil free Berkeley to the fullest extent possible while simultaneously calling for necessary and immediate complementary emergency actions by other local, regional (e.g. MTC/ABAG, BAAQMD, RayREN) state and federal governmental bodies.	Several efforts are underway that are consistent with this recommendation, including natural gas prohibition ordinance, development of new local amendments to the energy code, updates to the Building Energy Savings Ordinance (BESO), as well as two strategic planning efforts, the Pathway to Clean Energy Buildings Report and the Electric Mobility Roadmap.		In progress.
II. Opposing further transportation of oil, gas, and coal			
3. In order to put the brakes on the transport of refinery feedstock and refined products traveling	Staff defers to Council regarding this recommendation.		Not in Fiscal Year 2020 – 2021 Strategic Plan.

Recommendations	Staff Response	Additional Resources Required	Status
though Berkeley, call for a plan to a responsibly wind down all Bay Area refineries as California demand wanes.			
4. Consider a ban on the storage and transport of coal within the City	Staff defers to Council regarding this recommendation.		Not in Fiscal Year 2020 – 2021 Strategic Plan.
Fully implementing Berkeley Deep Green Building plan, raising the citywide LEED certification requirement above the current LEED Silver, and applying the same requirements to newly constructed city facilities, and major renovations			
Municipal Buildings Recommendations			
5. Immediately convene a citywide departmental summit including Public Works and Planning and Development to establish a timeline and budget for electrifying all city owned buildings and installing solar plus storage at City buildings wherever possible.	Work is underway to electrify City facilities as they are renovated, such as the Mental Health facility and North Berkeley Senior Center. Staff is also working with EBCE to develop a portfolio of municipal facilities to install solar + storage.	Additional analysis is underway to identify the level of resources needed to effectively advance electrification and solar + storage in existing City facilities.	Alternative work in progress.
6. Review and re-prioritize all funds currently earmarked for capital improvements to facilitate rapid electrification of municipal buildings.	Work is underway to electrify City facilities as they are renovated, such as the Mental Health facility and North Berkeley Senior Center. Staff is also working with EBCE to develop a portfolio of municipal facilities to install solar + storage.	Additional resources will be required to implement the outcomes of current analysis to identify solar + storage opportunities.	Alternative work in progress.
7. Work with East Bay Community Energy to secure grants for solar with storage.	Staff is currently working with EBCE on this project to identify potential municipal critical facilities to install solar + storage. This project will take place approximately over the next two years.	Additional resources will be required to implement the outcomes of current analysis to identify solar + storage opportunities.	In progress.
8. Use the 2 x 2 process to coordinate with BUSD in establishing a fossil fuel free goal and providing BUSD with technical and policy assistance to achieve it.	City staff are tracking progress on the BUSD sustainability and resilience planning efforts.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.

Recommendations	Staff Response	Additional Resources Required	Status
9. Set higher goals for municipal buildings related to indoor air quality, lowered carbon footprint, and all electric as outlined in Berkeley Deep Green Building and Healthy Building Network's HomeFree Spec guidance.[3] In addition to developing expertise that can be shared with Berkeley residents and property owners, these changes would have health, environmental, and economic benefits. The City can decide the standards which municipal buildings must be built or remodeled to. It is our understanding that currently, there is no requirement beyond meeting minimum state building codes.	Berkeley's Municipal Green Building Policy requires new municipal construction to meet the Silver LEED Green Building Standard. Staff are focused on opportunities to electrify City facilities through bond-funded renovation projects.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Alternate work in progress.
Residential and Commercial Buildings Recommendations			
10. Develop options for expanding the coverage of the current LEED requirements to other areas of the City including mandatory points in certain sections.	In keeping with the Berkeley Deep Green Building Initiative Referral Response, staff is currently developing requirements for all-electric new construction and local amendments to the 2019 California Green Buildings Standards Code (CALGreen). These actions build from and strengthen state building code requirements rather than utilizing LEED, a building certification system, while accomplishing similar goals.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Alternative work in progress.
11. Strategically relax the Planning Code, such as density and/or parking requirements or accelerated permit review in exchange for electrification and energy efficiency measures.	Planning Commission and City staff are currently advancing several efforts that provide incentives for increased affordable housing. Several provisions of State law also promote affordable housing. Staff is currently developing implementation and enforcement	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Alternative work in progress.

[3] https://homefree.healthybuilding.net/reports

Recommendations	Staff Response	Additional Resources Required	Status
	procedures for the recently adopted prohibition on natural gas in projects applying for Use Permit or Zoning Certificate, starting January 1, 2020.		
12. Place moratorium on natural gas cooktops and dryers in new residences or on new gas hook ups if possible.	The City is currently developing several policy options for promoting and/or requiring electrification in new buildings, consistent with the natural gas prohibition ordinance.	City staff is actively collaborating regionally on this issue.	In progress.
13. Institute a transfer tax rebate for energy efficiency upgrades and electrification at time of sale.	A referral has been passed by City Council to achieve this recommendation. Staff is developing program options.	Additional analysis is underway to identify the level of resources needed to effectively implement this new program.	In progress.
14. Ensure every plan checker is trained in methods of electrification, and instructed to present that information to property owners at the beginning of the permit application process. In this way, every interaction with property owners becomes an opportunity to educate them on their options for home energy efficiency and electrification and their importance. Building owners need to understand the importance of reducing energy consumption and electrification and to switch out fossil fuel appliances for electric whenever possible.	Building and Safety staff are regularly trained on application of the building and energy codes. City staff also partner with the Berkeley Climate Action Coalition and others to conduct electrification outreach in the community.	The Planning Department is requesting additional staff resources to enable additional training for City staff (e.g., plan checkers) as well as outreach and assistance for community members.	In progress.
15. Expand BESO and shift focus to include electrification along with energy efficiency. To be considered are: instituting more triggers that require an energy audit, more detailed energy audits, not allowing the seller to transfer the audit to the buyer, and required implementation	The BESO Evaluation, which is currently underway, will examine the administrative process and policy outcomes of the BESO program and make recommendations to the ordinance, including on ways to encourage electrification.	Additional analysis will be required to identify the level of resources needed to implement recommended improvements to the BESO evaluation.	In progress.

Recommendations	Staff Response	Additional Resources Required	Status
of some of the measures recommended in energy audit.			
16. Develop an effective communication and education strategy that reaches the Berkeley community at large. This strategy should include updating the City's website to reflect the City's prioritization of electrification, and low carbon footprint and low toxic construction. Updated green building information should be easily found on the Permit Service Center home page. Many architects, builders and homeowners begin the design process online, making key decisions based on information found online. It is critical the City's website offer clear guidance reflecting the urgency of the climate crisis.	The City is currently in process of redesigning its website, including a new, modern and clean look, as well as updated content that is easy to navigate. The website redesign process will take a year, and launch is expected in the spring of 2020. OESD will be working with professional content writers to include information on electrification and green building, as part of multiple climate action strategies that will be highlighted. Additionally, OESD will continue to work with other divisions within the Planning Department to facilitate information sharing on these critical strategies.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	In progress.
17. Work with PG&E to develop a plan for eventually shutting down natural gas service in Berkeley. Priority should be given to areas most vulnerable to the effects of climate change and earthquakes and those where infrastructure has not yet been upgraded to plastic. Funds that would be spent on upgrading gas infrastructure can instead be used for electrifying buildings and under-grounding electrical lines	This would require coordination and commitment from PG&E. City staff are currently focused on developing City policies and programs that advance electrification in new and existing buildings.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
18. Consider the development of a long term funding plan such as a very low interest revolving loan fund to assist property owners to decarbonize their buildings.	The Pathways to Clean Energy Buildings report will evaluate a wide range of potential policy and program strategies to transition Berkeley buildings to be fossil fuel free. This analysis will include financing options such as the one recommended.	None.	In progress.

Recommendations	Staff Response	Additional Resources Required	Status
19. The City should work with the BAAQMD to adopt rules with future effective dates to prohibit sale of gas powered appliances.	Staff coordinates with BAAQMD on a range of topics but defers to that agency to develop such rules.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
20. Increase regional and support state efforts to expand availability of low global warming potential refrigerant heat pumps space and water heaters for retrofit markets.	Staff collaborates regionally to encourage electric space and water heat pumps with low global warming potential for retrofit and new construction.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
III. Requiring all future City government procurements of vehicles to minimize emissions, and establishing a goal and plan for transitioning the city's vehicle fleet to all electric vehicles			
See V. for discussion and recommendation concerning 100% renewable energy for municipal vehicles.			
IV. Establishing a goal and plan for transitioning to 100% renewable energy for municipal operations and a community wide goal of 100% reductions by 2030.			
Municipal Transportation Recommendations			
21. Assess the city's transportation vehicle needs and develop an aggressive timeline for transitioning to all electric.[4] This assessment would include consideration of: 1) Switching to lower carbon transport options such as electric carts or bicycles where possible and 2) the timing of technology development and commercialization for car batteries.	Public Works staff is currently working to create an action plan for greening City fleet vehicles to phase out fossil fuel vehicles by 2030, per the Council referral from June 25, 2019 (item 36)[5].	Staff is working to identify the level of resources needed to effectively implement this recommendation.	In progress.
22. Immediately switch diesel vehicles to run on renewable diesel in the interim until fossil fuel free options are available for the tasks they perform.	The City of Berkeley switched from petroleum diesel to renewable diesel at all City fueling locations including fire stations, the Corporation Yard, and the Transfer Station in 2016.	The increased annual fleet fuel costs were estimated at $8,500 (in 2016).	Complete.
Citywide Transportation Recommendations			

[4] Ref: San Francisco Ordinance 115-17 Administrative Code Section 4.10-1:
c) By December 31, 2022, all light duty vehicles in the City fleet must be Zero Emission Vehicles in compliance with Environment Code Section 404, unless there is a waiver, exemption, or applicable exception detailed in Environment Code Chapter 4.

[5] See https://www.cityofberkeley.info/Clerk/City_Council/2019/06_June/Documents/06-25_Annotated_Agenda_pdf.aspx, Item 36.

Recommendations	Staff Response	Additional Resources Required	Status
23. Re-prioritize road and sidewalk capital expenditures to accelerate changes in favor of walking, human powered vehicles, and other low carbon footprint mobility alternatives. The Council should amend funding priorities to reflect the climate emergency.	Public Works has already taken steps to prioritize complete streets to serve active transportation modes. This is important because people ride bikes on all streets, not just bike boulevards or bike lanes, and pedestrian used sidewalks and crosswalks on all streets.	Staff is currently seeking to create 5 new positions dedicated to capital project delivery. The cost will be approximately $900,000 per year, much of which can come from grants and capital funding sources.	In Progress
24. Adopt financial incentives and disincentives to reduce transportation carbon emissions such as: free transit passes for youth, restricted vehicle access to certain streets, and additional parking fees. Funds raised would be used to support fossil fuel free transportation programs	With existing vacancies and no new positions, there is no capacity to develop such programs.	Additional staffing and funding beyond that already proposed for capital project delivery would be needed to explore such programs.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
25. Develop and implement a transit plan in support of the Climate Action Plan. The transit plan could include detailed accountability metrics such as required dates for identified new routes, dates for replacement of fossil fueled busses and shuttles with electric busses and shuttles, and smaller intra-neighborhood subsidiary transit (shuttles). The city should explore developing its own shuttle services similar to the Emery Go-Round using EVs as part of the transit plan	The Transportation Element of the General Plan has a Transit First Policy with the objective of facilitating the use of and access to transit as preferable to use of private automobiles. Establishment of meaningful or enforceable accountability metrics for regional transit agencies is not within the authority of the City and would need to involve the governing bodies for those agencies.	Development of a Transit Plan would require a clear scope, staffing plan, budget, and funding source. Establishment of City run shuttle services would require a significant new property tax or other funding source to cover the cost of capital, maintenance, operations, and staffing for a shuttle fleet.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
26. Add 3 FTE to the Transportation Division to expedite implementation of the city's bicycle, pedestrian, and BeST plans	These positions will be needed if the goal is to accelerate beyond delivery of the existing work plan, and actually pursue faster delivery of projects not currently in the work plan.	This would be in addition to the 5 new positions needed to deliver all the projects in the current work plan.	Not in Fiscal Year 2020 – 2021 Strategic Plan
27. Build all high priority projects in the city's bicycle, pedestrian, and BeST plans including tier 1 projects in the bike plan by 2025	The BeST plan contains approximately $500,000,000 in projects which are in priority order, but not specifically identified as high, medium, or low	Delivering the BeST plan in 6 years would require $500,000,000 in funding and 15 to 20 new staff dedicated to project delivery.	Alternative work in progress

Recommendations	Staff Response	Additional Resources Required	Status
	priority. This includes all bike and pedestrian plan projects.		
28. Develop a communication strategy to inform residents of fossil free and lower carbon footprint personal mobility options and the desirability of prioritizing these options	Existing staff has not had capacity to plan or develop such programs.	Unknown. The scope of this recommendation would need to be more fully developed.	Not in Fiscal Year 2020 – 2021 Strategic Plan
29. Continue to develop and expand programs that encourage residents to shift to fossil fuel free modes of transport, such as electric bike and scooter sharing, Waterside Workshop, and Safe Routes to School	Staff has already set delivery targets that far exceed capacity. This referral does not change that.	More staff, and fewer diversions from the existing work plan.	In Progress
30. Work with State authorities to prohibit operation of autonomous vehicles within city limits unless they are electric vehicles	Staff tracks state legislation such as SB1014 which requires state regulators to quantify emissions from ridesharing vehicles and to set emission targets for transportation network companies (TNCs), while requiring companies to develop plans to reduce those emissions.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan
31. Use the 2x2 process to encourage the BUSD to develop a plan for phasing out fossil fuel vehicles and supporting families to safely get to and from school without cars	BUSD recently purchased 8 electric school buses. City staff will continue to collaborate with BUSD to advance our shared sustainability goals.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
32. Lobby and work collaboratively with public and private transportation providers and the commercial sector to convert all vehicle fleets to electric power	City staff collaborates with other jurisdictions and organizations on electrification of vehicles broadly, but defers electrification of other fleets to the relevant jurisdictions or organizations.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
33. Support state programs that restrict the use of fossil fuel vehicles by ride hailing services such as Uber and Lyft	As aligned with direction from City Council and the strategies from the Berkley Electric Mobility Roadmap currently under development, City staff will support action to implement SB-	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.

Recommendations	Staff Response	Additional Resources Required	Status
	1014, California Clean Miles Standard and Incentive Program.		
Formally opposing the recent expansion of offshore drilling by the Trump Administration			
34. Formally endorse California laws intended to block offshore drilling if it has not done so already.	The Berkeley City Council approved a resolution on September 12, 2017 opposing new drilling off the California coast and fracking in existing offshore oil and gas wells. The Berkeley resolution calls for: • A ban on new drilling, fracking, and other well stimulation in federal and state waters off the California coast, • No new federal oil and gas leases in the Pacific, Atlantic, Arctic oceans and the eastern Gulf of Mexico — areas currently protected from new leases; and • A rapid phase-out of all oil and gas extraction off the California coast on a schedule sufficient to respond to the climate crisis.	None.	Complete.
V. Calling for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure			
1. Renewable Energy Sources			
35. Opt up all Berkeley's municipal, commercial and residential accounts to EBCE's 100% Renewable electricity with a policy of no added cost for CARE customers and an outreach campaign to enroll all eligible customers in the CARE program in 2019.	See response #1 above under "Fast Track".	See response #1 above under "Fast Track".	See response #1 above under "Fast Track".
36. Partner with all cities in CCAs to influence state legislators, the Governor, and CPUC	EBCE is a member of CalCCA, the statewide advocacy arm of CCA operators. CalCCA reaches out to local	Additional analysis would be required to identify the level of	Not in Fiscal Year 2020 – 2021 Strategic Plan.

Recommendations	Staff Response	Additional Resources Required	Status
Commissioners to develop guiding legislation, policies, and rules that support the continued existence of CCAs.	governments, and CCA board of directors, for support on legislative issues as needed.	resources needed to effectively implement this recommendation.	
2. Affordable Densification of Cities			
37. Work with MTC/ABAG, BART cities and counties to reframe and expand Transit Oriented Development concepts to conform with internationally used approaches that look beyond infill at already heavily used transit hubs, and prioritize infill housing everywhere developed in concert with expanded transportation strategies and expanded services (educational, recreational, commercial and environmental enhancement).	Staff is currently advancing several policies and programs referred by City Council to expand housing opportunity near transit.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Alternative work in progress.
38. Work with Bay Area cities and counties to develop a regional funding mechanism to subsidize low income and affordable housing in all jurisdictions.	Mayor and Council are leading several local and regional efforts to increase funding for affordable housing. Staff is also pursuing grant funding to further develop programs and policies that increase affordable housing and reduce displacement.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	In progress.
39. Explore viability of reducing R-1 zoning to increase housing availability, opportunities for home ownership and improve transit access through increasing densification. In addition, support adoption of such transit oriented development throughout the region to reduce development pressure on open spaces, provide more housing near jobs, and provide the density to support expansion of regional	City Council has referred to the Planning Commission and City staff analysis of potential policy options to enable “missing middle” and workforce housing.	Council allocated funding to support the relevant analysis.	In progress.
Low Emissions Public Transportation Infrastructure			
40. Work with AC Transit to convert all public transit to EVs.	City staff supports AC Transit and this concept, but defers electrification of AC Transit fleets to that organization.	AC Transit would require significant new regional funding	Not in Fiscal Year 2020 – 2021 Strategic Plan.

Recommendations	Staff Response	Additional Resources Required	Status
		sources to accelerate fleet conversion to EVs.	
41. Work with AC Transit and major employers to expand existing bus service and add all manner of appropriately sized bus and shuttle services, including into the suburbs.	The existing Transit First Policy has been used for many years as a basis to encourage AC Transit to expand bus service. AC Transit has often had to reduce service due to financial constraints.	The City would need to support major new regional funding sources to reverse the trend of diminishing transit revenues and services, particularly given competition from new Transportation Networking Companies (TNCs)	Not in Fiscal Year 2020 – 2021 Strategic Plan.
42. Work to create dedicated bus/shuttle-only lanes on all bridges, freeways and major streets.	Where feasible, staff is already implementing or considering dedicated transit lanes or signal priority on designated transit routes on City owned multilane roadways.	Individual projects require funding for design and construction, as well as staff capacity or projects in excess of those already on the work plan.	Alternative Work In Progress
43. Work to normalize ride sharing	511.org has provided regional rideshare matching and other services for many years.	No additional resources needed for continuation of 511.org program.	Alternative Work In Progress
44. Work with MTC, regional transit providers and the state to augment subsidies such that public transit is affordable for all	The City worked with the Alameda County Transportation Commission to prioritize the use of roughly half the 2014 Measure BB Transportation Sales Tax to support transit service. This helped to restore some of the previous service cuts. This included a pilot program to explore free transit service for students.	Any meaningful subsidies will require major new tax revenues on the state or regional level.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
45. Initiate regional policy consistent with fossil free goals for ride hailing services and the introduction of autonomous vehicles (note this was in the Summary Recommendations Section under Regional Action). Lobby the state to regulate ride hailing services to reduce overall per capita VMT	Staff collaborates regionally on transportation-related issues.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan. .
Carbon Sink			

Recommendations	Staff Response	Additional Resources Required	Status
46. Plant more trees	The Parks, Recreation & Waterfront Department has a tree planting plan with a focus on expanding the urban forest in communities with sparse tree canopy cover and the lowest incomes, which experience the worst pollution impact in Berkeley. The plan also focuses on being thoughtful on the species and locations of trees planted to promote the long-term health and life of the trees, as well as to maximize the potential for carbon absorption as much as possible. One of the plan's goals is to plant 1000 new trees in targeted areas over the next two years, with continued planting into the future.	Additional work beyond current activities would require additional staff time and funding.	In progress.
47. Apply compost (and biochar where possible) to city parks, median strips and generally all planted areas	The Parks, Recreation & Waterfront Department does not currently apply compost or biochar to these locations. The use of compost in place of native soil can create an interface between the two mediums that can be problematic for the establishment of urban trees.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	Not in Fiscal Year 2020 – 2021 Strategic Plan.
48. Support use of low carbon construction materials both in municipal buildings and commercial and residential projects	Staff is currently involved in a regional effort of low-embodied carbon in concrete that may result in a proposed local amendment to the 2019 Building Standards Code.	Additional analysis would be required to identify the level of resources needed to effectively implement this recommendation.	In progress.

Recommendations	Staff Response	Additional Resources Required	Status
49. Support urban farming: for example through recently adopted urban farming policies and also planting suitable edible perennials in public spaces	Currently underway. Ordinance No. 7,620-N.S.[6] passed July 10, 2018 to add to BMC a chapter governing urban agriculture in Berkeley, officially went into effect on Aug. 23, 2018. The new rules encourage small-scale and larger-scale urban farming throughout the city.	None.	In progress.
50. Support citywide programs, such as the Ecology Center's farmers market program, that give all residents access to fresh, organic, regionally grown foods	The City currently supports several citywide programs including the Ecology Center's farmers' market program.	None.	In progress.

[6] See https://www.cityofberkeley.info/Clerk/City_Council/2018/07_Jul/Documents/2018-07-24_Item_03_Ordinance_7620.aspx

Office of the City Manager

ACTION CALENDAR
May 14, 2019

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Timothy Burroughs, Director, Planning and Development Department

Subject: Companion Report: Recommendations for a Fossil Fuel Free Berkeley

RECOMMENDATION

Refer to the City Manager to continue to implement existing policies and programs that are consistent with the recommendations in the Berkeley Energy Commission's Fossil Fuel Free Berkeley Report, such as the Building Energy Saving Ordinance and development of new building codes that promote building electrification, and also to complete new evaluations and analyses of current and potential future greenhouse gas reduction programs and policies in order to inform next steps for accelerating progress to a Fossil Fuel Free Berkeley.

SUMMARY

This report is in response to the excellent "Fossil Fuel Free Berkeley Report" developed by the Berkeley Energy Commission. In response to City Council's Climate Emergency Declaration and "Fossil Fuel Free Berkeley" referral to the Energy and Transportation Commissions, the Energy Commission conducted research and developed a report that makes a range of recommendations for accelerating the community's progress toward becoming fossil fuel free. This item has not yet been reviewed and discussed by the Transportation Commission.

Staff fully agrees with the urgency of the climate crisis and with the intent of the Energy Commission's recommendations to accelerate GHG reductions. However, as always, the challenge with doing more, faster, is that it requires additional staff and other resources to do so.

The Energy Commission report identifies 22 recommendations, all of which require additional staff time to implement. Staff is already advancing several of the Energy Commission's recommendations, including development of new energy "reach" codes that would promote building electrification, evaluating and updating the Building Energy Saving Ordinance (BESO), and expanding clean transportation infrastructure. Further, staff also recently released a "Pathway to Clean Energy" RFP which is designed to dovetail with the Energy Commission report, and focuses on how to equitably transition the existing building stock in Berkeley from natural gas to 100% clean energy. Staff has

also begun work on an Electric Mobility Roadmap, which will include action-oriented next steps for transitioning our transportation sector to clean, active forms of mobility.

FISCAL IMPACTS OF RECOMMENDATION

Staff is undertaking several concrete steps that are consistent with the Energy Commission's recommendation and that are designed to accelerate reductions in GHG emissions and create other co-benefits. Additional staff and other financial resources are required in order to implement new outreach and other programs that go beyond existing efforts. The City's recently released "Pathway to Clean Energy" RFP is designed to dovetail with the Energy Commission report and the work will provide a range of recommendations, including implementation costs and potential funding options, that are designed to accelerate GHG reductions in buildings The Electric Mobility Roadmap, scheduled for completion in Fall 2019, will also provide action-oriented strategies to reduce transportation related GHG emissions and identify implementation timeline and resources.

CURRENT SITUATION AND ITS EFFECTS

The Energy Commission's report was prepared in response to two referrals adopted by the City Council on June 12, 2018: The Fossil Fuel Free Berkeley referral and Council's Declaration of a Climate Emergency.

The Energy Commission's "Fossil Fuel Free Berkeley Report" is consistent with several actions already underway, including implementation and evaluation of the Building Energy Savings Ordinance (BESO), efforts to transition municipal buildings away from natural gas, education and outreach on electrification and clean electricity opportunities through East Bay Community Energy and other partners, and analysis of legal opportunities to ban natural gas in new construction. In addition, work is underway that is specifically designed to determine the timing, costs, and prioritization of further measures to transition both buildings and transportation away from fossil fuels. These efforts include the Electric Vehicle Roadmap, BESO Evaluation, the Pathway to Clean Energy Buildings study, and the Building Electrification Initiative. These studies will dovetail with the Energy Commission recommendation and identify the highest value policies and programs to achieve equity in the transition to clean energy in buildings and transportation. The resulting initiatives will provide research-based approaches that foster resilience and promote equity while minimizing unintended consequences.

BACKGROUND

The City of Berkeley has a longstanding commitment to climate action and community resilience. In 2006, Berkeley voters overwhelmingly approved Measure G, which called for reducing the community's GHG emissions by 80% below year 2000 levels by 2050. As a result, the Berkeley Climate Action Plan (CAP) was developed through a community-wide process and adopted by the City Council in 2009. The City achieved 15% reductions in GHG emissions from 2000 to 2016.

On June 12, 2018, City Council referred "to the Energy Commission and Transportation Commission consideration of the proposed resolution or similar action to further implement the Climate Action Plan and establish the goal of becoming a Fossil Fuel Free Berkeley, and further consider:

> Establishing a date by which we are committed to being a Fossil Fuel Free City; Opposing further transportation of oil, gas, and coal;
>
> Fully implementing Berkeley Deep Green Building, raising the citywide LEED certification requirement above the current LEED Silver, and applying the same requirements to newly constructed city facilities, and major renovations;
>
> Requiring all future City government procurements of vehicles to minimize emissions, and establishing a goal and plan for transitioning the city's vehicle fleet to all electric vehicles;
>
> Establishing a goal and plan for transitioning to 100% renewable energy for municipal operations and a community wide goal of 100% reductions by 2030; Formally opposing the recent expansion of offshore drilling by the Trump Administration; and
>
> Calling for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure."

On June 12, 2018 the City Council also adopted a "Declaration of a Climate Emergency" which referred "to the Energy Commission to study and report back to Council on a path for Berkeley to become a "Carbon Sink" as quickly as possible, and to propose a deadline for Berkeley to achieve this goal," ideally by 2030.

The Energy Commission's report was developed in response to those two Council referrals.

Both the Berkeley City Council and the Berkeley Energy Commission have demonstrated leadership and commitment to accelerating bold and transformative reductions in GHG emissions. In response to this urgent priority, staff is addressing many of the recommendations provided by the Energy Commission, and is committed to implementing existing and new ambitious programs and policies to help achieve these goals. Some programs that are currently being implemented to achieve these goals include:

Berkeley's Building Energy Saving Ordinance: BESO became effective December 1, 2015 as part of the Berkeley Municipal Code chapter 19.81. BESO requires Berkeley building owners to complete energy efficiency opportunity assessments and publicly

report the building's energy efficiency information at time of sale, and on an on-going basis. The City is currently conducting an in-depth evaluation of the program to align it with new electrification priorities and integrate the transfer tax rebate incentives, as referred by Council on November 27, 2018.

Community Choice Energy: East Bay Community Energy (EBCE) is a community-governed, local power supplier that provides cleaner electricity to Alameda County residents and businesses, at rates that are lower or comparable to PG&E. Council approved joining EBCE on November 1, 2016. On April 24, 2018, Council voted to opt up its municipal accounts to EBCE's 100% carbon-free electricity service – Brilliant 100 – to help the city achieve its CAP goals. With Brilliant 100 the City reduced its municipal GHG emissions by more than 50%. Staff has been conducting education and outreach to discourage opt-outs and encourage opt-up to the emissions-free electricity product. This outreach is in collaboration with local community-based organizations and in partnership with the Berkeley Climate Action Coalition.

Building Electrification strategies: Staff is currently conducting outreach and education to support the electrification of buildings, consistent with the Deep Green Building referral put forth by Council on February 28, 2017. In addition, staff is collaborating with other cities and regional agencies to conduct research on regulatory pathways to encourage or mandate electrification in new construction, and on strategies to use the California Environmental Quality Act (CEQA). In addition to the Electrification Expo, attended by over 300 people on February 7, 2019, staff is planning additional community engagement and education events, including technical trainings for building professionals.

Building Electrification Initiative (BEI): The City is currently receiving services through a grant from the Urban Sustainability Directors' Network to support the development of building electrification strategies in the low-rise residential sector through the Building Electrification Initiative. The BEI seeks to achieve large-scale market adoption of air source heat pumps and heat pump water heaters across North America within five years as a critical strategy to reducing GHG emissions from building heating, cooling, and hot water production.

Electric Vehicle (EV) Roadmap Strategic Plan: The City is currently developing a comprehensive action-based EV Roadmap to find opportunities to increase equitable access to EVs within Berkeley's diverse community. This project, to be completed in 2019, will identify specific EV goals and strategies to support Berkeley's climate, resilience, and equity goals with timelines, estimated costs, and opportunities for funding.

Pathway to Clean Energy Buildings RFP and Report: Staff is conducting a procurement process for national experts to conduct a high-level policy analysis and develop a detailed implementation plan for Berkeley to equitably transition existing buildings to be 100% fossil fuel free. This analysis will evaluate options, including those recommended

in the Energy Commission's report. This contract will utilize $50,000 previously allocated by the City Council to identify and develop a set of high value, cost-effective programs and policies to incentivize residential energy efficiency and electrification investments. This work should be completed in 2020.

Equity: Equity is an essential consideration to determine the most valuable programs and policies to create an inclusive path to a clean energy future in Berkeley. Staff is incorporating an equity-centered approach to evaluate who benefits from City sustainability programs and how to eliminate structural inequality and racism. Engaging communities most impacted in defining the problems and finding the solutions is an essential part of the City's commitment to increasing inclusiveness, accessibility, and equity.

ENVIRONMENTAL SUSTAINABILITY

These recommendations would accelerate reductions in GHG emissions, consistent with Climate Action Plan goals.

RATIONALE FOR RECOMMENDATION

Staff is working at capacity on numerous existing projects and programs that are consistent with the goals and recommendations outlined in the Fossil Fuel Free Berkeley Report. Work is underway to identify and develop strategies that provide the highest value for the community, with multiple benefits in equity and resilience, all consistent with the Energy Commission's recommendations.

ALTERNATIVE ACTIONS CONSIDERED

Significant additional resources would be required to implement the 22 actions identified in the Energy Commission Fossil Fuel Free Berkeley Report. Staff is, however, currently at work on several of the Energy Commission's recommendations, and is also conducting several new analyses that are informed by the Energy Commission's recommendations.

CONTACT PERSON

Billi Romain, Manager, Office of Energy and Sustainable Development,
Planning and Development Department, (510) 981-7432

Attachments:
1: "Fossil Fuel Berkeley" referral, June 12, 2018
2: "Declaration of a Climate Emergency" referral, June 12, 2018

ANNOTATED AGENDA BERKELEY
CITY COUNCIL MEETING
Tuesday, June 12, 2018
6:00 P.M.

COUNCIL CHAMBERS - 2134 MARTIN LUTHER KING JR. WAY

JESSE ARREGUIN, MAYOR
Councilmembers:

DISTRICT 1 – LINDA MAIO
DISTRICT 2 – CHERYL DAVILA
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – KRISS WORTHINGTON
DISTRICT 8 – LORI DROSTE

Council Consent Items

30. Fossil Fuel Free Berkeley
From: Councilmember Davila, Mayor Arreguin, and Councilmember Harrison
Recommendation: Refer to the Energy Commission and Transportation Commission the proposed resolution to further implementation of the Climate Action Plan and establish the goal of becoming a Fossil Fuel Free Berkeley: - Establish a date by which we are committed to being a Fossil Fuel Free City. - Oppose further transportation of oil, gas, and coal. - Strengthen green building requirements for newly constructed city facilities, and major renovations, including the potential for Zero Net Energy and further integration of considering climate impacts in capital planning projects. Current requirements are LEED Silver, which are far below what we require for new buildings in the Downtown. - All future City government procurements of vehicles should minimize emissions and set a goal of transitioning the city's vehicle fleet to all electric vehicles. - Establish a goal of transitioning to 100% renewable energy for municipal operations and community wide goal of 100% reductions by 2030. - Formally oppose recent expansion of offshore drilling by the Trump Administration. - Call for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure.
Financial Implications: Unknown
Contact: Cheryl Davila, Councilmember, District 2, 981-7120

Action: Moved to Action Calendar. 8 speakers. M/S/C (Harrison/Wengraf) to approve the recommendations in Item 30 and Item 49 as amended in the revised items submitted by Councilmember Hahn. Councilmembers Davila (Chair), Harrison, and Hahn appointed to Ad Hoc Committee.
Revised Recommendation for Item 30:
Refer to the Energy Commission and Transportation Commission consideration of the proposed resolution or similar action to further implement the Climate Action Plan and establish the goal of becoming a Fossil Fuel Free Berkeley, and further consider:

- *Establishing a date by which we are committed to being a Fossil Fuel Free City.*
- *Opposing further transportation of oil, gas, and coal.*
- *Fully implementing Berkeley Deep Green Building, raising the citywide LEED certification requirement above the current LEED Silver, and applying the same requirements to newly constructed city facilities, and major renovations.*

- *Requiring all future City government procurements of vehicles to minimize emissions, and establishing a goal and plan for transitioning the city's vehicle fleet to all electric vehicles*
- *Establishing a goal and plan for transitioning to 100% renewable energy for municipal operations and a community wide goal of 100% reductions by 2030.*
- *Formally opposing the recent expansion of offshore drilling by the Trump Administration.*
- *Calling for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure.*

Vote: Ayes – Maio, Davila, Harrison, Hahn, Wengraf, Worthington, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

Councilmember Cheryl Davila
District 2

CONSENT CALENDAR
June 12, 2018

To: Honorable Mayor and Members of the City Council
From: Councilmember Cheryl Davila, Mayor Jesse Arreguin and Councilmember Kate Harrison
Subject: Fossil Fuel Free Berkeley

RECOMMENDATION

Refer to the Energy Commission and Transportation Commission the proposed resolution to further implementation of the Climate Action Plan and establish the goal of becoming a Fossil Fuel Free Berkeley:

- Establish a date by which we are committed to being a Fossil Fuel Free City.
- Oppose further transportation of oil, gas, and coal.
- Strengthen green building requirements for newly constructed city facilities, and major renovations, including the potential for Zero Net Energy and further integration of considering climate impacts in capital planning projects. Current requirements are LEED Silver, which are far below what we require for new buildings in the Downtown.
- All future City government procurements of vehicles should minimize emissions and set a goal of transitioning the city's vehicle fleet to all electric vehicles
- Establish a goal of transitioning to 100% renewable energy for municipal operations and community wide goal of 100% reductions by 2030.
- Formally oppose recent expansion of offshore drilling by the Trump Administration.
- Call for region-wide solutions to carbon emissions, including rapid adoption of renewable energy sources, affordable densification of cities and low-emissions public transportation infrastructure.

FISCAL IMPACTS OF RECOMMENDATION

Unknown

ENVIRONMENTAL SUSTAINABILITY

Establishing the goal of achieving a Fossil Free City, and strengthening green building, city vehicle procurement, and renewable energy initiatives will further implementation of the Climate Action Plan.

BACKGROUND

On June 1, 2017, the 45th president and administration announced its intention to pull the United States out of the Paris Agreement, reached by 194 countries at the United Nations Conference of Parties 21 meeting in November, 2015. This action undercuts commitments the United States has made to our global partners and to United States citizens to combat climate change and reduce our GHG emissions. The 45th Administration has removed "global warming" and "climate change" content from many Federal agency websites and has proposed to cut funding for Federal research on clean energy, energy efficiency, clean fuels and clean transportation.

The Interior Department recently proposed opening Federal waters to new leases for oil and gas drilling, including off the coast of California. These and other reckless climate denial actions by the current federal Administration create tremendous risk and instability to the world's efforts to forestall climate catastrophe now and for future generations. It is now critical that cities double our climate commitments and actions. Cities must say no to new or expanded fossil fuel projects/use and move more rapidly to 100% clean energy. The City of Berkeley must accelerate and expand our leadership on issues laid out in our Climate Action Plan. This resolution is modeled after a resolution passed in Portland, Oregon and is part of the Fossil Fuel Free campaign by 350.org.

CONTACT PERSONS

Councilmember Cheryl Davila 510.981.7120

RESOLUTION NO. ##,###-N.S.

ESTABLISHING A GOAL OF ACHIEVING A FOSSIL FREE CITY

WHEREAS, the City of Berkeley Climate Action Plan has commendable goals of 33% reduction in greenhouse gases compared to 2000 by 2020 and 80% reduction by 2050; and

WHEREAS, the December 7, 2017 report from City staff shows only a 12% reduction as of 2015, indicating that the City is well behind in achieving both its 2020 and 2050 goals; and

WHEREAS, global temperatures are rising at an accelerating rate, averaging 0.9°C above 1950 - 1981 temperatures in 2017 according to NASA, and could reach the UN limit of 1.5°C as early as 2032 at the current rate of increase; and

WHEREAS, the current warming is already leading to an increase in heat waves, wildfires, floods, droughts, stronger hurricanes, extreme weather, and rising oceans, climate refugees, and

WHEREAS, the State of California has a goal to reduce greenhouse gases by 40% by 2030 but is also making insufficient progress towards achieving that goal, and

WHEREAS, this resolution is intended to substantially further both the City of Berkeley and the State goals, and

WHEREAS most of the greenhouse gases that have accumulated in the atmosphere can be attributed to the consumption of fossil fuels that companies such as Chevron, Exxon, BP, Shell, ConocoPhilips extracted, refined, transported, and sold; and

WHEREAS the processes by which Chevron, Exxon, BP, Shell, ConocoPhilips extract, refine, transport, market and/or sell fossil fuels in California generally and in Berkeley specifically create pollution that causes severe environmental harms that also constitute grave environmental injustices, and threaten catastrophic harms in Berkeley such as sea level rise, drought, and wildfires; and

WHEREAS fossil fuel companies have systematically distorted climate science, lied about climate change, and misled the public about the dangers of fossil fuels in order to impede any transition from fossil fuels to clean energy in California generally and in Berkeley specifically; and

WHEREAS, transportation of coal using open top rail cars results in significant volumes of materials escaping during transit, exposing local communities to toxic heavy metals in coal dust and particulates at levels potentially harmful to adjacent communities, workers, wildlife and nature; and

WHEREAS, investments in clean energy solutions create more jobs than fossil fuels and spur innovation and growth of the U.S. clean energy economy; and

WHEREAS, local, regional and global economies are transitioning to low-carbon energy sources, and businesses are leaders in providing renewable energy and energy efficiency; and

WHEREAS, dozens of American communities have passed resolutions addressing fossil fuel industry expansion, and hundreds of public officials, including governors, state and federal agencies, tribes, health organizations, religious leaders and other community leaders, have recognized the harms presented by fossil fuels to our environment and our communities; and

WHEREAS the Federal government is the nation's largest emitter of greenhouse gas and is currently governed by an administration committed both to fossil fuels and to climate denial; and

WHEREAS, Berkeley's first preference for meeting energy needs is energy efficiency, and the City remains committed to acquiring at a minimum all cost-effective energy efficiency available with a particular focus on achieving energy efficiency in low-income housing; and

WHEREAS, the transportation sector accounts for 56 percent of greenhouse gas emissions in the City of Berkeley, and significant reductions in emissions from transportation are essential to achieving our climate-protection goals; and

WHEREAS, electrifying car, truck, and bus fleets will bring environmental and economic benefits to local residents, including lower cost transportation options for low income households; and

NOW THEREFORE BE IT RESOLVED that the City of Berkeley will actively oppose the expansion of fossil fuel infrastructure, including but not limited to those owned and/or operated by Chevron, Exxon, BP, Shell, ConocoPhilips, the primary purpose of which is to extract, refine, transport or store fossil fuels in or through city limits or adjacent waterways, including offshore drilling and;

NOW THEREFORE BE IT RESOLVED, that the City of Berkeley shall commit to a goal of 100% clean, carbon-free energy and a 100% reduction in total greenhouse gas emissions, including from transportation and buildings, as soon as possible and no later than 2030.

BE IT FURTHER RESOLVED, all future government procurements of vehicles should minimize emissions and phase-out the internal combustion engine as soon as possible; and

BE IT FURTHER RESOLVED, the City of Berkeley opposes the rollback of climate policy at the federal level and affirms its ongoing commitment to the goals of the Paris Climate Agreement and the City's responsibility to meet its proportionate greenhouse gas reductions for the United States under the Paris Climate Agreement; and

BE IT FURTHER RESOLVED, the City of Berkeley will establish a goal of supplying 100 percent of electricity for City operations from renewable energy by 2022 through a combination of on-site renewable electricity generation, utility-supplied renewables, dedicated off-site renewable resources, and renewable energy credit (REC) purchases; and

BE IT FURTHER RESOLVED, the City of Berkeley will prioritize renewable resources over the purchase of RECs with the intention of reducing reliance on RECs during the transition to 100% renewable resources over time; and

BE IT FURTHER RESOLVED, the City of Berkeley will prioritize community-based development of renewable energy infrastructure and should make investments in community based organizations to build capacity to lead such development to meet 100% renewable community-wide energy needs including transportation, heating, and electricity via such infrastructure; and

BE IT FURTHER RESOLVED, the City of Berkeley will partner with labor unions, and others to develop training and retraining programs to serve workers who would be displaced by this transition or workers who would otherwise be working in the energy field so that they are well-equipped for the "renewable energy" economy; and

BE IT FURTHER RESOLVED, a renewable energy transition is an opportunity to redress historical inequities in our community and must be just. This means, in part, prioritizing the resources to train and hire people from within communities of color and women that have traditionally been underrepresented in renewable energy, energy efficiency, and the workforce needed to implement a successful renewable energy transition; and

BE IT FURTHER RESOLVED, City projects and procurements under this proposal will use proven policies to ensure the jobs created are high-quality, family-wage jobs that meet our high standards of workforce inclusion for women and communities of color; and

BE IT FURTHER RESOLVED, the City of Berkeley will partner with energy providers and to accelerate the transition to renewable energy and minimize dependence on fossil fuels, expressing the City's preferences for resources consistent with its renewable energy goals and opposition to any new fossil fuel power project; and

BE IT FURTHER RESOLVED, the City of Berkeley urges utility companies to maximize energy efficiency, demand control technologies, energy storage, and renewable energy and avoid any new commitments to ownership of or long-term contracts from non-renewable sources; and

BE IT FURTHER RESOLVED, the City of Berkeley will partner with energy providers and community-based organizations to adopt policies that reduce the cost-burden for low-income customers, and make incentives available to foster equality in energy burdens as a percent of household incomes; and

BE IT FURTHER RESOLVED, the City of Berkeley urges the governor of California to adopt a 100% renewable energy goal that will continually update as new scientific findings are discovered that change our timeline and support SB 100.

ANNOTATED AGENDA
BERKELEY CITY COUNCIL MEETING
Tuesday, June 12, 2018
6:00 P.M.

COUNCIL CHAMBERS - 2134 MARTIN LUTHER KING JR. WAY

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – LINDA MAIO
DISTRICT 2 – CHERYL DAVILA
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – KRISS WORTHINGTON
DISTRICT 8 – LORI DROSTE

49. Declaration of Climate Emergency
From: Councilmembers Davila and Harrison
Recommendation: Adopt a Resolution endorsing the declaration of a Climate Emergency and partner with institutions, organizations, community groups, businesses, neighboring city and county governments to plan and organize a regional Climate Emergency Town Hall.
Financial Implications: Unknown
Contact: Cheryl Davila, Councilmember, District 2, 981-7120
Action: 8 speakers. M/S/C (Harrison/Wengraf) to approve the recommendations in Item 30 and Item 49 as amended in the revised items submitted by Councilmember Hahn. Councilmembers Davila (Chair), Harrison, and Hahn appointed to Ad Hoc Committee.
Revised Recommendation for Item 49:

Adopt Resolution No. 68,486–N.S., amended to change "citizens" to "residents," endorsing the declaration of a Climate Emergency and commit the City Council to partner with institutions, organizations, community groups, businesses, and neighboring city and county governments to plan and organize a regional Climate Emergency Town Hall, and carry forward the Climate Action Resolutions.

Refer to the Energy Commission to study and report back to Council on a path for Berkeley to become a "Carbon Sink" as quickly as possible, and to propose a deadline for Berkeley to achieve this goal.

Establish a Council Ad Hoc Subcommittee to organize a Global Climate Action Summit and undertake other actions outlined in the Resolution, and appoint a Subcommittee Chair.

Vote: Ayes – Maio, Davila, Harrison, Hahn, Wengraf, Worthington, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

Councilmember Cheryl Davila
District 2

ACTION CALENDAR
June 12, 2018

To: Honorable Mayor and Members of the City Council
From: Councilmembers Cheryl Davila and Kate Harrison
Subject: Declaration of Climate Emergency

RECOMMENDATION
Adopt a Resolution endorsing the declaration of a Climate Emergency and partner with institutions, organizations, community groups, businesses, neighboring city and county governments to plan and organize a regional Climate Emergency Town Hall.

FISCAL IMPACTS OF RECOMMENDATION
Unknown

ENVIRONMENTAL SUSTAINABILITY
Declaration of a Climate Emergency, and a regional Climate Emergency collaborative will further the City's environmental sustainability goals.

BACKGROUND
Human activities have warmed the Earth enough to end the 12,000-year period of climate stability that allowed agriculture and human civilization to develop. Global warming has already set in motion catastrophic changes to the Earth system, including accelerating ice mass loss from the Greenland and West Antarctic Ice Sheets and the thawing of the borders of the vast Arctic permafrost, which holds twice as much stored carbon as the entire atmosphere. NASA scientists have concluded that the complete collapse of the Greenland Ice Sheet alone could raise sea levels 23 feet, creating several billion climate refugees and a "global-scale catastrophe." The arctic ice sheet went above freezing in winter of 2017 indicating near term melt. With the Trump administration aggressively thwarting our ability to prevent climate catastrophe, our situation is dire. Over 19,000 scientists have signed a Second Warning to Humanity proclaiming that "a great change in our stewardship of the Earth and the life on it is required if vast human misery is to be avoided"; The global economy's overshoot of ecological limits and, increasingly climate change, are driving a global fresh water scarcity crisis and the sixth mass extinction of species, which could devastate much of life on earth for the next 10 million years. All this and more demonstrate we are in the midst of a climate emergency.

CONTACT PERSONS
Councilmember Cheryl Davila 510.981.7120

RESOLUTION NO. ##,###–N.S.

RESOLUTION ENDORSING THE DECLARATION OF A CLIMATE EMERGENCY

WHEREAS, human activities have warmed the Earth enough to end the 12,000-year period of climate stability that allowed agriculture and human civilization to develop;

WHEREAS, the world came together in December 2015 to address the end to this period of climate stability due to global warming, agreeing to keep warming to "well below 2°C above pre-industrial levels" and to "pursue efforts to limit the temperature increase to 1.5°C";

WHEREAS, in 2017 the global surface temperature was over 1°C warmer than the pre-industrial base period;[1]

WHEREAS, global warming has already set in motion catastrophic changes to the Earth system, including accelerating ice mass loss from the Greenland and West Antarctic Ice Sheets and the thawing of the borders of the vast Arctic permafrost, which holds twice as much stored carbon as the entire atmosphere;

WHEREAS, according to the latest climate projections, humanity is on track to warm the Earth a sustained average of 1.5°C above pre-industrial levels as soon as 2026;[2]

WHEREAS, the Greenland Ice Sheet, which is likely to completely collapse at 1.6°C warming, which NASA scientists have concluded would lead to 23 feet of sea-level rise, billions of climate refugees, and a "global-scale catastrophe";

WHEREAS, it is estimated that sustained 1.5°C warming could cause a long-term, "continuous thaw" of the Arctic permafrost, which could turn the tundra from carbon sink into source in the 2020s;

WHEREAS, such tipping points must be avoided at all costs, as they will have positive feedback effects on the climate system, causing further and increasingly uncontrollable global warming;

WHEREAS, failure to uphold the Paris goal of keeping warming "well below 2°C" would lead to the disappearance of island nations and "certain death" for Africa, Chief Negotiator for the G77 Lumumba Stanislaus Di-Aping warned in 2009;

WHEREAS, over 19,000 scientists have signed a Second Warning to Humanity proclaiming that "a great change in our stewardship of the Earth and the life on it is required, if vast human misery is to be avoided";

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[1] Hansen, James, et al., Global Temperature in 2017 (18 January 2018).

[2] See, *inter alia,* Henley, B. J., and A. D. King (2017), *Trajectories toward the 1.5°C Paris target: Modulation by the Interdecadal Pacific Oscillation*, Geophys. Res. Lett., 44, 4256–4262, doi: 10.1002/2017GL073480; Jacob, D. , Kotova, L. , Teichmann, C. , Sobolowski, S. P., Vautard, R. , Donnelly, C. , Koutroulis, A. G., Grillakis, M. G., Tsanis, I. K., Damm, A. , Sakalli, A. and van Vliet, M. T. (2018), *Climate Impacts in Europe Under +1.5°C Global Warming*. Earth's Future, 6: 264-285. doi:10.1002/2017EF000710

WHEREAS, it is estimated that humanity currently uses the equivalent of about 1.6 earths per year in resource consumption and waste disposal, a figure that is headed toward 3 earths per year in 2030;

WHEREAS, the global economy's overshoot of ecological limits and, increasingly, climate change are driving a global fresh water scarcity crisis and the sixth mass extinction of species, which could devastate much of life on Earth for the next 10 million years;

WHEREAS, England's chief scientific advisor has warned that humanity faces a "perfect storm of global events" by 2030 as climate change, population growth, and growing demand for food, energy and fresh water incites violent conflict over diminishing resources that are essential to human life and dignity;

WHEREAS, climate change has been called a "threat multiplier" that exacerbates pre-existing tensions and political instability in regions across the globe by both the United States Department of Defense and North Atlantic Treaty Organization, and has been linked to the Syrian war, the rise of Boko Haram in Nigeria, as well as the famines, water shortages, and resulting conflict in Yemen, Somalia, and South Sudan;

WHEREAS, climate-fueled droughts, famines, and diseases have already killed millions of people in the Global South, and displaced millions more;[3]

WHEREAS, indigenous and low-income communities and communities of color in the United States and abroad have suffered the gravest consequences of the extractive economy since its inception;

WHEREAS, according to the National Centers for Environmental Information (NCEI), in 2017, "the U.S. was impacted by 16 separate billion-dollar disaster events tying 2011 for the record number of billion-dollar disasters for an entire calendar year," with a cumulative cost of $309.5 billion, shattering the previous U.S. annual record cost of

$219.2 billion in 2005 due to Hurricanes Dennis, Katrina, Rita and Wilma;[4]

WHEREAS, the death and destruction already wrought by global warming of 1°C demonstrate that the earth is already too hot for safety and justice;

WHEREAS, it is an act of unspeakable injustice and cruelty to knowingly subject our fellow humans now and into the future to societal disintegration, food and clean water shortages, economic collapse, and early death on an increasingly uninhabitable planet;

WHEREAS, Pope Francis has declared that humanity is on the verge of a "global

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[3] A 2009 report estimated that "climate change causes 400,000 deaths on average each year today, mainly due to hunger and communicable diseases that affect above all children in developing countries." It further noted, "Our present carbon-intensive energy system and related activities cause an estimated 4.5 million deaths each year linked to air pollution, hazardous occupations and cancer." A Guide to the Cold Calculus of a Hot Planet, Climate Vulnerability Monitor 2nd Edition.

[4] In fact, NCEI notes, "2017 arguably has more events than 2011 given that [its] analysis traditionally counts all U.S. billion-dollar wildfires, as regional-scale, seasonal events, not as multiple isolated events." NOAA NCEI U.S. Billion-Dollar Weather and Climate Disasters (2018).

suicide," noting that we will destroy ourselves if we destroy God's creation, and has called for a life-sustaining economy;

WHEREAS, common sense and morality indicate that humanity can no longer safely emit greenhouse gases and must seek to draw down the excess carbon from the atmosphere in order to restore a safe level of greenhouse gas concentrations and global average temperatures well below today's levels and back to preindustrial levels as quickly as possible;

WHEREAS, reversing global warming and restoring a safe and stable climate requires an emergency mobilization to reach zero greenhouse gas emissions across all sectors at wartime speed, to rapidly and safely drawdown or remove all the excess carbon from the atmosphere, and to implement safe measures to protect all people and species from the consequences of abrupt warming in the near-term;

WHEREAS, reversing ecological overshoot and halting the sixth mass extinction requires an effort to preserve and restore half Earth's biodiversity in interconnected wildlife corridors and to humanely stabilize population. as well as a shift toward a climate-resilient society and culture that prioritize conservation, community, and mutual aid over consumerism and narcissism;

WHEREAS, justice requires that those countries, classes, and industries that have contributed the most to this global climate and ecological cataclysm carry a commensurate burden in reversing it and protecting those most impacted from the lethal impacts already underway;

WHEREAS, justice also requires, in developing and carrying out the emergency mobilization to restore a safe climate, the active consultation, participation, and protection of communities that have historically borne the brunt of the extractive economy;

WHEREAS, the United States of America has disproportionately contributed to the climate and ecological crises and to preventing a transition away from fossil fuels, and Americans thus bear an extraordinary responsibility to solve the crises;

WHEREAS, as a part of the United States, the community of Berkeley and surrounding counties, despite well-meaning efforts, have disproportionately contributed to dangerous greenhouse gas emissions and thus must substantially curtail use of fossil fuels and greenhouse gas emissions on behalf of the larger planetary community to enable a rapid, just transition to a stable climate;

WHEREAS, severe rainfall in February 2017 across northern and central California resulted in at least five deaths and an estimated $1.5 billion in damage, including to the Oroville Dam spillway, causing a multi-day evacuation of 188,000 residents, and to the city of San Jose, flooding neighborhoods and forcing 14,000 residents out of their homes.

WHEREAS, the October 2017 Northern California wildfires caused more than $9.4 billion in damage, destroying over 8,900 structures, displacing many people, killing 44, and injuring another 192;

WHEREAS, we cannot wait for more devastating floods, heatwaves, fires, droughts, rising sea levels, and public health and humanitarian crises that threaten local residents, ecologies, businesses, and the broader Bay Area population to begin the necessary emergency response;

WHEREAS, during World War II, the Bay Area came together across race, age, class, gender and other differences in an extraordinary regional mobilization, building and repairing Liberty ships, converting car assembly plants into tank manufacturing facilities, rapidly switching to mass transit systems, and serving as the most important symbol of freedom in the Pacific Theater during the war as well as the site of the signing of the United Nations Charter at its conclusion;

WHEREAS, the following mayors in the greater Bay Area have committed to adopt, honor, and uphold the Paris agreement, noting, "We will intensify efforts to meet each of our cities' current climate goals, push for new action to meet the 1.5 degrees Celsius target, and work together to create a 21st century clean energy economy . . . The world cannot wait—and neither will we": Mayor Jesse Arreguin of Berkeley, Mayor Peggy McQuaid of Albany, Mayor Trish Herrera Spencer of Alameda, Mayor Charles Stone of Belmont, Mayor Lori S Liu of Brisbane, Mayor Ricardo Ortiz of Burlingame, Mayor Mark Landman of Cotati, Mayor Darcy Paul of Cupertino, Mayor Juslyn Manalo of Daly City, Mayor David Haubert of Dublin, Mayor Janet Abelson of El Cerrito, Mayor John J. Bauters of Emeryville, Mayor Lily Mei of Fremont, Mayor Debbie Ruddock of Half Moon Bay, Mayor Barbara Halliday of Hayward, Mayor Shaun McCaffery of Healdsburg, Mayor Mary Prochnow of Los Altos, Mayor Gary Waldeck of Los Altos Hills, Mayor Marico Sayoc of Los Gatos, Mayor Rob Schroder of Martinez, Mayor Kirsten Keith of Menlo Park, Mayor Reuben D. Holober of Millbrae, Mayor Ken Rosenberg of Mountain View, Mayor Jill Techel of Napa, Mayor Libby Schaaf of Oakland, Mayor Greg Scharff of Palo Alto, Mayor David Glass of Petaluma, Mayor John Seybert of Redwood City, Mayor Jake Mackenzie of Rohnert Park, Mayor Tom Butt of Richmond, Mayor Bob Grassilli of San Carlos, Mayor Mark Farrell of San Francisco, Mayor Sam Liccardo of San Jose, Mayor Pauline Russo Cutter of San Leandro, Mayor Rick Bonilla of San Mateo, Mayor Lisa M. Gillmor of Santa Clara, Mayor Chris Coursey of Santa Rosa, Mayor Rachel Hundley of Sonoma, Mayor Glenn Hendricks of Sunnyvale, and Mayor Debora Fudge of Windsor;

WHEREAS, the Global Climate Action Summit, the purpose of which is to "bring people together from around the world to showcase climate action and inspire deeper commitments from national governments, and each other, in support of the Paris Agreement," will be held in San Francisco in September 2018;

WHEREAS, the community of Berkeley and surrounding counties have the insight, drive, capacity and capital to take a moral stand and do all we can to restore a safe climate within our own boundaries and on behalf of our planetary community;

WHEREAS, in Berkeley and the broader Bay Area, we can rise to the challenge of the greatest crisis in history by organizing politically to catalyze a national and global climate emergency effort, employing local workers in a mobilization effort building and installing renewable energy infrastructure, growing healthy food that stays in the community, restoring ecosystems, and retrofitting and redesigning our built environment, electric grid, and transportation systems;

WHEREAS, the Global Climate Action Summit presents an unparalleled opportunity for the City of Berkeley and the greater Bay Area to inspire and influence summit attendees to end emissions from all sources at emergency speed through a just mobilization and, in so doing, to affect the course of human history;

WHEREAS, the Berkeley Climate Action Coalition has laid the foundation for a just emergency climate mobilization through its work, including raising the profile of and implementing key goals of the Berkeley Climate Action Plan, championing community choice energy for Alameda County, enhancing Berkeley's biking and pedestrian access by promoting complete streets projects, developing local guidelines and policy to promote vacant lot conversion to community gardens and sponsoring water saving projects and education during record-breaking drought;

WHEREAS, the City of Berkeley can act as a global leader by both converting to an ecologically, socially and economically restorative economy, and by catalyzing a unified regional climate emergency mobilization effort this year; and

1000NOW BE IT THEREFORE RESOLVED, the City of Berkeley declares that we face an existential Climate Emergency that threatens our city, region, state, nation, civilization, humanity and the natural world;

BE IT FURTHER RESOLVED, the City of Berkeley endorses a just citywide emergency mobilization effort to citywide greenhouse gas emissions as quickly as possible and immediately initiates an effort to safely draw down carbon from the atmosphere;

BE IT FURTHER RESOLVED, the City of Berkeley commits to becoming a carbon sink by 2030;

BE IT FURTHER RESOLVED, the City of Berkeley commits to educating our citizens about the climate emergency and working tirelessly to catalyze a just emergency climate mobilization at the local, state, national, and global local to protect our citizens as well as all the people and species of the world;

BE IT FURTHER RESOLVED, the City of Berkeley underscores the need for full community participation and support, and recognizes that the citizens of Berkeley, the Berkeley Climate Action Coalition, the Ecology Center, and other community organizations will be integral to the mobilization effort;

BE IT FURTHER RESOLVED, the City of Berkeley commits to keeping the considerations of disadvantaged communities central to all climate emergency mobilization planning processes and to inviting and encouraging such communities to actively participate in order to advocate directly for their needs;

BE IT FURTHER RESOLVED, the City of Berkeley, in order to ensure a just transition, will consult with environmental justice, economic justice, and racial justice organizations at every step of the climate emergency mobilization planning process;
BE IT FURTHER RESOLVED, the City of Berkeley calls for a Regional Just Transition and Climate Emergency Mobilization Collaborative Effort, inviting concerned citizens, youth, faith, labor, environmental, economic and social justice organizations as well as

other community groups, and all elected officials in and from Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties, and especially all the mayors who have signed on to enact the Paris Agreement, to initiate a just local, state, national, and global climate emergency mobilization to restore a safe climate;

BE IT THERE RESOLVED, the City of Berkeley seeks to partner with local and regional agencies to participate in this regional emergency just mobilization effort and to intensify support of a comprehensive just transition to restore a safe climate;

BE IT FURTHER RESOLVED, the City of Berkeley will coordinate with other organizations and agencies to organize a regional emergency town hall in advance of the September 2018 Global Climate Action Summit to begin to envision the Regional Just Transition and Climate Emergency Mobilization Collaborative Effort;**BE IT FURTHER RESOLVED**, the City of Berkeley calls on the State of California to initiate a just statewide emergency mobilization effort to reverse global warming, which, with appropriate financial and regulatory assistance from Federal authorities, ends statewide greenhouse gas emissions as quickly as possible and immediately initiates an effort to safely draw down carbon from the atmosphere;

BE IT FURTHER RESOLVED, the City of Berkeley calls on the United States of America to initiate a just national emergency mobilization effort to reverse global warming, which ends national greenhouse gas emissions as quickly as possible and immediately initiates an effort to safely draw down carbon from the atmosphere; and

BE IT FURTHER RESOLVED, the City of Berkeley calls on all governments and peoples worldwide to initiate a just global emergency mobilization effort to reverse global warming, which ends global greenhouse gas emissions as quickly as possible and immediately initiates an effort to safely draw down carbon from the atmosphere.

05

ACTION CALENDAR
March 26, 2019

To: Honorable Members of the City Council

From: Mayor Jesse Arreguín, and Councilmembers Sophie Hahn, Kate Harrison, and Cheryl Davila

Subject: Considering Multi-year Bidding Processes for Street Paving

RECOMMENDATION

1. Restate the recommendation approved at the December 11, 2018 Council meeting to create a two-year bidding process for street paving to realize savings by (a) reducing by 50% City staff time devoted to bidding and contracting processes over each two year period and (b) benefitting from reduced pricing which may be available for larger contracts that offer greater economies of scale and reduce contractors' bidding and contracting costs.

2. Short-term referral to the City Manager to explore the possibility, feasibility, costs, and benefits of bidding in increments of up to 5 years to encompass entire 5-year paving plans, or other ideas to more rationally and cost-effectively align the paving plan with budget cycles and reduce costs associated with frequent bid cycles for relatively small contracts.

BACKGROUND

In November 2011, the City Auditor provided an analysis of the conditions of Berkeley's 216 miles of streets that showed widespread disrepair resulting from years of underfunding. The impact of the many years of underfunding is compounded by the exponential increase in cost to refurbish streets that have reached "at risk" or "failed" status.

The City of Berkeley's existing Street Rehabilitation and Repair Policy requires that a 5-year Street Rehabilitation Plan be reviewed each year and adopted formally by the City Council. After approval, the City releases bids for one year of paving projects, requiring City Staff and contractors to undertake the bidding process on a yearly basis.

At the December 11, 2018 City Council meeting, Council approved combining the 2018 and 2019 paving projects into the 2019 program after the City was unable to secure a cost effective paving contractor for 2018 in an extremely competitive market.

Permanently moving to a bi-annual or other multi-year bid process will reduce staff time spent on preparing, circulating, evaluating and awarding bids, as well as render Berkeley's projects more attractive to contractors in a very competitive market. It is

expected that larger contracts result in reduced per-mile costs due to better economies of scale and reduced contractor costs associated with yearly bidding processes.

During the December 2018 discussion, Public Works staff suggested that a two year bid process is not only feasible, but also logical as the City's budget and funding processes span two years. While this proposal is already being considered (having been referred by Council at the December 11, 2018 meeting), it is important for Council to reiterate that accelerating paving overall while reducing costs in all ways possible is a key citywide priority, and to include the consideration of longer multi-year bidding cycles to assess whether additional cost savings and integration into existing budget cycles can be achieved.

FINANCIAL IMPLICATIONS
The City is likely to realize long term savings by utilizing two-year or other multi-year bidding processes.

ENVIRONMENTAL SUSTAINABILITY
Improved PCI leads to better fuel efficiency and therefore less greenhouse gas emissions from vehicles.

CONTACT PERSON

Mayor Jesse Arreguín 510-981-7100
Councilmember Sophie Hahn 510-981-7150

Attachments:
1: Annotated Agenda, December 11 2018 Berkeley City Council Meeting, Item 15

Consent Calendar

13. Contract: Gallagher & Burk, Inc. for FY 2018 Measure M Street Rehabilitation Project
From: City Manager
Recommendation: Adopt a Resolution approving plans and specifications for the FY 2018 Measure M Street Rehabilitation Project, Specification No. 18-11179-C (Re-Issued); accepting the bid of Gallagher & Burk, Inc. as the lowest responsive and responsible bidder; and authorizing the City Manager to execute a contract and any amendments, extensions or other change orders until completion of the project in accordance with the approved plans and specifications in an amount not to exceed $3,863,909.
Financial Implications: Street Capital Improvement Program Fund - $3,863,909
Contact: Phillip Harrington, Public Works, 981-6300
Action: Adopted Resolution No. 68,716–N.S.

14. Letter of Support on Behalf of SB 3342 - Housing, Opportunity, Mobility, and Equity Act of 2018
From: Housing Advisory Commission
Recommendation: Direct the City Manager to send a letter of support on behalf of proposed SB 3342, referred to as the HOME Act.
Financial Implications: None
Contact: Amy Davidson, Commission Secretary, 981-5400
Action: Approved recommendation.

15. Public Works Commission Recommendation for the Five-Year Street Rehabilitation Plan
From: Public Works Commission
Recommendation: Adopt a Resolution that recommends approval of the Five-Year Street Rehabilitation Plan for FY2019 to FY2023 as proposed by Staff.
Financial Implications: See report
Contact: Nisha Patel, Commission Secretary, 981-6300
Action: Moved to Action Calendar. 8 speakers. M/S/C (Harrison/Droste) to adopt Resolution No. 68,717–N.S. that recommends approval of the Five-Year Street Rehabilitation Plan for FY2019 to FY2023 as proposed by Staff amended to include Milvia Street from Blake Street to Russell Street in FY2019. Provide direction to staff and request additional information from staff as follows:

- Review the Plan after two years
- Consult the Transportation Commission on the Plan
- Provide the Lifecycle analysis and the Bike Plan overlay analysis
- Consider a two-year bid process
- Annual report to Council on Measure M projects
- Report to Council on the funding sources for scheduled and completed paving projects

Vote: All Ayes.