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

Wednesday, October 7, 2020
2:30 PM

Committee Members:

Councilmembers Cheryl Davila, Rigel Robinson, and Kate Harrison
Alternate: Councilmember Sophie Hahn

PUBLIC ADVISORY: THIS MEETING WILL BE CONDUCTED EXCLUSIVELY THROUGH VIDEOCONFERENCE AND TELECONFERENCE

Pursuant to Section 3 of Executive Order N-29-20, issued by Governor Newsom on March 17, 2020, this meeting of the City Council Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee will be conducted exclusively through teleconference and Zoom videoconference. Please be advised that pursuant to the Executive Order, and to ensure the health and safety of the public by limiting human contact that could spread the COVID-19 virus, there will not be a physical meeting location available.

To access the meeting remotely using the internet: Join from a PC, Mac, iPad, iPhone, or Android device: Use URL https://us02web.zoom.us/j/88167316263. If you do not wish for your name to appear on the screen, then use the drop down menu and click on "rename" to rename yourself to be anonymous. To request to speak, use the “raise hand” icon on the screen.

To join by phone: Dial **1-669-900-9128** and Enter Meeting ID: **881 6731 6263.** If you wish to comment during the public comment portion of the agenda, press *9 and wait to be recognized by the Chair.

Written communications submitted by mail or e-mail to the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee by 5:00 p.m. the Friday before the Committee meeting will be distributed to the members of the Committee in advance of the meeting and retained as part of the official record. City offices are currently closed and cannot accept written communications in person.

AGENDA

Roll Call

Public Comment on Non-Agenda Matters

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes - September 16, 2020

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.

2. Referral Response: Ordinance Amending Berkeley Municipal Code Chapter 7.52, Reducing Tax Imposed for Qualifying Electrification, Energy Efficiency and Water Conservation Retrofits
From: City Manager
Referred: July 21, 2020
Due: January 4, 2021
Recommendation: 1. Delay adoption of the first reading of an ordinance amending the Berkeley Municipal Code (BMC) Chapter 7.52 to expand the Seismic Transfer Tax Rebate Program to include qualifying sustainability and resilience measures, and any associated budget requests, until FYE 2022 when more information on budget due to COVID-19 response and recovery is available; and
2. Refer to the City Manager the design of a companion Resilient Homes Equity Pilot Program that would provide funding for home retrofit improvements to low-income residents.
Financial Implications: See report
Contact: Jordan Klein, Planning and Development, (510) 981-7400

Committee Action Items

3. Evaluation and Recommended Updates to the Building Energy Savings Ordinance (BESO) *(Supplemental Material Received)*
From: City Manager
Referred: July 21, 2020
Due: January 4, 2021
Recommendation: Refer to City Manager to amend the Building Energy Saving Ordinance (BESO), Chapter 19.81.170 of the Berkeley Municipal Code, to align with building electrification goals, leverage upcoming rebates and incentives, and develop mandatory energy requirements to be phased in.
Financial Implications: See report
Contact: Jordan Klein, Planning and Development, (510) 981-7400

4. Bright Streets Initiative *(Supplemental Material Received)*
From: Councilmembers Hahn and Harrison
Referred: November 25, 2019
Due: October 31, 2020
Recommendation: 1. Refer to the City Manager to paint all crosswalks, midlines, bike lanes, and other street markings, clarify and/or improve traffic signage, and paint curbs along collector and arterial streets throughout the City of Berkeley, and within a three-block radius of all Berkeley public schools, to improve safety and support Vision Zero goals. Streets, signage, and curbs that have been redone in the past three years and remain in very good condition need not be repainted and/or replaced.
2. Such work to be completed prior to commencement of the 2020-21 Berkeley Public School Year.
Financial Implications: See report
Contact: Sophie Hahn, Councilmember, District 5, (510) 981-7150

Committee Action Items

5. Initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency *(Revised Material Received)*
From: Councilmember Davila (Author)
Referred: July 13, 2020
Due: December 27, 2020
Recommendation: Adopt a resolution to initiate a citywide, regional and international Just Transition to a Regenerative Economy to address the Climate Emergency, and taking the following actions: 1. The City of Berkeley recognizes sustainability is not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, and resource allocation to be socially and environmentally positive and will invest in a regenerative whole city infrastructure, policy, development and design process. 2. The City of Berkeley following the lead of Amsterdam and other cities will join in an attempt to embrace Doughnut Economics, which, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay Area bioregion. 3. The City of Berkeley will accelerate the transition to a zero-waste cradle to cradle, circular economy by a developing a series of ordinances ensuring only earth friendly products are sold within city limits by 2025. 4. All City of Berkeley commissions shall propose city policies, procedures and programs to enact a just transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction from Berkeley and Bay Area residents. 5. The City of Berkeley will create a city commission responsible for planning and implementing a Just Transition to a Regenerative Economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses. 6. The City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the Earth and people from further environmental degradation, social inequality, public health risks, and global warming and urges all neighboring agencies, statewide, national, and international, to do the same. 7. The City of Berkeley will create a regional and statewide collaborative to ensure the maximal climate mitigation and adaptation scenarios to begin as soon as possible and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a Just Transition plan to the Regenerative Economy here in the greater Bay Area through a regional Green New Deal. 8. The City of Berkeley calls on governments who have declared a climate emergency and who broadly recognize the immense challenge facing humanity to form a transnational task force to be sustained until 2050 to co-execute a shared transitional peace effort in moving their immediate societies and economies toward ethical and regenerative trajectories. 9. The City of Berkeley within the first 90 days will invite all the cities, counties, and institutions such as the UC system to form a regional and statewide task force to oversee a justice- oriented evidence- based transition to a regenerative economy to be sustained until 2050;

Committee Action Items

10. The City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary and local environmental and social boundaries, focuses on human and ecological flourishing, furthers a regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and fosters an immediate transition to avert climate catastrophe in the near and long term. 11. The City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts. 12. The City of Berkeley recognizes the importance of indigenous leadership in designing and implementing a Regenerative Economy in Berkeley, the greater Bay Area, and the world, and shall invite delegates from indigenous communities to all stages of the planning and implementation process.
Financial Implications: See report
Contact: Cheryl Davila, Councilmember, District 2, (510) 981-7120

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.

6. Adopt an Ordinance Adding a Chapter 11.62 to the Berkeley Municipal Code to Regulate Plastic Bags at Retail and Food Service Establishments
From: Councilmembers Harrison and Hahn
Referred: November 25, 2019
Due: December 17, 2020
Recommendation: Adopt an ordinance adding a Chapter 11.62 to the Berkeley Municipal Code to regulate plastic bags at retail and food service establishments.
Financial Implications: See report
Contact: Kate Harrison, Councilmember, District 4, (510) 981-7140

7. Prohibition on the Resale of Used Combustion Vehicles in 2040
From: Community Environmental Advisory Commission
Referred: March 30, 2020
Due: December 19, 2020
Recommendation: Review and refer to the City Attorney for finalization the attached ordinance prohibiting the resale of used, existing combustion-powered vehicles beginning in 2040.
Financial Implications: See report.
Contact: Viviana Garcia, Commission Secretary, (510) 981-7460

Unscheduled Items

8. Introduce an Ordinance terminating the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025 *(Revised Material Received)*
From: Councilmember Davila
Referred: November 18, 2019
Due: December 10, 2020
Recommendation: Adopt a resolution with the following actions:
1. Direct the City Attorney to prepare any draft ordinances to terminate the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025; this shall include the termination of purchasing these vehicles to support City fleets and, for the general public, a staged phase out such as cars over $28K by 2023, cars over $22K by 2024, and all cars by 2025, so as to actively create a used electric vehicle market for lower income customers that allows them to acquire electric vehicles at a cost equal to or below that of comparable gasoline, diesel, or natural gas vehicles.
2. Short term referral to the City Manager and/or designee(s) to report to the City Council in 90 days, in consultation with other City Departments with the following information: (A) Feasibility of terminating the sale of gasoline, diesel and natural gas passenger vehicles; (B) ways to promote and facilitate the sale of all-electric vehicles in the City, particularly among low income communities, including the provision of local tax incentives and rebates, as large as is necessary to cover any cost difference between an electric car and a comparable gas car; the simplification of building code requirements for chargers; and the establishment of charging stations and related infrastructure to support all-electric vehicles; (C) any “just transition” elements related to the above action, including the impact upon and opportunities for auto mechanics.
Financial Implications: See report
Contact: Cheryl Davila, Councilmember, District 2, (510) 981-7120

9. Prohibition on the Use of City Streets for Operating, Parking, or Idling Combustion Vehicles by 2045
From: Community Environmental Advisory Commission
Referred: March 30, 2020
Due: December 19, 2020
Recommendation: Review and refer to the City Attorney for finalization the attached ordinance prohibiting the use of City-owned streets for the operation, parking, or idling of combustion vehicles beginning in 2045, and establishing an offset-driven fee-based enforcement mechanism.
Financial Implications: See report
Contact: Viviana Garcia, Commission Secretary, (510) 981-7460

Unscheduled Items

10. Prohibition on the Sale of Gasoline, Diesel, and Other Carbon-Based Transportation Fuels by 2045
From: Community Environmental Advisory Commission
Referred: March 30, 2020
Due: December 19, 2020
Recommendation: Review and refer to the City Attorney for finalization the attached ordinance prohibiting the sale of gasoline, diesel, and other carbon-based transportation fuels effective January 1st, 2045.
Financial Implications: See report
Contact: Viviana Garcia, Commission Secretary, (510) 981-7460

11. Potential Bonding and Funding Opportunities for Improving the PCI of Residential Streets, and Creating a Paving Master Plan
Referred: January 21, 2020
Due: November 23, 2020
Recommendation: On January 21, 2020, the City Council referred the following language from the revised agenda material from Councilmember Harrison in the Supplemental Communications Packet 2, and as further revised by the Council, to the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee for consideration:
Refer to the Facilities, Infrastructure, Transportation, Environment, & Sustainability Committee to work with the Public Works Department and the Commission to explore potential bonding and funding opportunities for improving the PCI of residential streets, and creating a paving master plan.
Financial Implications:
Contact: Referred: January 21, 2020
Due: November 23, 2020

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

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COMMUNICATION ACCESS INFORMATION:
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.

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I hereby certify that the agenda for this meeting of the Standing Committee 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 October 1, 2020.

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.
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BERKELEY CITY COUNCIL FACILITIES, INFRASTRUCTURE, TRANSPORTATION, ENVIRONMENT & SUSTAINABILITY COMMITTEE
REGULAR MEETING
Wednesday, September 16, 2020
2:30 PM

Committee Members:

Councilmembers Cheryl Davila, Rigel Robinson, and Kate Harrison
Alternate: Councilmember Sophie Hahn

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Written communications submitted by mail or e-mail to the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee by 5:00 p.m. the Friday before the Committee meeting will be distributed to the members of the Committee in advance of the meeting and retained as part of the official record. City offices are currently closed and cannot accept written communications in person.

MINUTES

Roll Call: 2:32 pm. All present.

Public Comment on Non-Agenda Matters: 4 speakers.

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes - July 15, 2020

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

2. Traffic Circle Policy and Program Recommendations *(Supplemental Material Received)*
From: Traffic Circle Policy Task Force
Referred: November 12, 2019
Due: October 18, 2020
Recommendation: On November 12, 2019, the City Council referred the following language from the proposed Traffic Circle Policy to the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee for consideration:
"New trees proposed by traffic circle coordinators or volunteers will be approved by the City Forester, with a preference for natives and a focus on maximizing ecosystem services.
The Task Force recommends revisiting trunk size considerations every five years as the implications of climate change and autonomous vehicles become clearer. In the interim, large trunked trees such as redwoods will not be planted."
The original recommendation from the Traffic Circle Policy Task Force is as follows:
Adopt a Resolution to approve the Traffic Circle Policy as outlined in the report and refer to the traffic engineer for codification.
Integrate the Community Common Space Stewardship Program into the "Adopt a Spot Initiative," which the City Council approved on April 23, 2019 (Item #33), and request that the City Council refer it to the Traffic Circle Task Force, rather than the Parks and Public Works Commissions, for the purpose of development, outlining criteria and environmental benefits, program costs and staffing.
Refer additional traffic calming measures at Ellsworth for the intersections with Dawn Redwoods to the mid-year budget process and request mitigation funds from East Bay Municipal Utility District (EBMUD) due to the impact on these streets from their Wildcat Pipeline Project.
Refer to the City Manager:
1. Create the Community Common Space Stewardship Program as described in the report.
2. Refer the additional staff and material costs of this program to the budget process.
Financial Implications: See report

Action: 4 speakers. Discussion held. M/S/C (Harrison/Robinson) to send the item to Council with a positive recommendation, as submitted by staff, and as further revised by the committee to include:

1. That this policy be reviewed every five (5) years.
2. Tree standards will be refined overtime to meet the needs of the traffic circles.
3. If any trees are to be removed, the policy is to replace the tree with a more appropriate tree when possible.
4. If a tree is to be removed and it can be successfully replanted, it shall be.

Vote: All Ayes.

Committee Action Items

3. Evaluation and Recommended Updates to the Building Energy Savings Ordinance (BESO) *(Supplemental Material Received)*
From: City Manager
Referred: July 21, 2020
Due: January 4, 2021
Recommendation: Refer to City Manager to amend the Building Energy Saving Ordinance (BESO), Chapter 19.81.170 of the Berkeley Municipal Code, to align with building electrification goals, leverage upcoming rebates and incentives, and develop mandatory energy requirements to be phased in.
Financial Implications: See report
Contact: Jordan Klein, Planning and Development, (510) 981-7400

Action: 8 speakers. Discussion held. The item was continued to the next meeting.

4. Referral Response: Ordinance Amending Berkeley Municipal Code Chapter 7.52, Reducing Tax Imposed for Qualifying Electrification, Energy Efficiency and Water Conservation Retrofits
From: City Manager
Referred: July 21, 2020
Due: January 4, 2021
Recommendation: 1. Delay adoption of the first reading of an ordinance amending the Berkeley Municipal Code (BMC) Chapter 7.52 to expand the Seismic Transfer Tax Rebate Program to include qualifying sustainability and resilience measures, and any associated budget requests, until FYE 2022 when more information on budget due to COVID-19 response and recovery is available; and
2. Refer to the City Manager the design of a companion Resilient Homes Equity Pilot Program that would provide funding for home retrofit improvements to low-income residents.
Financial Implications: See report
Contact: Jordan Klein, Planning and Development, (510) 981-7400

Action: The item was continued to the next meeting under Unscheduled Items.

Committee Action Items

5. Introduce an Ordinance terminating the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025 *(Revised Material Received)*
From: Councilmember Davila
Referred: November 18, 2019
Due: December 10, 2020
Recommendation: Adopt a resolution with the following actions:
1. Direct the City Attorney to prepare any draft ordinances to terminate the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025; this shall include the termination of purchasing these vehicles to support City fleets and, for the general public, a staged phase out such as cars over $28K by 2023, cars over $22K by 2024, and all cars by 2025, so as to actively create a used electric vehicle market for lower income customers that allows them to acquire electric vehicles at a cost equal to or below that of comparable gasoline, diesel, or natural gas vehicles.
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Financial Implications: See report
Contact: Cheryl Davila, Councilmember, District 2, (510) 981-7120

Action: The item was continued to the next meeting under Unscheduled Items.

6. Prohibition on the Resale of Used Combustion Vehicles in 2040
From: Community Environmental Advisory Commission
Referred: March 30, 2020
Due: December 19, 2020
Recommendation: Review and refer to the City Attorney for finalization the attached ordinance prohibiting the resale of used, existing combustion-powered vehicles beginning in 2040.
Financial Implications: See report.
Contact: Viviana Garcia, Commission Secretary, (510) 981-7460

Action: The item was continued to the next meeting under Unscheduled Items.

Committee Action Items

7. Prohibition on the Use of City Streets for Operating, Parking, or Idling Combustion Vehicles by 2045
From: Community Environmental Advisory Commission
Referred: March 30, 2020
Due: December 19, 2020
Recommendation: Review and refer to the City Attorney for finalization the attached ordinance prohibiting the use of City-owned streets for the operation, parking, or idling of combustion vehicles beginning in 2045, and establishing an offset-driven fee-based enforcement mechanism.
Financial Implications: See report
Contact: Viviana Garcia, Commission Secretary, (510) 981-7460

Action: The item was continued to the next meeting under Unscheduled Items.

8. Prohibition on the Sale of Gasoline, Diesel, and Other Carbon-Based Transportation Fuels by 2045
From: Community Environmental Advisory Commission
Referred: March 30, 2020
Due: December 19, 2020
Recommendation: Review and refer to the City Attorney for finalization the attached ordinance prohibiting the sale of gasoline, diesel, and other carbon-based transportation fuels effective January 1st, 2045.
Financial Implications: See report
Contact: Viviana Garcia, Commission Secretary, (510) 981-7460

Action: The item was continued to the next meeting under Unscheduled Items.

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.

9. Bright Streets Initiative *(Supplemental Material Received)*
From: Councilmembers Hahn and Harrison
Referred: November 25, 2019
Due: December 17, 2020
Recommendation: 1. Refer to the City Manager to paint all crosswalks, midlines, bike lanes, and other street markings, clarify and/or improve traffic signage, and paint curbs along collector and arterial streets throughout the City of Berkeley, and within a three-block radius of all Berkeley public schools, to improve safety and support Vision Zero goals. Streets, signage, and curbs that have been redone in the past three years and remain in very good condition need not be repainted and/or replaced.
2. Such work to be completed prior to commencement of the 2020-21 Berkeley Public School Year.
Financial Implications: See report
Contact: Sophie Hahn, Councilmember, District 5, (510) 981-7150

Action: The item was continued to the next meeting under Committee Action Items.

10. Potential Bonding and Funding Opportunities for Improving the PCI of Residential Streets, and Creating a Paving Master Plan
Referred: January 21, 2020
Due: November 23, 2020
Recommendation: On January 21, 2020, the City Council referred the following language from the revised agenda material from Councilmember Harrison in the Supplemental Communications Packet 2, and as further revised by the Council, to the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee for consideration:
Refer to the Facilities, Infrastructure, Transportation, Environment, & Sustainability Committee to work with the Public Works Department and the Commission to explore potential bonding and funding opportunities for improving the PCI of residential streets, and creating a paving master plan.

Action: The item was continued to the next meeting under Unscheduled Items.

11. Adopt an Ordinance Adding a Chapter 11.62 to the Berkeley Municipal Code to Regulate Plastic Bags at Retail and Food Service Establishments
From: Councilmembers Harrison and Hahn
Referred: November 25, 2019
Due: December 17, 2020
Recommendation: Adopt an ordinance adding a Chapter 11.62 to the Berkeley Municipal Code to regulate plastic bags at retail and food service establishments.
Financial Implications: See report
Contact: Kate Harrison, Councilmember, District 4, (510) 981-7140

Action: The item was continued to the next meeting under Committee Action Items.

Unscheduled Items

12. Initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency
From: Councilmember Davila (Author)
Referred: July 13, 2020
Due: December 27, 2020
Recommendation: Adopt a resolution to initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency, and taking the following actions: 1. The City of Berkeley recognizes that attempting to be sustainable is not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, and resource allocation to be socially and environmentally positive and will invest in a regenerative whole city infrastructure, policy, development and design process. 2. The City of Berkeley embraces doughnut economics, which, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay area bioregion. 3. The City of Berkeley will accelerate the transition to a zero-waste cradle to cradle circular economy. 4. All City of Berkeley commissions shall propose city policies, procedures and programs to enact a just transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction of Berkeley and Bay Area residents. 5. The City of Berkeley will create a city commission responsible for planning and implementing a just transition to a regenerative economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses. 6. The City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, social inequality, public health risks, and global warming. 7. The City of Berkeley calls for a regional collaborative effort to begin as soon as possible and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a just transition plan to the regenerative economy here in the Greater Bay Area through a regional green new deal. 8. The City of Berkeley urges all neighboring governmental agencies (including local, state and federal) to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, public health risks, and global warming. 9. The City of Berkeley calls on governments who have declared a climate emergency and who broadly recognize the immense challenge facing humanity to join together in collaborative exchange and begin a shared transitional peace effort in moving their immediate societies and economies toward ethical and regenerative trajectories. 10. The City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary

Unscheduled Items

and local environmental and social boundaries, focuses on human and ecological flourishing, furthers a regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and achieves sustainable transition to avert climate catastrophe in the near and long term. 11. The City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts. 12. The City of Berkeley recognizes the importance of Indigenous leadership in designing and implementing a regenerative economy in Berkeley, the Greater Bay Area, and the World, and shall invite delegates from Indigenous communities to all stages of the planning and implementation process.
Financial Implications: See report
Contact: Cheryl Davila, Councilmember, District 2, (510) 981-7120

Action: The item was continued to the next meeting under Committee Action Items.

Items for Future Agendas

- **None**

Adjournment

Adjourned at 4:26 p.m.

I hereby certify that this is a true and correct record of the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee meeting held on September 16, 2020.

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Michael MacDonald, Assistant City Clerk

Office of the City Manager

02

CONSENT CALENDAR
July 21, 2020

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Timothy Burroughs, Director, Department of Planning & Development

Subject: Referral Response: Ordinance Amending Berkeley Municipal Code Chapter 7.52, Reducing Tax Imposed for Qualifying Electrification, Energy Efficiency and Water Conservation Retrofits

RECOMMENDATION

1. Delay adoption of the first reading of an ordinance amending the Berkeley Municipal Code (BMC) Chapter 7.52 to expand the Seismic Transfer Tax Rebate Program to include qualifying sustainability and resilience measures, and any associated budget requests, until FYE 2022 when more information on budget due to COVID-19 response and recovery is available; and

2. Refer to the City Manager the design of a companion Resilient Homes Equity Pilot Program that would provide funding for home retrofit improvements to low-income residents.

SUMMARY

On November 27, 2018, City Council adopted a referral sponsored by Councilmembers Harrison and Davila to expand the existing Seismic Transfer Tax Rebate Program to include qualifying electrification, energy efficiency and water conservation retrofits.[1] The Seismic Transfer Tax Rebate Program provides refunds for voluntary seismic upgrades to residential properties. Up to one-third of the base 1.5% transfer tax rate may be refunded, on a dollar-for-dollar basis, for voluntary seismic upgrades to residential property. Applicants have up to one year from the record of transfer to complete all seismic retrofit work, then apply for the rebate. The ordinance allows this deadline to be extended for good cause for up to one additional year.

This report and proposed actions are the result of in-depth analysis and input from stakeholders, including the Energy Commission and Disaster & Fire Safety Commission. The recommendations for updating the Transfer Tax Rebate program have General Fund budget implications for the City. Given challenges and uncertainties from COVID-19 response and recovery, staff now recommend that adoption of these

[1] See November 27, 2018 Council Referral:
https://www.cityofberkeley.info/Clerk/City_Council/2018/11_Nov/Documents/Item_24_Rev_Harrison.aspx

proposed changes be delayed. Staff will return to Council in one year, when more information on future budget constraints is available. Should Council approve the program changes in the future, staff would develop Administrative Regulations to define the qualifying measures and rebate application process.

The current Transfer Tax Rebate Program only benefits Berkeley residents who can afford to purchase a home in Berkeley, while low-income residents who often live in older homes most in need of improvements are excluded from this resource. Given that COVID-19 is exacerbating vulnerabilities of low income homeowners and renters, staff proposes development of a Resilient Homes Equity Pilot Program now, to complement a proposed future update to the Transfer Tax Rebate program.

FISCAL IMPACTS OF RECOMMENDATION

Resilience Transfer Tax Rebate Program

The current proposal of delaying program changes for one year has no fiscal impacts.

If these program changes are adopted in the future, there would be budget impacts. The current Seismic Transfer Tax Rebate Program reserves one-third of the base 1.5% transfer tax amount to be rebated from the General Fund. Based on residential property sales from 2014 to 2019, the average annual total net residential Transfer Tax (1.5%) was nearly $14 million,[2] and the eligible rebate amount was approximately $4.6 million. Funds not spent on rebates have remained in the General Fund.

As of the FY2018-2019 adopted budget, up to $12.5 million of the net Transfer Tax amount goes to the General Fund, including the one-third subset which can be rebated to homeowners as part of the Seismic Transfer Tax Rebate Program. Anything received by the City exceeding $12.5 million is to be used for Capital Improvement Projects.[3]

See Table 1 below for average transfers of residential, commercial, and mixed-use properties from 2014-2019.

[2] This amount does not include the additional 1.0% of Transfer Tax funds that is dedicated for Measure P.
[3] City of Berkeley, Fiscal Years 2018 & 2019 Adopted Biennial Budget: https://www.cityofberkeley.info/uploadedFiles/Manager/Budget/FY%202018-2019%20Adopted%20Budget%20Book.pdf

Table 1 – 2014-2019 Residential, Commercial + Mixed Use Property Transfers[4]

Fiscal Year:	# Residential Transfers	Total Residential 1.5% Transfer Tax Amount	Eligible Residential Rebate Amount	# Commercial + Mixed Use Transfers	Commercial + Mixed Use Transfer Tax Amount ($)	Potential Eligible Commercial + Mixed Use Rebate Amount	Total Potential Residential + Commercial + Mixed Use Rebate ($)
2014	945	$ 12,334,024	$ 4,111,341	69	$ 1,579,799	$ 526,600	$ 4,637,941
2015	886	$ 12,474,066	$ 4,158,022	71	$ 3,093,733	$ 1,031,244	$ 5,189,267
2016	874	$ 13,516,064	$ 4,505,355	64	$ 3,303,230	$ 1,101,077	$ 5,606,431
2017	710	$ 13,410,320	$ 4,470,107	61	$ 3,002,048	$ 1,000,683	$ 5,470,789
2018	793	$ 14,511,819	$ 4,837,273	79	$ 3,705,287	$ 1,235,096	$ 6,072,368
2019	863	*$ 17,577,210*	$ 5,859,070	*53*	*$ 2,519,843*	*$ 839,948*	*$ 6,699,018*
Average 2014-2019	***845.17***	***$ 13,970,584***	***$ 4,656,861***	***66.17***	***$ 2,867,323***	***$ 955,774***	***$ 5,612,636***

Resilient Homes Equity Pilot Program

Staff would design the program with existing capacity and return to Council with a full budget request, implementation strategy, and timelines.

CURRENT SITUATION AND ITS EFFECTS

On November 27, 2018, the City Council adopted a referral, sponsored by Councilmembers Harrison and Davila, to expand the existing Seismic Transfer Tax Rebate Program for qualifying electrification, energy efficiency and water conservation retrofits. The referral was intended to increase use of the program to advance the community's greenhouse gas reductions, address the urgency of the Climate Emergency Declaration, and increase the community's resilience. The referral asked staff to evaluate options for additional qualifying measures, evaluate how the program expansion should interact with the existing seismic program, and consider the framework for a just and equitable transition as set out in the Climate Emergency Declaration.

In response to the referral, staff conducted outreach over many months with staff from multiple City departments, the Energy Commission, the Disaster and Fire Safety Commission, as well as several technical experts and stakeholders. As developed through those efforts, staff developed proposed changes to amend BMC Chapter 7.52 to:

1. Add qualifying measures for the expanded Resilience Transfer Tax Rebate Program to include electrification, sustainability and resilience measures that require a building permit, in addition to the seismic measures already included in the program;

2. Expand the program to apply to all residential, commercial, and mixed-use buildings at time of property transfer, augmenting the current program which applies to only residential or mixed-use buildings with two or more dwelling units; and

[4] From City of Berkeley Finance Department.

3. Expand the deadline of the program so applicants have two years to apply for the rebate plus the opportunity to apply for a one-year extension, instead of the current program's one year deadline with a one-year extension.

Staff is recommending delaying approval of these changes, which would have potentially significant impacts to the General Fund. Staff will return next year and make another recommendation based on the budget situation at that time. If these changes are approved, staff would develop Administrative Regulations including qualifying measures, an implementation strategy, and timelines. In order to develop and administer the proposed changes, the next recommendation would include additional staff capacity to support the increased application review and processing.

Proposal for Resilient Homes Equity Pilot Program

Communities of color and low-income communities are not only most impacted by financial disparities, they are also the frontline communities most impacted by climate change and other disasters. The City of Berkeley values equity and strives to be a leader in developing creative approaches for addressing the affordability and housing crises the City faces, leading to displacement of people of color and low-income community members. The City also has ambitious goals to combat climate change and to become a more resilient City. Further, in the referral, Council urged staff to consider "the framework for a just and equitable transition" as laid out in the Climate Emergency.[5] These goals can all be aligned together to achieve multiple benefits in a new Resilient Homes Equity Pilot Program proposed by City staff.

An equity analysis of the impacts of the Transfer Tax Rebate Program considers who benefits, who is burdened and who is excluded. A transfer tax rebate program only benefits Berkeley residents who can afford to purchase a home, currently selling for an average of $1.27 million[6]. Low-income residents often live in older homes that are most in need of home improvements for safety, health, comfort, efficiency, and resilience. Attachment 2 is an Equity White Paper written by Noel Simpkin, a UC Berkeley Masters of Planning graduate student. This paper applies an equity lens to the Seismic Retrofit Refund Program and recommends developing an equity pilot program that targets Berkeley's underserved residents.

A concurrent Resilient Homes Equity Pilot Program would provide direct funding to low-income residents to improve their homes as a parallel program to the proposed expanded Resilience Transfer Tax Rebate, for home improvements. This equity pilot program would aim to provide a valuable benefit to low-income residents, long-term homeowners with limited incomes, and renters, who are not able to access the existing

[5] City of Berkeley, November 27, 2018 Council Referral: https://www.cityofberkeley.info/Clerk/City_Council/2018/11_Nov/Documents/Item_24_Rev_Harrison.aspx
[6] Zillow, "Berkeley Home Prices & Values": https://www.zillow.com/berkeley-ca/home-values/. Last accessed 3/5/2020.

Seismic or future Resilience Transfer Tax Rebate Program. This program could support homeowners' ability to remain in their homes, improve occupant health and increase resilience in an aging building stock. An equity pilot program would create a replicable example of how City programs can operationalize equity in residential buildings and assure equitable distribution of City resources.

This program, once developed and approved, may provide additional funding and/or free resources for homeowners and leverage work in existing programs that benefit low income residents and homeowners. Staff would design the program in collaboration with community stakeholders to ensure that it will meet the needs of frontline communities such as low-income communities, communities of color, and those most affected by the impacts of climate change. If approved by Council, staff will:

1. Design the program in collaboration with community stakeholders;
2. Develop a detailed budget;
3. Identify potential funding sources for the program;
4. Determine necessary staffing for program administration and implementation;
5. Prepare an implementation strategy including timelines; and
6. Return to Council for approval of the budget and implementation of the program.

This equity pilot program concept was discussed with and received support from the Berkeley Energy Commission, Disaster & Fire Safety Commission, and other stakeholders.

Related Initiatives

Staff is concurrently advancing other programs and initiatives which may be directly impacted by an expansion of the Resilience Transfer Tax Rebate Program:

- *Building Energy Savings Ordinance (BESO)*[7]*:* The BESO program has just completed its evaluation, and will be updated to better align with the City's priorities of building electrification and resilience. The proposed update to BESO would prioritize electrification and provide recommendations at time of listing that would align with the transfer tax rebate eligible measures. This change, along with possible future mandatory requirements, has the potential to increase Transfer Tax Rebate Program participation.

- *Existing Building Electrification Strategy*: In April 24, 2018, Council requested the development of "policies to incentivize energy efficiency and electrification, in support of Climate Action Plan (CAP) goals" and referred $50,000 to the budget process to fund the Existing Building Efficiency Strategy. Staff is working with a team of experts to identify how Berkeley can electrify its existing buildings as soon as

[7] BESO requires building owners and homeowners to complete and publicly report comprehensive energy assessments to uncover energy saving opportunities. More information at: https://www.cityofberkeley.info/BESO/.

possible. This report will include equitable strategies, policies, and programs that will help Berkeley achieve its goal of becoming a fossil fuel-free City, and will include specific building measures that can be supported by the proposed Resilience Transfer Tax Rebate Program and Resilient Homes Equity Pilot Project.

- *Automatic Gas Shutoff Valve Referral:* Another Council referral asked the Disaster & Fire Safety Commission to consider an ordinance amending BMC 19.34.040 to expand requirements for automatic natural gas shut-off valves or excess flow valves. The referral would expand use of such devices 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. It also asks the Commission to consider other triggers as appropriate. Installation of an automatic gas shutoff valve has been included as a qualifying measure under the proposed Resilience Transfer Tax Rebate Program.

Amending the BMC to update the Resilience Transfer Tax Rebate Program as proposed and approving the development of a Resilient Homes Equity Pilot Project would advance the City Strategic Plan goal to be a global leader in addressing climate change, advancing environmental justice, and protecting the environment. It also advances the following goals:

- Create affordable housing and housing support service for our most vulnerable community members.
- Create a resilient, safe, connected, and prepared city.
- Champion and demonstrate social and racial equity.

BACKGROUND

Existing Seismic Transfer Tax Rebate Program

In 1991 the City created the Seismic Retrofit Refund Program which provides refunds for voluntary seismic upgrades to residential properties. Up to one-third of the base 1.5% transfer tax rate may be refunded on a dollar-for-dollar basis, for all expenses incurred on or after October 17, 1989 for voluntary seismic upgrades to residential property. This program applies to structures that are used exclusively for residential purposes, or any mixed-use structures that contains two or more dwelling units. Applicants have up to one year from the recordation of transfer to complete all seismic retrofit work, then apply for the rebate. The ordinance allows this deadline to be extended for good cause for up to one additional year.

Since July 2002, the City has distributed over $12 million to homeowners through the Seismic Transfer Tax Rebate Program, which reduces the real estate transfer tax to

building owners who perform seismic safety work.[8] As shown in the table below, between 2014-2019 an average of 13% of homeowners took advantage of the program.

Table 2 - Seismic Transfer Tax Rebates, 2014-2019

Fiscal Year:	# Residential Transfers	Total # Seismic Transfer Tax Rebates	Total Seismic Rebate Amount Spent ($)	Eligible Residential Rebate Amount	% Seismic Rebate Uptake (#)	% Seismic Rebate Amount Spent	Total Residential 1.5% Transfer Tax Amount
2014	945	171	$ 823,352	$ 4,111,341	18%	20%	$ 12,334,024
2015	886	140	$ 781,447	$ 4,158,022	16%	19%	$ 12,474,066
2016	874	142	$ 826,994	$ 4,505,355	16%	18%	$ 13,516,064
2017	710	77	$ 518,058	$ 4,470,107	11%	12%	$ 13,410,320
2018	793	94	$ 676,042	$ 4,837,273	12%	14%	$ 14,511,819
2019	863	63	$ 427,581	$ 5,859,070	7%	7%	$ 17,577,210
Average 2014-2019	***845.17***	***114.5***	***$ 675,579***	***$ 4,656,861***	***13%***	***15%***	***$ 13,970,584***

ENVIRONMENTAL SUSTAINABILITY

Amending the Resilience Transfer Tax Rebate Program would advance the City's ambitious climate action goals, by incentivizing energy efficiency, electrification, and other resilience improvements in Berkeley's buildings.

Developing a Resilient Homes Equity Pilot Program would extend the City's sustainability efforts further by providing these benefits to more buildings, serving a broader and more diverse set of Berkeley residents than would otherwise have access to the Resilience Transfer Tax Rebate Program.

RATIONALE FOR RECOMMENDATION

Given the need to address COVID-19 response and recovery, and the associated budgetary impacts, staff recommends that Council delay approving the proposed changes to the B.M.C. Chapter 7.52. Staff will return next year for Council to consider approval at that time.

In the future, expanding the current Transfer Tax Rebate Program would encourage and incentivize sustainability and resilience upgrades in homes.

Developing the Resilient Homes Equity Pilot Program is aligned with the City's Strategic Plan Goal to champion and demonstrate social and racial equity, and is aligned with the City's Resilience Strategy goal to advance racial equity. This program would aim to serve as an anti-displacement strategy for low-income homeowners as well as to incorporate equity into existing City policies. This could serve as a pilot equity pilot program that could be replicated and scaled.

[8] City of Berkeley 2019 Local Hazard Mitigation Plan, Summary-11: https://www.cityofberkeley.info/uploadedFiles/Fire/Level_3_-_General/City%20of%20Berkeley%202019%20LHMP%20-%20FINAL%2012-10-19%20-%20REDUCED%20SIZE.pdf

ALTERNATIVE ACTIONS CONSIDERED

Rather than delaying approval of this proposal, Council could consider adopting the proposed changes to the BMC Chapter 7.52 at this time. This would provide a benefit to home buyers sooner, but would have ongoing budget impacts.

Whenever Council does consider adopting the proposed changes to the BMC Chapter 7.52, other potential alternative actions for this proposal include:

- **Qualifying Measures:** Council could consider expanding the qualifying measures to include work that does not require a building permit. This would provide additional options and flexibility to the building owner, but would require design, development, and implementation of a new process to validate the measures, plus additional ongoing staff resources, because it would be staff time-intensive to verify completion of qualifying work.

- **Building Types:**
  - Council could continue to limit the program to residential and mixed-use buildings with two or more dwelling units. This approach would not generate as significant greenhouse gas emissions reductions, electrification, or resilience improvements in buildings.
  - Council could consider including industrial building types, for which sufficient information was not available for analysis in this report.

- **Application Deadline:** Council could keep the current program timeline as is, at one year plus a one year extension, or it could further extend timelines to provide even greater flexibility to applicants.

Resilient Homes Equity Pilot Program: Council could reject the proposal for a Resilient Homes Equity Pilot Program. Eliminating this program would mean no new benefits would be provided to low income residents, and would have no financial impact on the current budget.

CONTACT PERSON

Billi Romain, Sustainability Manager, Office of Energy and Sustainable Development, Planning & Development Department, 510-981-7432.
Katie Van Dyke, Climate Action Program Manager, 510-981-7403.

Attachments:

1. Draft Ordinance language to expand existing Seismic Transfer Tax Rebate Program for possible future action
2. Equity White Paper
3. Potential list of qualifying measures for consideration in Administrative Regulations
4. Original Referral Report from November 27, 2018

ATTACHMENT 1

ORDINANCE NO. XXXX-N.S.

AMENDMENTS TO THE BERKELEY MUNICIPAL CODE TO EXPAND THE TRANSFER TAX REBATE PROGRAM FOR RESILIENCE MEASURES

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

Section 1. That Berkeley Municipal Code Chapter 7.52.060 is amended to read as follows:

7.52.060 Exceptions.

K. 1. Up to one-third of the tax imposed by this chapter shall be reduced, on a dollar for dollar basis, for all expenses incurred on or after October 17, 1989 to perform a "resilience ~~seismically retrofit~~retrofit" on ~~either~~ any structure which is used ~~exclusively~~ for residential, mixed-use, or commercial purposes~~, or any mixed use structure which contains two or more dwelling units~~.

2. The term "resilience ~~seismically~~ retrofit" within the meaning of this chapter means any of the following:

a. That work which is needed and directly related to make the structure capable of withstanding lateral loads equivalent to the force levels defined by Chapter 23 of the 1976 Uniform Building Code;

b. Replacement or repair of foundations; replacement or repair of rotted mud sills; bracing of basement or pony walls; bolting of mud sills to standard foundations; installation of shear walls; anchoring of water heaters; and/or securing of chimneys, stacks or water heaters;

c. Corrective work on buildings which fit the criteria in subsection K.1, which are listed on the City of Berkeley inventory of potentially

hazardous, unreinforced masonry buildings when such work is necessary to meet City standards or requirements applicable to such buildings;

d. Any other work found by the building official to substantially increase the capability of those structures, specified in subsection K.1, to withstand destruction or damage in the event of an earthquake.

e. Any other work as defined in the list of qualifying measures for the Resilience Transfer Tax Rebate Program Administrative Regulations, including but not limited to measures that provide the following types of benefits: safety, health, electrification, efficiency, or other resilience measures.

3. The work to perform resilience ~~seismically~~ retrofits on structures as provided herein shall be completed either prior to the transfer of property or as provided in subsection K.4.

4. If the work to perform resilience ~~seismically~~ retrofits on the structures provided for herein is to be performed after the transfer of property which is subject to the tax imposed by this chapter, upon completion of such work and certification by the building official as to the amount of the expenses of such work the City Manager or his/her designee may refund such expenses not to exceed one-third of the base 1.5% transfer tax imposed to the parties to the sale in accordance with the terms of such sale. Any remaining tax shall be retained by the City.

5. From the date of the recordation of the transfer document, the applicant shall have ~~one~~ two years to complete all ~~seismic~~ resilience retrofit work and submit a resilience ~~seismic~~ retrofit verification application to ~~the codes and inspection division of~~ the City of Berkeley. If the work is not completed at the end of ~~one~~ two years, that portion which has been completed may be credited to the applicant upon submission of a resilience ~~seismic~~ retrofit

verification application and substantiating documentation, as required by the ~~codes and inspections division of the~~ City of Berkeley, showing the dollar amount of work completed up to that date. All other monies remaining in escrow will be returned to the City of Berkeley upon written request by the Finance Department.

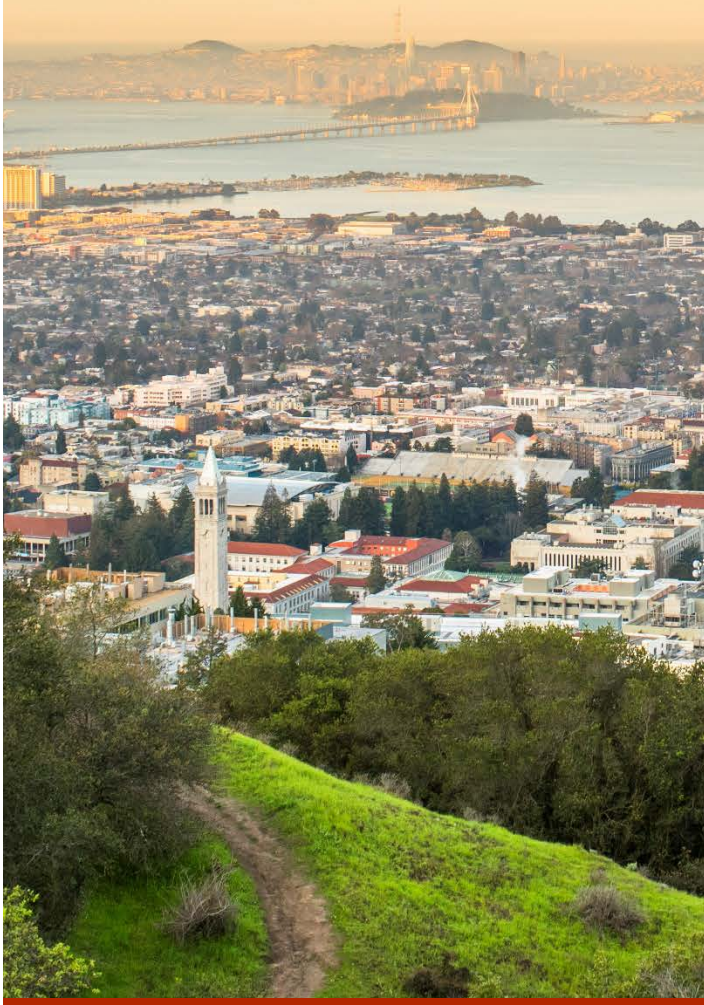
6. Within the ~~one~~two-year period established by paragraph 5, an applicant may request, and the City Manager may approve, an extension of up to one year. The City Manager or his/her designee may grant such an extension only for good cause. The decision of the City Manager or his/her designee shall be entirely within his or her discretion and shall be final.

a. "Good cause" includes (i) the inability of the applicant, after a prompt and diligent search to find and retain the services of an architect, engineer, contractor or other service provider whose services are necessary for the ~~seismic~~ resilience retrofit work; (ii) unforeseen and unforeseeable circumstances such as a significant change in the scope of the ~~seismic~~ resilience retrofit work due to circumstances in the field which could not reasonably have been known earlier; and (iii) serious illness or other extraordinary and unforeseeable circumstances that prevented the timely commencement or completion of the ~~seismic~~resilience retrofit work.

b. "Good cause" does not include (i) ignorance of the applicable City ordinances or regulations concerning the ~~seismic~~ resilience retrofit rebate provided in this chapter or state or local laws relating to the standards with which ~~seismic~~resilience retrofit work must comply; or (ii) any delays which were within the control or responsibility of the applicant. (Ord. 6971-NS § 1, 2007: Ord. 6741-NS § 1, 2003: Ord 6539-NS § 1, 2000: Ord. 6262-NS § 1, 1994: Ord. 6146-NS §§ 1, 2, 1992: Ord. 6072-NS § 2, 1991: Ord. 6069-NS § 1, 1991: Ord. 5061-NS § 5, 1978)

RESILIENCE FOR ALL

Applying an Equity Lens to Berkeley's Seismic Transfer Tax Rebate Program



MARCH 2020

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Contents

I. Executive Summary

The City of Berkeley (City) has long had a reputation for tolerance and inclusiveness, and yet social and racial inequity remains a significant challenge.[1] In its 2018-2019 Strategic Plan, the City identified a goal to "champion and demonstrate social and racial equity" and has prioritized integrating equity considerations throughout City operations and services.[2] To support this work, the City developed a Racial Equity Lens Toolkit (Toolkit) to assess city policies, plans, programs, and budgets in order to identify biases and help ensure equitable access to opportunities for all community members. Incorporating equity is particularly important in City programs aimed at increasing resilience for two reasons: without careful and deliberate planning, resilience strategies can actually exacerbate inequalities,[3] and true resilience can only be achieved when physical challenges as well as social challenges are addressed.[4]

The City's current Seismic Transfer Tax Rebate Program (Program) offers an example of a resilience strategy that addresses physical vulnerabilities but fails to advance social and racial equity. The current Program allows a portion of the City's transfer tax to be refunded to residential property owners for seismic upgrades, thus incentivizing homeowners who recently purchased a home to make important safety improvements. However when analyzing the Program through an equity lens it becomes clear that the Program is not reaching underserved members of the community, despite the fact that low-income and minority communities are more vulnerable to natural disasters and the impacts of climate change.[5] The current median sale price for a single-family home in Berkeley is over $1.2 million, which suggests that many recent homebuyers in Berkeley are economically advantaged.[6] In addition, 75 percent of the City's homeowners are white, and income disparities in the region demonstrate the challenge people of color face to purchase a home in Berkeley.[7]

In 2018, Berkeley City Council declared a Climate Emergency and established a goal of becoming a Fossil Fuel Free city. That same year, Council passed a referral to the City Manager and Office of Energy and Sustainable Development to expand the existing Seismic Transfer Tax Rebate Program in an effort to accelerate the transition toward more sustainable buildings. The referral identified the need for expanding the Program in order to reduce greenhouse gas (GHG) emissions, address the urgency of the Climate Emergency Declaration, and increase the City's resilience. In response, staff is providing recommendations to Council to expand the Program to include specific sustainability and resilience upgrades, as well as to establish a Resilient Homes Equity Pilot Program (Equity Pilot) that would provide similar home-improvement benefits to frontline communities. A new, equity-centered program that parallels the existing Program can help the City more quickly achieve its Fossil Fuel Free

[1] *City of Berkeley Resilience Strategy 2016*
[2] *City of Berkeley Strategic Plan 2018*
[3] *Anguelovski 2016*
[4] *100 Resilient Cities 2019*
[5] *City of Berkeley Resilience Strategy 2016*
[6] *Zillow 2020*
[7] *ACS 2017 5-Year Estimates; Table DP05, Universe: Total Population; and Table B25003H, Universe: Occupied housing units with a householder who is White alone, not Hispanic or Latino.*

goal, while benefitting low-income residents, long-term homeowners with limited incomes, and renters, who are not able to access the current Program.

This paper analyzes the current Seismic Transfer Tax Rebate Program through an equity lens, and aims to demonstrate the need for a more inclusive approach to increasing Berkeley's resilience. In addition, it recommends Berkeley City Council take the following actions to build both physical and social resilience:

1. Approve the development of a Resilient Homes Equity Pilot Program that leverages the City's Racial Equity Lens Toolkit in collaboration with community organizations and stakeholders.
2. Confirm a commitment to dedicate additional future funding to implement the Equity Pilot, with the exact annual amount to be determined during the program design phase.

An Equity Pilot offers many potential benefits, including: increased safety, improved health outcomes, reduction in GHG emissions, and it enables a Just Transition. It is also an opportunity to operationalize the City's Toolkit, and learnings can inform how other City programs and policies can incorporate equity and assure equitable distribution of City resources. Through the Equity Pilot, the City will be better positioned to achieve its goals of demonstrating social equity and becoming Fossil Fuel Free, while building a safer, healthier, more sustainable, and more resilient community.

II. Introduction

The City's Resilience Strategy, released in 2016, prioritizes both physical and social resilience: through a combination of long-term goals and short-term actions, the strategy aims to build the capacity of residents, institutions, and businesses to manage physical challenges, such as earthquakes and sea level rise, as well as social challenges, including racial inequity.[8] The City reaffirmed this holistic approach more recently in its 2018-2019 Strategic Plan, which articulates a goal to "create a resilient, safe, connected and prepared city" as well as a "responsibility to advance social and racial equity."[9] In order to make progress in these areas, City policies and programs must be designed to enable *all* residents to participate in, contribute to, and benefit from building Berkeley's resilience – especially historically underserved residents. There is an opportunity to make meaningful progress toward achieving these goals while prioritizing those most in need by examining the City's Seismic Transfer Tax Rebate Program, historically referred to as the Seismic Retrofit Rebate Program, through an equity lens. The current Program allows a portion of the City's transfer tax to be refunded to residential property owners for seismic upgrades. This program incentivizes homeowners who recently purchased a home to make important safety improvements and creates a more resilient housing stock. However, because the median price to purchase a home in Berkeley is currently over $1.2 million,[10] the Program is primarily supporting higher-income households and fails to reach low-income or long-term members of the community.

[8] *City of Berkeley Resilience Strategy 2016*
[9] *City of Berkeley Strategic Plan 2018*
[10] *Zillow 2020*

"We have a responsibility to advance social and racial equity."

- City of Berkeley 2018-2019 Strategic Plan

In November 2018 Berkeley City Council passed a referral to the City Manager and the Office of Energy and Sustainable Development to expand the existing Program to include subsidies beyond seismic retrofit and potentially include qualifying electrification, energy efficiency, and water conservation retrofits. In addition, Council urged staff to consider "the framework for a just and equitable transition" as laid out in the Climate Emergency..[11] In response, staff has conducted an analysis with stakeholder input.[12] and is providing recommendations to Council to expand the Program to include specific sustainability and resilience upgrades, as well as to establish a Resilient Homes Equity Pilot Program that would provide similar home-improvement benefits to frontline communities. An Equity Pilot, that parallels the existing Program, can improve physical resilience and advance equity by enabling underserved residents to improve their physical environments – making them safer, more comfortable, more sustainable, and less susceptible to disasters and climate change (more on potential impact in Section VII). The following sections describe how an Equity Pilot aims to address the impacts of harmful racist policies that favor high-income, white homeowners while furthering the City's goals of resilience and equity.

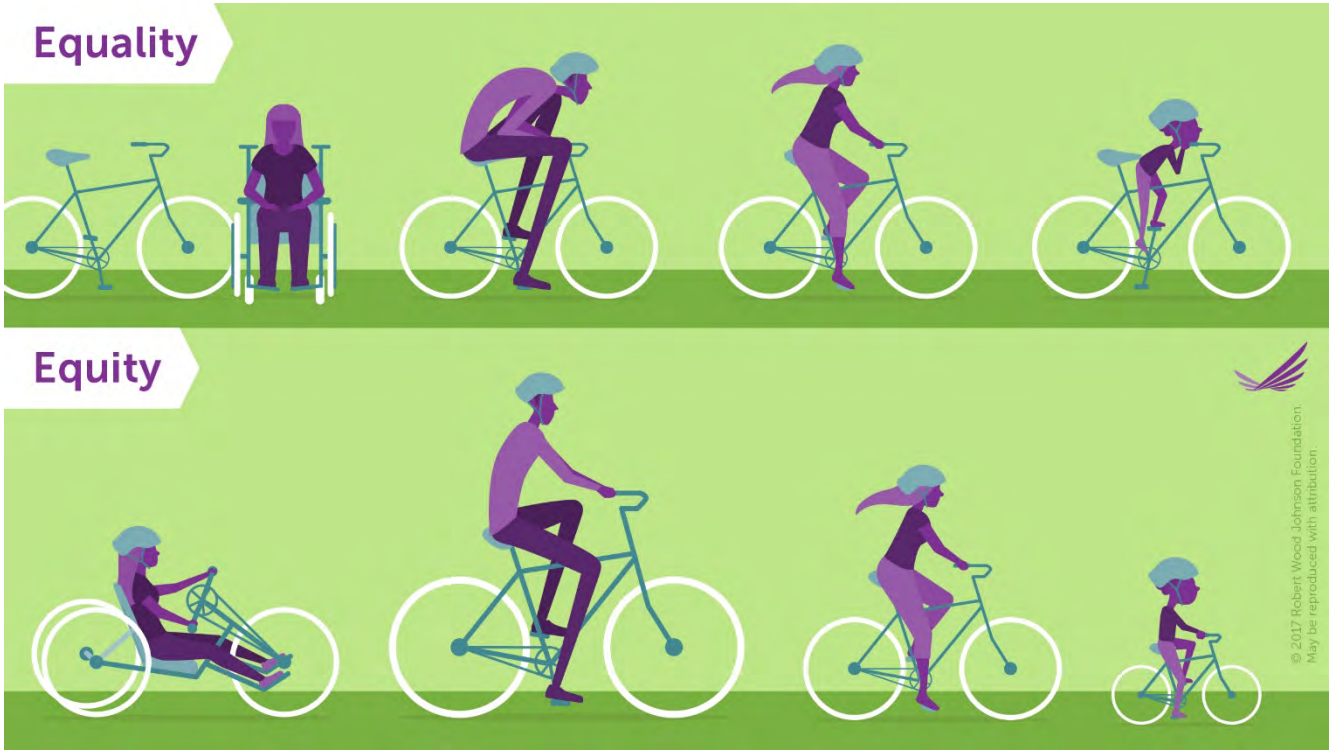
III. Equity Principles & Frameworks

Income inequality and health disparities are unfortunate realities in Berkeley: white families earn roughly three times more than African American families, and African American residents experience higher rates of hospitalization due to high blood pressure, stroke, asthma, and diabetes compared to other groups..[13] Improving these and other outcomes requires the City and its partners to address the "underlying social, economic, and environmental inequities that perpetuate them.".[14] However, addressing these inequities is rarely simple or straightforward and without intentional, strategic planning even well-intentioned efforts can reinforce injustices. When discussing equity principles and frameworks, it's important to first define what is meant by "equity". Equity is focused on giving communities what they need to thrive, while equality is about treating everyone the same (see Figure 1).

Equity frameworks are a valuable tool for governments, community development practitioners, and others to design and evaluate equitable policies and programs. By identifying who will benefit from or be burdened by decisions and potential unintended consequences of an intervention, equity frameworks help decision-makers mitigate negative effects and implement solutions that emphasize *equity* instead of *equality*..[15] In addition, it's important to clearly identify the 'who' when assessing

[11] *City of Berkeley Short-Term Referral Item 24, Nov. 27, 2018*
[12] *Including the Energy Commission, Disaster & Fire Safety Commission, as well as other internal and external stakeholders*
[13] *City of Berkeley Health Status Report 2018*
[14] *Ibid.*
[15] *GARE 2016*

Figure 1: Equity is focused on giving communities what they need to thrive, while equality is about treating everyone the same



Source: Robert Wood Johnson Foundation 2017

who may benefit or be burdened by interventions, and use the appropriate language to describe this group. There are a variety of terms that can describe potential target groups, such as frontline, underserved, vulnerable, low-income, and marginalized. These terms are often used interchangeably in development programs, despite the fact that they each have different definitions. According to The Greenlining Institute, "in conversations about social equity, terms such as underserved, vulnerable, low-income, disadvantaged, or environmental justice community are often interchanged but can potentially have different meaning depending the context."[16] As a result, it's important when designing an equitable program to clearly identify and define the target communities it aims to impact. In addition to providing clarity on specific target populations, terms are important because words can "promote compassion, empowerment, inclusiveness and equity."[17] For example, the term 'vulnerable' can describe a population group that is socioeconomically disadvantaged, but it can also be a term that communities choose not to identify with because it can feel disempowering. For the purposes of this paper, the terms 'underserved' and 'frontline' are used interchangeably, and refers to "communities that are already facing environmental, health and socioeconomic inequities, and that are disproportionately impacted by climate change" as well as disasters.[18]

The following is a set of equity frameworks the City has engaged with and/or implemented in various planning processes and projects in recent years. In addition, principles from each framework presented

[16] *The Greenlining Institute 2019*
[17] *National Collaborating Centre for Determinants of Health 2013*
[18] *The Greenlining Institute 2019*

below have helped to inform this analysis of the current Seismic Transfer Tax Rebate Program through an equity lens, and may be further leveraged in the development of the Equity Pilot.

1 | Community-Driven Engagement

Engaging communities is a critical part of developing equitable programs, however in order to be effective involving community members must be done in an authentic, strategic manner. Staff may use the following Continuum of Community Engagement as a way to strengthen its approach to creating a collaborative planning process (see Figure 2). Developed by the Urban Sustainability Directors Network, this continuum demonstrates increasing levels of engagement and partnership from left to right. The USC Program for Environmental and Regional Equity as well as The Greenlining Institute – organizations committed to racial and economic justice – advocate for program development that creates "authentic partnerships that center the perspectives of vulnerable communities, support community-based participation and power, and result in shared decision-making"..[19] The California Public Utilities Commission (CPUC) recently leveraged principles of joint decision-making in its San Joaquin Valley Disadvantaged Communities Pilot Project, which brings clean, affordable energy options to frontline communities. The project aims to empower communities who rely on propane or wood-burning appliances for heating and cooking to choose an energy solution that worked best for

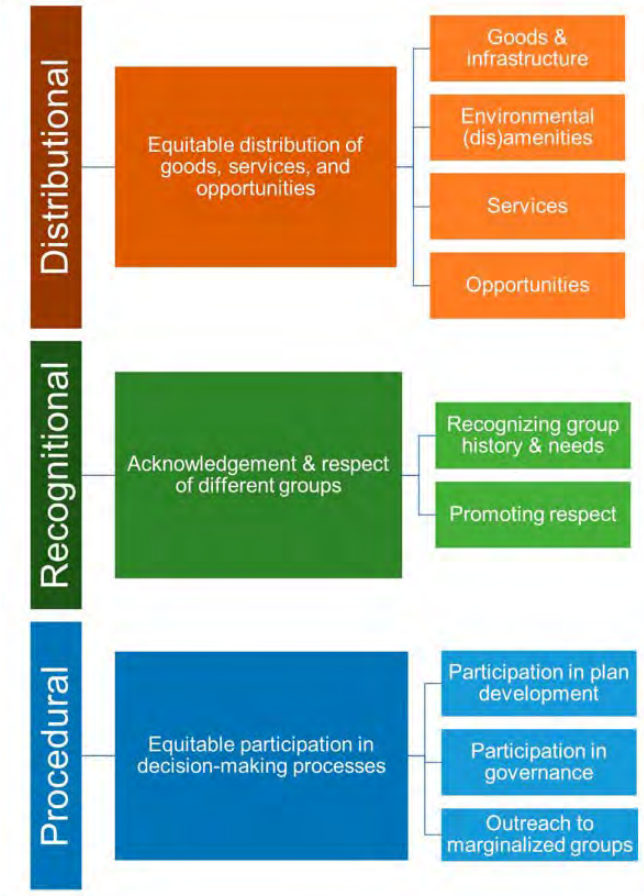
Figure 2: Continuum of Community Engagement

Inform	Consult	Involve	Shared Leadership	Community-Driven
Local government initiates an effort, coordinates with departments, and uses a variety of channels to inform the community to take action	Local government gathers information from the community to inform local government-led interventions	Local government engages community members to shape government priorities and plans	Community and local government share in decision-making to co-create solutions together	Community initiates and directs strategy and action with participation and technical assistance from local government
Characteristics of Engagement				
- Primarily one-way channel of communication - One interaction - Term-limited to project - Addresses immediate need of local government	- Primarily one-way channel of communication - One to multiple interactions - Short to medium-term - Shapes and informs local government programs	- Two-way channel of communication - Multiple interactions - Medium to long-term - Advancement of solutions to complex problems	- Two-way channel of communication - Multiple interactions - Medium to long-term - Advancement of solutions to complex problems	- Two-way channel of communication - Multiple interactions - Medium to long-term - Advancement of solutions to complex problems
Strategies				
Media releases, brochures, pamphlets, outreach to population groups, translated information, new and social media	Focus groups, interviews, community surveys, public hearings, public comment periods	Forums, advisory boards, stakeholder involvement, coalitions, policy development and advocacy, including legislative briefings, and testimony, workshops, community-wide events	Co-led community meetings, advisory boards, coalitions, and partnerships, policy development and advocacy, including legislative briefings and testimony	Community-led planning efforts, community-hosted forums, collaborative partnerships, coalitions, policy development and advocacy including legislative briefings and testimony

Source: Urban Sustainability Directors Network 2017 (Adapted from King County, Washington and IAP2)

[19] *The Greenlining Institute 2019*

Figure 3: Tripartite approach to equity in resilience planning



Source: Meerow et al. 2019

them. Ten out of the 11 pilot communities will receive cleaner energy through electrification, and one community will implement a joint gas and electrification approach.[20] This project demonstrates "community members can decide the best ways to overcome the challenges they see".[21] and serves as a model for community decision-making.

2 | Targeted Universalism

Targeted Universalism, a framework developed by the Othering & Belonging Institute at UC Berkeley, promotes establishing a universal goal with corresponding, specific strategies that target different groups to achieve that goal. This approach focuses on advancing all people toward the same goal through diverse implementation strategies that account for how different groups "are situated within structures, culture, and across geographies."[22] The City is incorporating a Targeted Universalism approach in its Pathway to Clean Energy Buildings work to ensure that proposed programs and policies benefit all communities.

3 | Tripartite Approach to Equity

In 2014 the City of Berkeley was one of the first 32 cities selected by the Rockefeller Foundation to participate in 100 Resilient Cities (100RC), an initiative aimed at building community resilience to face social, economic, and physical challenges.[23] Last year, researchers at Arizona State University and the University of Toronto released a study analyzing the goals, priorities, and strategies of the 100RC initiative, and developed a tripartite framework of equity that includes distributional, recognitional, and procedural dimensions (see Figure 3). In their analysis, researchers found that many cities that participated in the 100RC program emphasized the distributional aspect of equity, but focused less on the recognitional and procedural dimensions. They go on to advocate for resilience strategies that "explicitly consider resilience for whom, while at the same time promoting the equitable distribution of social and material goods, meaningful participation and engagement in decision-making processes, and acknowledgment of social, cultural, and political differences."[24]

[20] *The Greenlining Institute 2019*
[21] *Ibid.*
[22] *Powell et al. 2019*
[23] *City of Berkeley Agenda Item 1, June 6 2015*
[24] *Meerow et al. 2019*

4 | GARE Racial Equity Toolkit

The GARE (Government Alliance on Race & Equity), a national network of governments working to achieve racial equity, developed the Racial Equity Toolkit in 2015. The toolkit presents a multi-layered approach to integrating racial equity into city decisions and processes, and is incorporated into the City of Berkeley's Resilience Strategy as well as the 2018-2019 Strategic Plan. As described in the toolkit, when "racial equity is not explicitly brought into operations and decision-making, racial inequities are likely to be perpetuated."[25] Questions in the toolkit, such as – Who will benefit from or be burdened by your proposal? What are your strategies for advancing racial equity or mitigating unintended consequences? – help decision-makers place racial equity at the center of every strategy and make more thoughtful, informed decisions.

5 | City of Berkeley Racial Equity Lens Toolkit

As part of its Adeline Corridor Specific Plan process, the City of Berkeley developed its own Racial Equity Lens Toolkit to assess city policies, plans, programs, and budgets in order to identify biases and help ensure equitable access to opportunities for all community members. This Toolkit, which was adapted from the City of Madison's racial equity work and builds on principles outlined in the GARE toolkit, was created not only to inform work on the Adeline Corridor, but to enable City staff to integrate equity considerations into all operations and services. Through a series of questions, the Toolkit is designed to help users think about the interaction between race and place, and design successful neighborhood change efforts with a focus on underserved populations.[26] A few of the guiding questions include:

- How can our approaches to increasing affordable housing, health, wealth, and equitable development become more effective – particularly for the most racially, socially, and economically vulnerable?
- How do we know if we are being successful without ensuring that success is measured through an equity lens?
- How do we get neighborhood transformation right?

The Toolkit offers a number of tactics to help users get neighborhood transformation right, such as engaging communities in the design and development process, building the capacity of local community members, and analyzing data not only to understand the story that it tells but also to consider what stories may be missing. The Toolkit also provides guidance on how to determine the appropriate language for target communities by working toward mutually agreed upon language that is both clear and works to reduce power imbalances.

Developing a Resilient Homes Equity Pilot Program as a parallel program to the City's Seismic Transfer Tax Rebate Program presents a perfect opportunity to operationalize this Toolkit and use the tactics, as well as other equity principles mentioned above, to enable a more equity-centered approach to increasing the City's resilience. Furthermore, this approach can serve as a valuable example of how to

[25] *GARE 2016*
[26] *City of Berkeley Racial Equity Lens Toolkit 2019 (adapted from City of Madison, Race Forward)*

incorporate equity into a City program, and learnings can help the City scale use of the Toolkit to other activities and operations – enabling the City to further its goal of championing social and racial equity.

IV. Berkeley's Seismic Transfer Tax Rebate Program

In response to the 1989 Loma Prieta earthquake, the City took multiple steps to improve the seismic safety of buildings. One of those measures included the Seismic Transfer Tax Rebate Program, which allows up to 1/3 of the base 1.5 percent City Transfer Tax to be refunded on a dollar-for-dollar basis for voluntary seismic upgrades to residential property within one year of purchase.[27] Examples of qualifying seismic retrofits include: work to repair or replace substandard foundations, securing chimneys, and anchoring existing water heaters. The Program has been extremely successful at increasing seismic safety, and has contributed to roughly 75 percent of Berkeley's homes becoming more seismically safe over a 20-year period.[28] Since July 2002, more than 3,000 rebates have been processed resulting in over $12 million to property owners.[29] With fewer homes needing seismic retrofits, the Program has seen a decline in program participation in recent years (see Figure 3). Between 2014 and 2019, the number of rebates decreased by 63 percent. As a result of this trend, as well as a desire to make progress on the City's broader goals around electrification and GHG emission reduction targets, Council is considering expansion of the Program to include rebates for other sustainability-related improvements.

Figure 4: Seismic Transfer Tax Rebate

Fiscal Year	# Residential Transfers	Total # Seismic Transfer Tax Rebates	Total Seismic Rebate Amount Spent ($)	Eligible Residential Rebate Amount	% Seismic Rebate Uptake (#)	% Seismic Rebate Amount Spent
2014	945	171	$823,352	$4,111,341	18%	20%
2015	886	140	$781,447	$4,158,022	16%	19%
2016	874	142	$826,993	$4,505,354	16%	18%
2017	710	77	$518,057	$4,470,106	11%	12%
2018	793	94	$676,042	$4,837,272	12%	14%
2019	863	63	$427,581	$5,859,070	7%	7%
Average 2014–2019	845	114	$675,579	$4,656,861	13%	15%

Source: City of Berkeley Finance Department

V. Applying an Equity Lens to the Seismic Transfer Tax Rebate Program

Expanding the Program to include specific sustainability upgrades is a strong strategy to increase program participation and to accelerate progress toward the City's broader resilience and sustainability goals. However, the Program only benefits those who can afford to purchase a home in Berkeley.

[27] *The Program applies to structures that are used exclusively for residential purposes, or any mixed-use structure that contains two or more dwelling units.*
[28] *Bohland et al. 2018*
[29] *City of Berkeley Local Hazard Mitigation Plan 2019*

When assessing the Program in the context of the City's Racial Equity Lens Toolkit, it becomes clear that the Program has failed on a number of fronts:

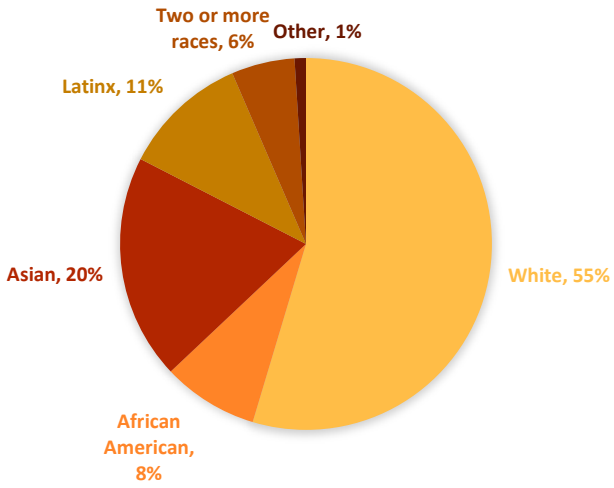
- Success is not measured through an equity lens: Program metrics focus on number of rebates and total funding issued, and data related to race/ethnicity, age, ability, gender, or other social factors are unavailable.
- It does not consider how access to the rebate may be limited for certain groups: barriers likely prevent individuals in certain racial/ethnic or socioeconomic groups from benefitting from this program, as it primarily benefits homeowners..[30]

Although Program data is limited, current homeownership trends and other information related to income, segregation, and displacement helps to illustrate how the current Program excludes frontline communities. Exclusion not only keeps resilience out of reach for these communities, but it perpetuates social and racial inequality in the City.

1 | Current Homeownership

The City is nearly equally split among homeowners and renters, with homeowners representing 46 percent of the population..[31] Homeownership rates are not distributed evenly, however, among Berkeley residents: while white residents make up 55 percent of Berkeley's population they represent 75 percent of the City's homeowners (see Figure 5 and 6)..[32] The current median sale price for a single-family home in Berkeley is over $1.2 million, which requires an annual household income of approximately $200,000..[33] Income disparities in the region demonstrate one barrier people of color face to purchase a home in Berkeley (see Figure 7). In addition, since the rebate is only available for one year after purchasing a property, long-time Berkeley homeowners do not qualify for the Program. These residents may struggle to find the capital needed to make home improvements – making them more susceptible to unsafe living conditions and/or displacement.

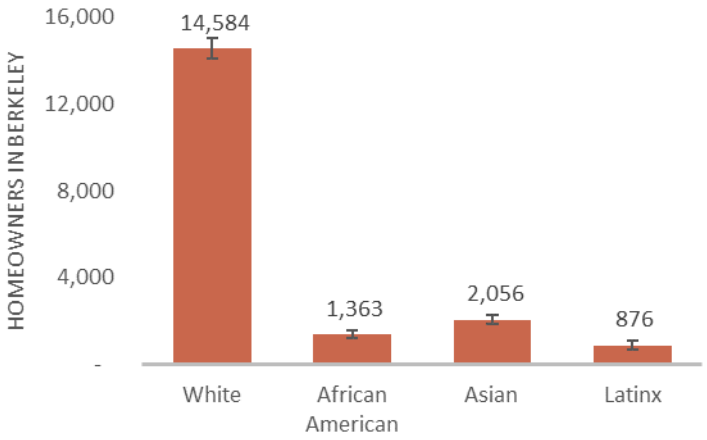
Figure 5: There are significantly more white homeowners in Berkeley compared to any other racial group



Source: ACS 2017 5-Year Estimates; Table DP05, Universe: Total Population, N=120,179

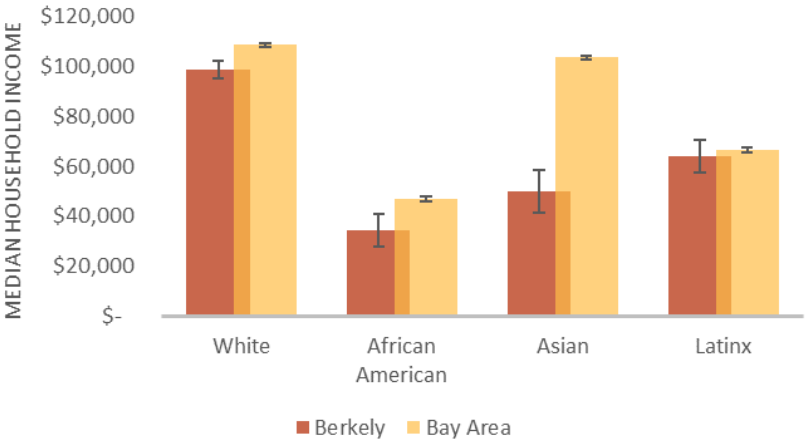
[30] Buyers of multifamily properties are eligible for the rebate, which in some situations may benefit low-income renters; however, the rebate is primarily used by single-family residential properties.
[31] American Community Survey (ACS) 2017 5-Year Estimates; Table B25033; Universe: Total Population in Occupied Housing Units; N = 107,408
[32] ACS 2017 5-Year Estimates; Table DP05, Universe: Total Population; and Table B25003H, Universe: Occupied housing units with a householder who is White alone, not Hispanic or Latino.
[33] Data from Zillow 2019, expects 20 percent down payment.

Figure 6: There are significantly more white homeowners in Berkeley compared to any other racial group



Source: ACS 2017 5-Year Estimates; Tables B25003B, B25003D, B25003H, B25003I; Universe: Occupied housing units; Note: Figure 4 does not include the race & ethnicity categories for American Indian & Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, or Two or More Races; Margins of Error expressed at 90 percent confidence level

Figure 7: On average, white households in Berkeley make almost three times more than African American households



Source: ACS 2017 5-Year Estimates; Tables B19013B, B19013D, B19013H, B19013I; Universe: Households; Note: 'Bay Area' consists of San Francisco, Alameda, Marin, Contra Costa, and San Mateo counties; Margins of Error expressed at 90 percent confidence level

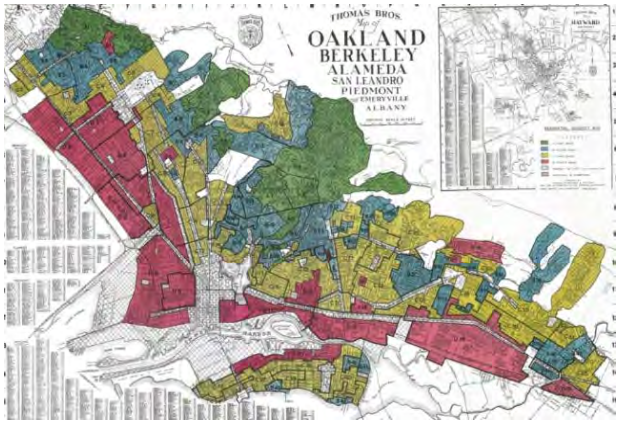
2 | Segregation and Displacement

Institutional and structural racism has and continues to contribute to unequal outcomes, not only in homeownership and income, as described above, but also in terms of segregation and displacement. These issues are interrelated, and a result of racist and discriminatory practices such as slavery, Jim Crow laws, racially restrictive covenants, and redlining. Although these policies have been banned, they have resulted in severe and lasting impacts on communities of color.

The history of redlining is particularly important for understanding how segregation and displacement affect the Berkeley community still today, and helps shed light on how programs aimed at recent homebuyers – such as the Seismic Transfer Tax Rebate Program – support racial exclusion. The Home Owners' Loan Corporation (HOLC), a federal agency created in 1933 as part of President Roosevelt's New Deal legislation, was designed to provide relief for homeowners that were in default or at risk of foreclosure by refinancing mortgages; indeed, it successfully refinanced over one million mortgages, saving 80 percent of homes for the original owner..[34]

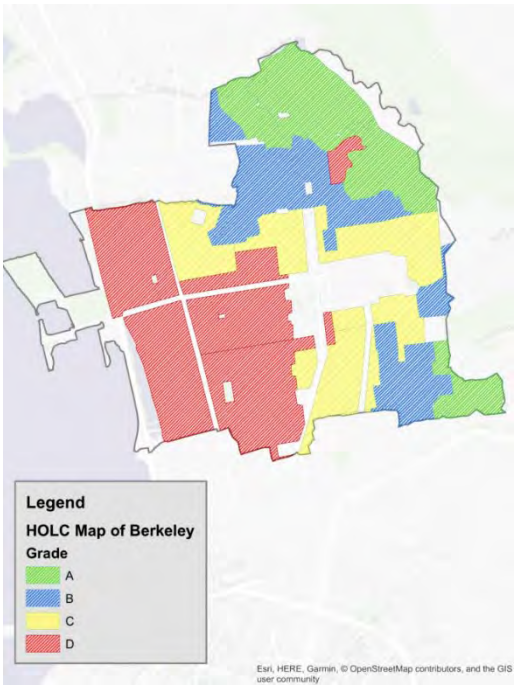
[34] *TIME 1951*

Figure 8: A 1937 San Francisco "residential security map" created by the Home Owners' Loan Corporation



Source: Green 2016

Figure 9: Redlining in Berkeley



Source: Barber 2018

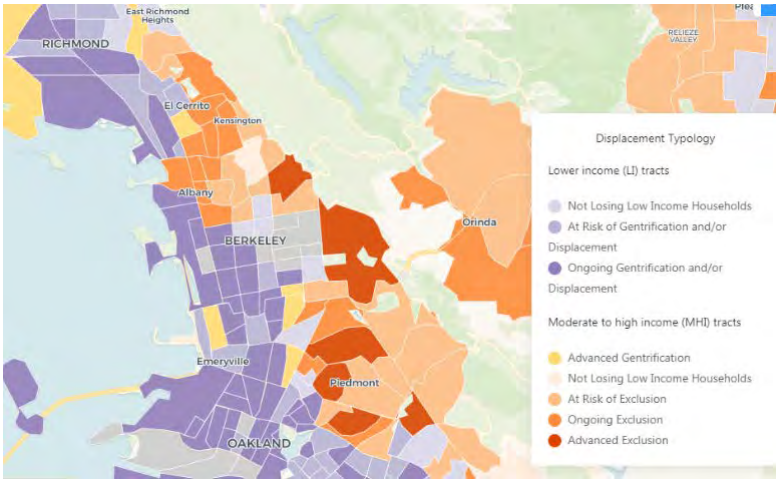
However, access to these government-backed, low-interest mortgages was not equal..[35] HOLC developed and relied on 'residential security maps' to evaluate mortgage lending risk in large American cities. Neighborhoods were classified as Best (green), Desirable (blue), Declining (yellow), or Hazardous (red) based on criteria such as: age and condition of housing stock, as well as economic class, employment status, and racial and ethnic composition of residents..[36] Potential borrowers in neighborhoods classified as Hazardous were often "redlined," or denied access to credit based on the location of their property in minority or economically disadvantaged neighborhoods. As a result of limited access to traditional loans, many potential borrowers in these neighborhoods could not purchase property or fell victim to high-interest loans or other discriminatory practices. Because access to credit is a critical part of economic inclusion and purchasing a home can lead to building wealth within families over generations, we can see a lasting effect of redlining through racial disparities in poverty. On a national level, the median net worth of white families is nearly 10 times the size of black families, and nearly 1 in 5 black families have zero or negative net worth – twice the rate of white families..[37] In Berkeley today, "the proportion of families living in poverty is 8 times higher among African American families, 5 times higher among Latin[x] families, and 3 times higher among Asian families, compared to White families."[38]

Although redlining was prohibited under the Fair Housing Act of 1968, its enduring effect is still evident across the US, including in Berkeley – not only in poverty rates, homeownership, and income, but also in segregation and displacement. According to the Urban Displacement Project, 83 percent of today's

[35] *Mitchell & Franco 2018*
[36] *Ibid.*
[37] *Jan 2017*
[38] *City of Berkeley Health Status Report 2018*

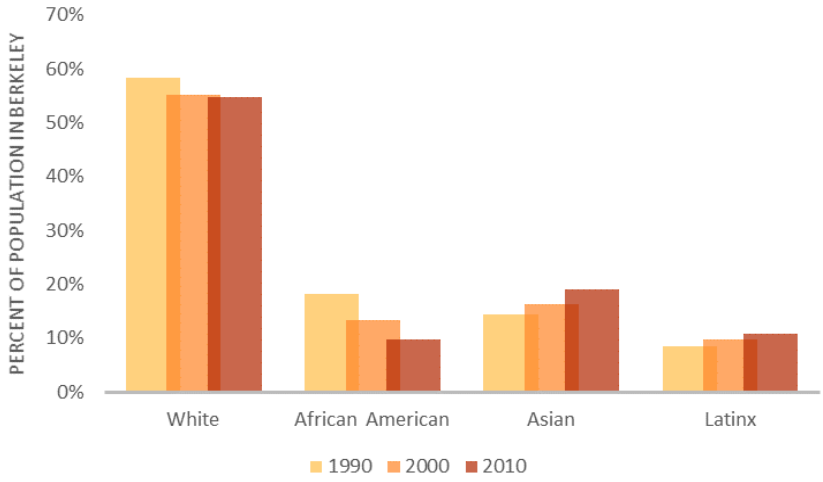
gentrifying areas in the East Bay were rated as hazardous (red) or declining (yellow) by HOLC, and 75 percent of today's exclusionary areas were rated as best (green) or desirable (blue)..[39] Redlining led to racial and economic segregation in cities, and South and West Berkeley – historically redlined communities – still contain more of Berkeley's low-income communities and communities of color..[40] In addition, as the cost of living increases along with increased urbanization, these communities are also facing the greatest risk of gentrification and displacement (see Figure 10). As a result, Berkeley is losing its communities of color and low-income communities. For example, the African American population across Berkeley fell from 13.3 percent in 2000 to 9.7 percent in 2010 (see Figure 11). The change is even more pronounced in South and West Berkeley: between 2000 and 2017 the number of African American residents declined by 40 percent (see Figure 12). This trend is not only impacting the diversity of Berkeley, but also highlights the continual disenfranchisement of people of color.

Figure 10: Formerly redlined communities are experiencing higher rates of gentrification and displacement



Source: Urban Displacement Project

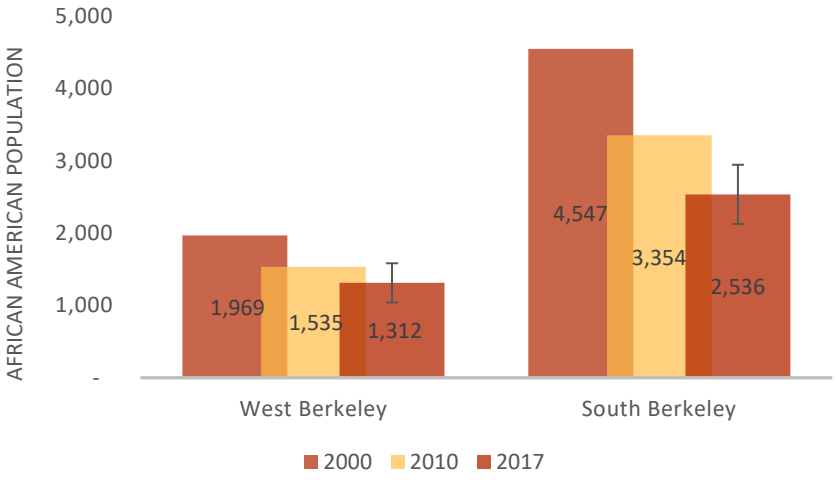
Figure 11: Berkeley is losing its African American population



Source: Decennial Census 1990, 2000, 2010; Table DP-1 and Table P004; Universe: Total Population; Note: 1990 N=102,724, 2000 N=102,743, and 2010 N=112,580

[39] *Urban Displacement Project*
[40] *City of Berkeley Agenda Item 22, April 30 2019*

Figure 12: West Berkeley and South Berkeley have experienced the highest rate of decline in the African American population



Source: Decennial Census 2000 & 2010; Table DP-1; and ACS 2017 5-Year Estimates; Table B03002; Universe: Total Population; Note: Margins of Error expressed at 90 percent confidence level. Census tracts for West Berkeley include 4220, 4221, 4232, and South Berkeley include 4232, 4235, 4239.01, 4240.01

VI. Recommendations

The City of Berkeley has committed to creating institutional change on racial equity,[41] and the Resilient Homes Equity Pilot Program is a perfect opportunity for the City to further its commitment. The City has already invested in creating a Racial Equity Lens Toolkit, which can be used to guide program expansion in a manner that reduces racial disparities and increases social resilience. As a result, this paper recommends Berkeley City Council take the following actions to build both physical and social resilience:

1. **Approve the development of a Resilient Homes Equity Pilot Program that leverages the City's Racial Equity Lens Toolkit in collaboration with community organizations and stakeholders.**
2. **Confirm a commitment to dedicate additional future funding to implement the Equity Pilot, with the exact annual amount to be determined during the program design phase.**

If these requests are approved by Council, staff will work with community-based organizations to determine a target group for the Equity Pilot and co-create it with community members. Using the City Toolkit as a guide, staff should also focus on creating an evaluation framework for the Equity Pilot that measures success through an equity lens, including program metrics that reflect data related to race/ethnicity, age, ability, gender, or other social factors when available.

[41] *City of Berkeley Resilience Strategy 2016*

At a high level, the Equity Pilot may enable underserved households to make seismic, sustainability, electrification and resilience upgrades through subsidies or other mechanisms leading to safer, healthier, and more sustainable living environments. More research is required to determine the most appropriate mechanism, but rebates (like the existing Program structure) will likely not be an effective method for low-income groups because they require households to have cash upfront to make costly improvements. More work is also required to determine the Pilot's specific target group. The Seismic Transfer Tax Rebate Program, as it is currently designed, reinforces economic inequality by benefitting recent homebuyers who are already economically advantaged.[42] To enable more equitable outcomes, the Equity Pilot should focus on reaching frontline communities, including communities of color, low-income communities, and long-term homeowners with limited incomes. More specifically, the Equity Pilot may target benefitting renters, residents with disabilities or elderly residents, and others who are not able to access the Seismic Transfer Tax Rebate Program.

Potential Target Groups

One group the Pilot may target is renters. Renters are generally less secure financially[43] and more vulnerable to displacement,[44] and could benefit greatly from home improvements that they (or their landlords) could otherwise not afford. In California, 70 percent of low-income households are renters and 47 percent live in multifamily housing.[45] In Berkeley, 83 percent of households earning less than $50,000 in annual income are renters.[46] Focusing on renters may also mean impacting more communities of color: 67 percent of Berkeley's African American households are renters[47] and 74 percent of Latinx households are renters.[48]

Other potential target groups for the Pilot include priority populations that are homeowners, such as differently abled residents, seniors, and communities of color. Differently abled homeowners have more complex energy reliability needs, and often need more support preparing for and after a disaster. Because senior homeowners often have fixed incomes, they may struggle with housing maintenance costs.[49] Additionally, research shows that seniors may be more vulnerable to displacement.[50] With the number of residents 65-years and older expected to more than double by 2030 in Berkeley,[51] the need for services or additional support may also increase. Another important trend is the change in Berkeley's diversity: between 2000 and 2010 the largest change to Berkeley's ethnic diversity was the decline in its African American population[52] – and this trend has continued in recent years. Instituting

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[42] Recent buyers in Berkeley can be considered economically advantaged because they have the resources and capital to purchase a property in a highly-competitive housing market. However, we recognize there is a range of home prices in the City, and not all buyers can afford a million-dollar home. We believe the Program offers real value for buyers in the lower range of home prices and who may not have the disposable income to spend on important safety or sustainability upgrades.

[43] Scally 2018

[44] Florida 2017

[45] Scavo 2016

[46] ACS 2017 5-Year Estimates; Table B25118; Universe: Occupied Housing Units

[47] ACS 2017 5-Year Estimates; Table B25003B; Universe: Occupied housing units with a householder who is Black or African American alone

[48] ACS 2017 5-Year Estimates; Table B25003I; Universe: Occupied housing units with a householder who is Hispanic or Latino

[49] City of Berkeley Housing Element 2015

[50] Nyden et al. 2006

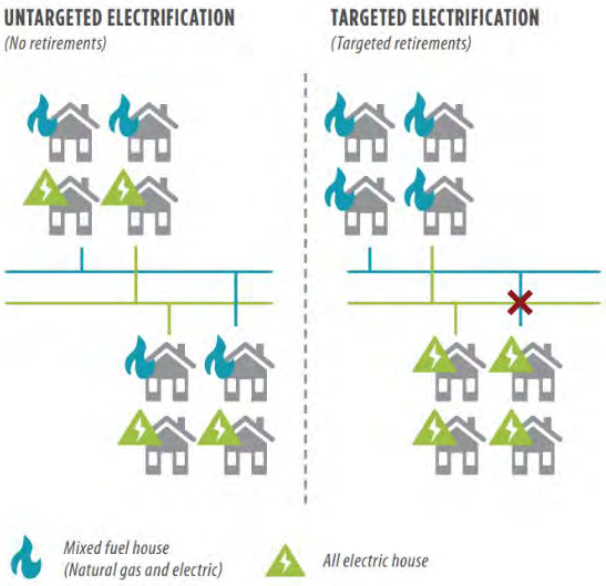
[51] Age-Friendly Berkeley Action Plan 2018

[52] City of Berkeley Housing Element 2015

additional anti-displacement measures, such as a Resilient Homes Equity Pilot, can slow this trend and enable more long-term members of the community to stay in their homes. Enabling homeowners to make important repairs is an effective strategy for preventing displacement.[53, 54]

Another way staff may choose to focus the Pilot is based on location of existing natural gas infrastructure. Targeting a group of underserved households that rely on the same segment of the gas distribution system, and helping them transition to all-electric, could lead to that entire gas line segment becoming decommissioned (see Figure 13). Strategic decommissioning of gas lines can help the overall system maintain sufficient pressure and reliable service, and may even lead to savings on maintenance costs.[55] Electrification of these homes would also provide health and safety benefits to the residents, as discussed in more detail below.

Figure 13: Approaches to neighborhood-level electrification



Source: Gridworks 2019

VII. Potential Impact

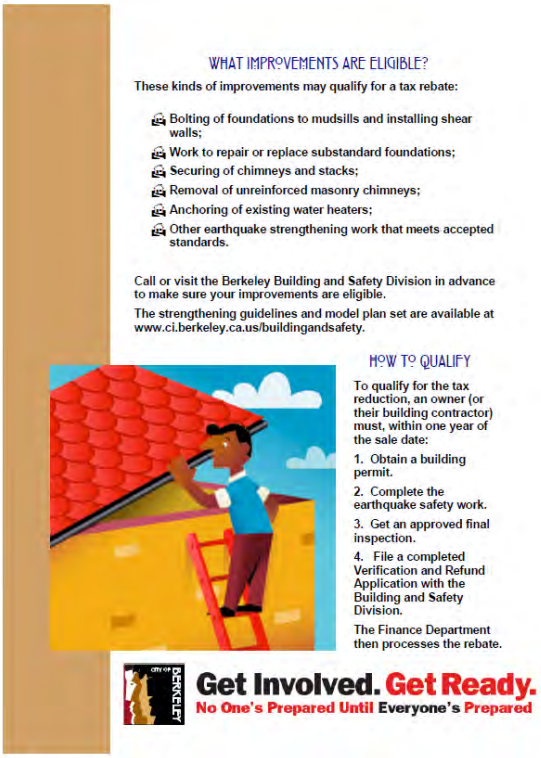
An equity-centered Pilot offers several potential benefits for Berkeley residents. As previously mentioned, the Equity Pilot is a great opportunity to operationalize the City's existing Equity Toolkit – and can provide valuable learnings for how to integrate the Toolkit across other City programs. In addition, while the specifics of the Pilot need to be developed in partnership with community members and various stakeholders, several high-level impacts can be inferred based on a preliminary understanding of what the Pilot might include. Enabling underserved residents to improve their living space not only benefits them as individuals, but the community as a whole can benefit from a safer, healthier, more sustainable, and more inclusive environment.

1 | Increased Safety

It is estimated that in the event of a major earthquake over 600 housing units in Berkeley would be destroyed and 20,000 would be damaged, with low-income housing units experiencing the highest rate of damage.[56] Extending the Program to low-income residents (or landlords with low-income tenants) can enable them to make the necessary seismic improvements to better protect themselves and their homes during an earthquake. Improving the stability of buildings to withstand a major earthquake not

[53] *The Housing Development Consortium of Seattle-King County 2019*
[54] *Alameda County 2018 The Housing Development Consortium of Seattle-King County 2019*
[55] *Gridworks 2019*
[56] *City of Berkeley Resilience Strategy 2016*

Figure 14: Berkeley Seismic Transfer Tax Rebate Program Flier



Source: City of Berkeley

only reduces an individual's risk of displacement, loss of property or loss of life, but better positions the city as a whole to recover more rapidly after an earthquake.[57] The Berkeley Seismic Transfer Tax Rebate Program flier says it best: "Get Involved. Get Ready. No One's Prepared Until Everyone's Prepared" (see Figure 14).

Offering qualifying electrification upgrades as part of the Equity Pilot can also significantly reduce the risk of gas leaks following an earthquake. Gas leaks in general pose a safety risk, as can be seen in the Porter Ranch incident[58] and San Bruno gas explosion,[59] thus lessening the City's reliance on natural gas can improve public safety. In addition, because repairing electric infrastructure post-disaster can happen faster than repairing gas lines, increasing electrification can position the city to recover more quickly post-disaster.[60]

2 | Improved Health Outcomes

Many aspects of the physical environment can directly affect people's health. Enabling more households to switch to electric appliances can improve indoor air quality, which can have dramatic effects on health.[61] Gas stoves release nitrogen dioxide and other particulates while burning, and prolonged exposure to these can lead to asthma or other respiratory illnesses – especially among children and seniors.[62] One study found that children living in a home with a gas stove have a 42 percent increased risk of asthma and have a 24 percent increased risk of asthma over their lifetime.[63] Electric stoves do not emit particulates and, since electric stoves do not rely on combustion, there is also no risk of carbon monoxide poisoning. In addition, the risk of carbon monoxide poisoning can be reduced by replacing gas furnaces with electric heat pumps. According to the Center for Disease Control (CDC), approximately 50,000 people in the U.S. visit the emergency room each year as a result of accidental carbon monoxide poisoning and at least 430 people die from accidental exposure.[64] Electric heat pumps, which provide both heating and cooling, can also provide critical temperature control during heat waves. In 2017, 14 people died in the Bay Area as a result of extreme heat.[65] It is predicted that by 2100, Berkeley will have 6-10 additional heat waves each year,

[57] *FEMA 2016*
[58] *Siders 2016*
[59] *Bowe et al. 2015*
[60] *City of Berkeley Adopt an Ordinance, Item 21, July 9, 2019*
[61] *Barron 2017*
[62] *The Greenlining Institute 2019*
[63] *Lin et al. 2013*
[64] *CDC 2020*
[65] *Peterson 2018*

which will disproportionately impact seniors, children under five, and low-income community members..[66] As heat waves grow more frequent and more severe due to climate change, enabling low-income and underserved communities to access clean cooling technology can be an important public health strategy..[67]

By prioritizing communities of color, the Equity Pilot can also contribute to reducing health disparities. People of color in Berkeley are more likely than white people to experience a wide variety of health problems throughout their lives and die prematurely..[68] Asthma hospitalization rates for African American children under five is 10 times higher than the rate among white children, and for Latinx children it is 2.8 times higher..[69] A key piece to improving health outcomes is ensuring access to environments that support health,.[70] and a program that enables low-income and communities of color to improve their living environment and have access to clean technology can support better health and lead to better health outcomes.

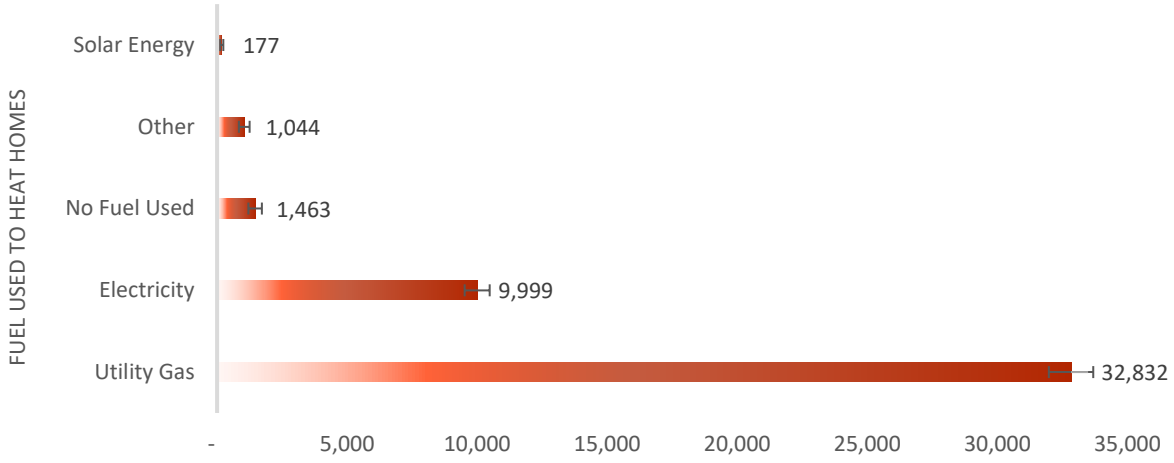
3 | Reduction in GHG Emissions

Berkeley has been a longtime leader in climate change mitigation. In 2006, Berkeley voters overwhelmingly endorsed a ballot measure to reduce the community's GHG emissions by 80 percent below 2000 levels by 2050,.[71] and three years later the City adopted a Climate Action Plan that included a vision to achieve zero net energy consumption for all new and existing buildings by 2050..[72] In 2018, the City Council declared a Climate Emergency and established a goal of becoming a Fossil Fuel Free City. That same year, Berkeley Mayor Jesse Arreguin set a goal to reach 100 percent renewable electricity by 2035 and achieve net-zero carbon emissions by the year 2050. Because energy use in homes and commercial buildings is the second largest contributor of greenhouse gases in Berkeley (making up almost 40 percent of overall GHG emissions),.[73] electrification of buildings is essential to reducing emissions and energy usage. Roughly 72 percent of Berkeley residents rely on gas for heating their homes, thus strategies aimed at accelerating the electrification of buildings could contribute significantly to the City's goal of achieving Fossil Fuel Free status (see Figure 15).

The City has made progress toward these goals and is leading the state and nation in pursuing stricter green building standards through the adoption of a natural gas ban in new residential buildings as well as through stretch and reach codes (codes beyond the minimum imposed by the state)..[74] However, more action is needed if the City intends to meet its goals..[75] Council has identified building retrofits as a key strategy, and recommended staff consider offering financial incentives to subsidize the transition toward sustainable buildings, including expanding the existing transfer tax subsidy..[76] The Equity Pilot

[66] *City of Berkeley Local Hazard Mitigation Plan 2014*
[67] *E3 2019*
[68] *City of Berkeley Health Status Report 2018*
[69] *Ibid.*
[70] *Ibid.*
[71] *City of Berkeley Electric Mobility Roadmap 2019*
[72] *Arreguin 2018*
[73] *City of Berkeley Pathway to Clean Energy Building Report RFP March 20, 2019*
[74] *City of Berkeley Short-Term Referral Item 24, Nov. 27, 2018*
[75] *According to the 2016 GHG emissions inventory, the City has achieved 15 percent reductions below 2000 levels.*
[76] *City of Berkeley Short-Term Referral Item 24, Nov. 27, 2018*

Figure 15: Roughly 72 percent of Berkeley households rely on natural gas for heating



Source: ACS 2017 5-Year Estimates; Table B25040; Universe: Occupied Housing Units;
Note: Margins of Error expressed at 90 percent confidence level

builds on this strategy of encouraging fuel switching to clean energy, and helps prevent low-income households from being left behind. All residents, regardless of their income or whether they own or rent their home, should have the opportunity to benefit from clean energy and contribute to Berkeley's climate action goals.

4 | Enables a Just Transition

Accelerating progress towards the City's Fossil Fuel Free goal is an important part of Berkeley's fight against climate change; however, efforts to achieve this goal must be carried out in a manner that reduces (not perpetuates) harmful inequalities. Council urged staff to consider "the framework for a just and equitable transition," and the Equity Pilot helps to enable a just transition. More specifically, it can address three critical elements:

- Transitioning buildings away from fossil fuels to cleaner electricity is a key strategy for Berkeley; however, high upfront costs can make this transition difficult for low-income homeowners. For example, electrical panel upgrades range between $2,000-$4,000.[77] and heat pump water heaters are currently more expensive than traditional gas water heaters. Subsidies or similar mechanisms can help households cover the higher upfront cost of such technologies, enabling households to benefit from cleaner, more efficient appliances.
- As more buildings transition away from natural gas, the cost of gas will inevitably rise: the gas distribution system is expensive to maintain, and as the number of ratepayers decreases the costs will be distributed across fewer ratepayers – leading to higher bills for those who are still using it..[78] The cost today for natural gas is roughly $1.50 per therm, and estimates place the cost as high as $19 per therm by 2050..[79] The last customers relying on the gas system could experience unreasonably high rates; and these customers "may well be those among us who

[77] *E3 2019*
[78] *Gridworks 2019*
[79] *Ibid.*

are least able to afford high rates and least able to finance the new appliances needed to convert to electricity."[80] It is therefore critical to develop strategies that enable more low-income communities to transition to all-electric and not be left to pay for an expensive, aging gas system. The City is in the process of developing an Existing Building Electrification Strategy, which will identify and assess the potential pathways to phasing out fossil fuels across all existing buildings in Berkeley as soon as possible and will incorporate an emphasis on a just transition.

- Because many low-income households are renters, strategies must consider how to incentivize landlords to invest in clean technology in a way that does not lead to higher rents (and prevents the cost of upgrades being passed through to tenants). Furthermore, tenants should benefit from the bill savings of more energy efficient appliances.

VIII. Conclusion

Berkeley's Seismic Transfer Tax Rebate Program has no doubt contributed to making the City more resilient to earthquakes and expanding the Program to include sustainability and energy efficiency upgrades will further build the City's resilience to natural disasters and climate change. However, the current Program fails to reach underserved members of the community despite the fact that low-income and minority communities are more vulnerable to natural disasters and the impacts of climate change..[81] Exclusion not only keeps resilience out of reach for frontline communities, but it perpetuates social and racial inequality in the City. Establishing a new, equity-centered program that incorporates key strategies from the City's Racial Equity Lens Toolkit can enable all residents to contribute to and benefit from building Berkeley's resilience – especially those most in need and historically underserved. With Council's support, a Resilient Homes Equity Pilot Program can help the City further its commitment to social and racial equity and secure its position as a leader in climate change, while also building a safer, healthier, more inclusive and more resilient community.

A Resilient Homes Equity Pilot can help Berkeley further its commitment to social and racial equity and secure its position as a leader in climate change, while also building a safer, healthier, more inclusive and more resilient community.

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[80] *Gridworks 2019*
[81] *City of Berkeley Resilience Strategy 2016*

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ATTACHMENT 3

Potential Qualifying Measures for Consideration

Below is a list of potential qualifying measures being considered for the expanded Resilience Transfer Tax Rebate Program. Measures are listed by color according to the type of resilience benefit they provide, and those with multiple benefits are shown with multiple colors.

The list of final qualifying measures will be specified in the Administrative Regulations.

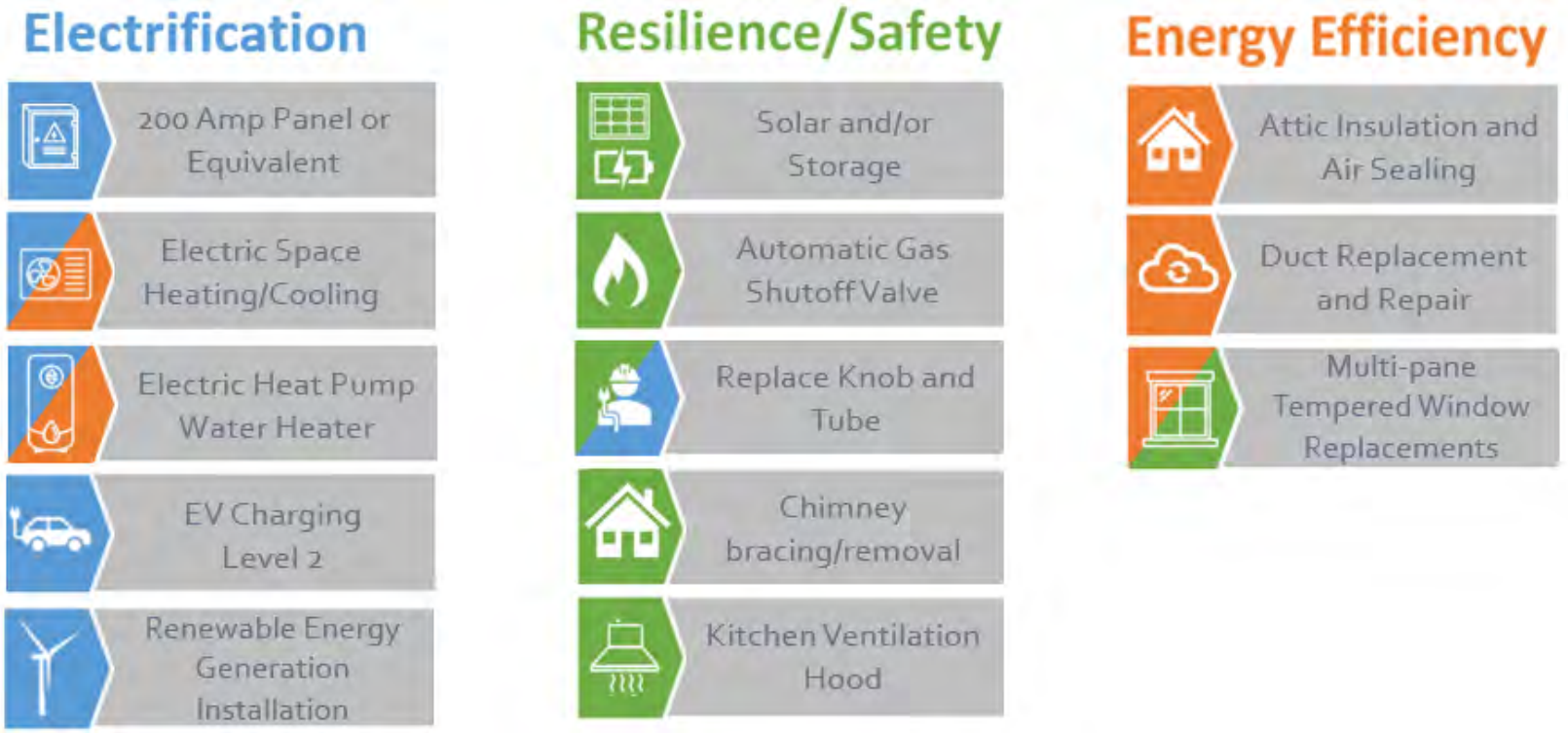

Figure A - Potential Qualifying Measures

Kate Harrison
Councilmember, District 4

REVISED
AGENDA MATERIAL
for Supplemental Packet 2

Meeting Date: **November 27, 2018**

Item Number: **24**

Item Description: **Short-Term Referral to City Manager and Office of Energy and Sustainable Development to Draft Ordinance Amending Berkeley Municipal Code Chapter 7.52, Reducing Tax Imposed for Qualifying Electrification, Energy Efficiency and Water Conservation Retrofits**

Submitted by: **Councilmember Harrison**

Added Councilmember Hahn as a cosponsor.

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Kate Harrison
Councilmember District 4

CONSENT CALENDAR
November 27, 2018

To: Honorable Mayor and Members of the City Council

From: Councilmembers Harrison, ~~and~~ Davila and Hahn

Subject: Short-Term Referral to City Manager and Office of Energy and Sustainable Development to Draft Ordinance Amending Berkeley Municipal Code Chapter 7.52, Reducing Tax Imposed for Qualifying Electrification, Energy Efficiency and Water Conservation Retrofits

RECOMMENDATION

Short-term referral to the City Manager and the Office of Energy and Sustainable Development to draft an ordinance amending Berkeley Municipal Code (BMC) Chapter 7.52, reducing tax imposed for qualifying electrification, energy efficiency, and water conservation retrofits.

BACKGROUND

The City of Berkeley faces climate change and water usage emergencies. A recent UN Intergovernmental Panel on Climate Change report highlighted the immediacy of the climate emergency, suggesting that in order to keep warming under 1.5 degrees Celsius, carbon emissions would need to be cut 45% by 2030.[1] Though California is no longer in extreme drought, Berkeley is still categorized as abnormally dry, almost 50% of the state is in moderate drought or worse, and we can expect to face major droughts in the future.[2]

The City is already leading the state and nation in pursuing stricter green building standards through the adoption of stretch and reach codes (codes beyond the minimum imposed by the state) favoring sustainable buildings and time of sale energy audits, but progress is still hindered by a significant lack of financial incentives to encourage the replacing and phasing-out of energy inefficient, carbon and water-intensive infrastructure in new and existing buildings. For example, even though electric heat pump water heaters can prevent significant carbon emissions and save money on heating bills, the relatively higher purchase and installation costs associated with heat pumps as compared to gas-fired heaters remains a major disincentive.

[1] IPCC Press Release, Summary for Policymakers of IPCC Special Report on Global Warming of 1.5ºC approved by Governments, 8 October 2018, http://www.ipcc.ch/pdf/session48/pr_181008_P48_spm_en.pdf

[2] National Integrated Drought Information System, Drought in California, https://www.drought.gov/drought/states/california.

The City has identified building retrofits as a key part of reducing emissions and energy and water usage. To achieve the ambitious sustainability goals set by the Council, the City cannot rely solely upon the market, state, federal and utility level incentives. It would do well to explore offering significant financial incentives to subsidize the transition towards sustainable building, including expanding the existing transfer tax subsidy for seismic retrofits to include qualifying sustainability retrofits.

Following the devastating 1989 Loma Prieta earthquake, the Council passed Ordinance 6072-NS in 1991 to reduce up to one-third of the transfer tax imposed on property owners who seismically retrofit any structure which is used exclusively for residential purposes, or any mixed use structure which contains two or more dwelling units. In passing the ordinance, forward-looking leaders acted independently of the state and federal government to subsidize critical building improvements in anticipation of relatively infrequent but exceedingly devastating earthquake emergencies. The seismic retrofit subsidy program offers a model for accelerating opportunities to address the major emergencies of our time.

This referral asks the City Manager and Office of Energy & Sustainable Development (OESD) to develop amendments to BMC Chapter 7.52 that expand the existing seismic retrofit subsidy in order to include appropriate reductions in transfer tax imposed on sales of property for qualifying electrification, energy efficiency, and water conservation retrofits. According to a 2018 City Manager report, 737 Berkeley residences were transferred in 2017.[3]

In drafting the ordinance, staff should consider existing City sustainability goals such as the 2009 Berkeley Climate Action Plan, and the framework for a just and equitable transition as set out in the Climate Emergency Declaration. Staff should tailor the subsidy to be commensurate with the emergency at hand and should design it to result in quantifiable reductions in emissions as well as energy and water waste.

OESD staff recently issued a request for proposals (RFP) for expert analysis identifying a set of measureable policies and programs to transition Berkeley's building stock to efficient and 100% clean energy.[4] The resulting analysis report should help inform staff in determining which types of greenhouse gas reduction measures transfer tax reductions could fund. Additionally, within the context of the City's sustainability goals

[3] Placing a Measure on the November 6, 2018 Ballot to Increase the Transfer Tax on Property Sales to Pay for General Municipal Services Including Funding Homeless Services, City Manager, July 31, 2018, https://www.cityofberkeley.info/Clerk/City_Council/2018/07_Jul/Documents/2018-07-31_Item_05_Placing_a_Measure_on_the_November_6.aspx

[4] Request for Proposals (RFP) Specification No. 19-11256-C for Pathway to Clean Energy Buildings Report: Existing Building Program Evaluation and Recommendations, OESD, October, 10, 2018, https://www.cityofberkeley.info/uploadedFiles/Finance/Level_3_-_General/19-11256-C%20-%20RFP%20Pathway%20to%20Clean%20Energy%20Building%20Report_revd%201017.pdf.

and the RFP analysis, staff should specifically consider developing and codifying definitions of qualifying improvements, including but not limited to:

- Electric service panel upgrades for the purpose of transitioning to electric appliances
- Transitioning home appliances to efficient electric versions, e.g. replacing gas burning appliances and systems such as fossil fuel HVACs, cooktops and ovens, washers and dryers, and water heaters.
- Solar or other clean energy generation installations
- Electric vehicle charging stations
- Building weatherization upgrades in coordination with the Building Energy Saving Ordinance (BESO)
- Graywater recapture systems
- Water efficient fixtures and irrigation systems

The seismic retrofit program was limited to residential and mixed use buildings, but staff should consider the appropriateness and effectiveness of extending the subsidy program to commercial and/or industrial properties for the purpose of achieving city-wide sustainability goals. It should also review whether the existing requirement for completing seismic retrofits following property transfers is appropriate for the sustainability retrofits outlined in this referral.

Finally, staff should attempt to estimate the carbon, electrical, and water savings that are likely to result from adoption of their proposal, and determine whether alternatives exist which, at a similar cost the city, would result in greater reductions.

This referral is compatible with OESD's 2017 Climate Action Report update suggesting that the Council take bold steps to meet Berkeley's 2050 emission reduction goals. The report highlighted the urgency of identifying resources for incentivizing electrification measures, building efficiency, generation of renewable electricity, and transitioning buildings and vehicles away from fossil fuel.[5]

[5] Berkeley Climate Action Plan Update, Office of Energy and Sustainable Development, December 7, 2017, https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/2017-12-07%20WS%20Item%2001%20Climate%20Action%20Plan%20Update.pdf

FINANCIAL IMPLICATIONS

Possible reduction in tax revenue, the magnitude of which is dependent on which retrofits are found to be qualifying.

ENVIRONMENTAL SUSTAINABILITY

Incentivizing electrification, energy efficiency, and water savings is directly in line with the City's climate and environmental goals.

CONTACT PERSON

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

Attachments:
1. BMC Section 7.52.060

7.52.060 Exceptions.

A. Any tax imposed pursuant to this chapter shall not apply to any instrument in writing given to secure a debt.

B. Any deed, instrument or writing to which the United States, or any agency or instrumentality thereof, any state or territory, or political subdivision thereof, is a party shall be exempt from any tax imposed pursuant to this chapter when the exempt agency is acquiring title.

C. Any tax imposed pursuant to this chapter shall not apply to the making, delivery, or filing of conveyances to make effective any plan of reorganization or adjustment:

1. Confirmed under the Federal Bankruptcy Act, as amended;

2. Approved in an equity receivership proceeding in a court involving a railroad corporation, as defined in subdivision (m) of Section 205 of Title 11 of the United States Code, as amended;

3. Approved in an equity receivership proceeding in a court involving a corporation, as defined in subdivision (3) of Section 506 of Title 11 of the United States Code, as amended; or

4. Whereby a mere change in identity, form or place of organization is effected.

Subdivisions 1 to 4, inclusive, of this section shall only apply if the making, delivering or filing of instruments of transfer of conveyance occurs within five years from the date of such confirmation, approval or change.

D. Any tax imposed pursuant to this chapter shall not apply to the making or delivering of conveyances to make effective any order of the Securities and Exchange Commission, as defined in subdivision (a) of Section 1083 of the Internal Revenue Code of 1954; but only if:

1. The order of the Securities and Exchange Commission in obedience to which such conveyance is made recites that such conveyance is necessary or appropriate to effectuate the provisions of Section 79k of Title 15 of the United States Code, relating to the Public Utility Holding Company Act of 1935;

2. Such order specifies the property which is ordered to be conveyed;

3. Such conveyance is made in obedience to such order.

E.

1. In the case of any realty held by a partnership, no levy shall be imposed pursuant to this chapter by reason of any transfer of an interest in a partnership or otherwise, if:

a. Such partnership (or another partnership) is considered a continuing partnership within the meaning of Section 708 of the Internal Revenue Code of 1954; and

b. Such continuing partnership continues to hold the realty concerned.

2. If there is a termination of any partnership within the meaning of Section 708 of the Internal Revenue Code of 1954, for purposes of this chapter, such partnership shall be treated as having executed an instrument whereby there was conveyed, for fair market value (exclusive of the value of any lien or encumbrance remaining thereon), all realty held by such partnership at the time of such termination.

3. Not more than one tax shall be imposed pursuant to this chapter by reason of a termination described in subdivision 2, and any transfer pursuant thereto, with respect to the realty held by such partnership at the time of such termination.

F.

1. Any tax imposed pursuant to this chapter shall not apply to any transfer of property from one spouse or domestic partner to the other in order to create a joint tenancy or tenancy in common of their common residence.

2. Any tax imposed pursuant to this chapter shall not apply to any transfer of property from one spouse to the other in accordance with the terms of a decree of dissolution or in fulfillment of a property settlement incident thereto; provided, however, that such property was acquired by the husband and wife or husband or wife prior to the final decree of dissolution. Any tax imposed pursuant to this chapter also shall not apply to any transfer from one domestic partner, as that term is used in the City of Berkeley's policy establishing domestic partnership registration, to another, where (1) prior to such transfer an affidavit of domestic partnership has been filed with the City Clerk pursuant to Section IV of the City of Berkeley's policy establishing domestic partnership registration; (2) subsequent to the filing of such affidavit of domestic partnership, either or both domestic partner(s) files a statement of termination with the City Clerk pursuant to Section V of the domestic partnership policy; (3) such transfer of real property is made pursuant to a written agreement between the domestic partners upon the termination of their domestic partnership; and (4) the real property was acquired by either or both domestic partner(s) prior to the filing of the statement of termination.

G. Any tax imposed pursuant to this chapter shall not apply to transfers, conveyance, lease or sub-lease without consideration which confirm or correct a deed previously recorded or filed.

H. Any tax imposed pursuant to this chapter shall not apply to transfers recorded prior to the effective date of the ordinance codified in this chapter.

I. The tax imposed pursuant to this chapter shall not apply with respect to any deed, instrument, or writing to a beneficiary or mortgagee, which is taken from the mortgagor or trustor as a result of or in lieu of foreclosure; provided, that such tax shall apply to the extent that the consideration exceeds the unpaid debt, including accrued interest and cost foreclosure. Consideration, unpaid debt amount and identification of grantee as beneficiary or mortgagee shall be noted on said deed, instrument or writing or stated in an affidavit or declaration under penalty of perjury for tax purposes.

J. Reserved.

K.

1. Up to one-third of the tax imposed by this chapter shall be reduced, on a dollar for dollar basis, for all expenses incurred on or after October 17, 1989 to "seismically retrofit" either any structure which is used exclusively for residential purposes, or any mixed use structure which contains two or more dwelling units.

2. The term "seismically retrofit" within the meaning of this chapter means any of the following:

a. That work which is needed and directly related to make the structure capable of withstanding lateral loads equivalent to the force levels defined by Chapter 23 of the 1976 Uniform Building Code;

b. Replacement or repair of foundations; replacement or repair of rotted mud sills; bracing of basement or pony walls; bolting of mud sills to standard foundations; installation of shear walls; anchoring of water heaters; and/or securing of chimneys, stacks or water heaters;

c. Corrective work on buildings which fit the criteria in subsection K.1, which are listed on the City of Berkeley inventory of potentially hazardous, unreinforced masonry buildings when such work is necessary to meet City standards or requirements applicable to such buildings;

d. Any other work found by the building official to substantially increase the capability of those structures, specified in subsection K.1, to withstand destruction or damage in the event of an earthquake.

3. The work to seismically retrofit structures as provided herein shall be completed either prior to the transfer of property or as provided in subsection K.4.

4. If the work to seismically retrofit the structures provided for herein is to be performed after the transfer of property which is subject to the tax imposed by this chapter, upon completion of such work and certification by the building official as to the amount of the expenses of such work the City Manager or his/her designee may refund such expenses not to exceed one-third of the tax imposed to the parties to the sale in accordance with the terms of such sale. Any remaining tax shall be retained by the City.

5. From the date of the recordation of the transfer document, the applicant shall have one year to complete all seismic retrofit work and submit a seismic retrofit verification application to the codes and inspection division of the City of Berkeley. If the work is not completed at the end of one year, that portion which has been completed may be credited to the applicant upon submission of a seismic retrofit verification application and substantiating documentation, as required by the codes and inspections division of the City of Berkeley, showing the dollar amount of work completed up to that date. All other monies remaining in escrow will be returned to the City of Berkeley upon written request by the Finance Department.

6. Within the one-year period established by paragraph 5, an applicant may request, and the City Manager may approve, an extension of up to one year. The City Manager or his/her designee may grant such an extension only for good cause. The decision of the City Manager or his/her designee shall be entirely within his or her discretion and shall be final.

a. "Good cause" includes (i) the inability of the applicant, after a prompt and diligent search to find and retain the services of an architect, engineer, contractor or other service provider whose services are necessary for the seismic retrofit work; (ii) unforeseen and unforeseeable circumstances such as a significant change in the scope of the seismic retrofit work due to circumstances in the field which could not reasonably have been known earlier; and (iii) serious illness or other extraordinary and unforeseeable circumstances that prevented the timely commencement or completion of the seismic retrofit work.

b. "Good cause" does not include (i) ignorance of the applicable City ordinances or regulations concerning the seismic retrofit rebate provided in this chapter or state or local laws relating to the standards with which seismic retrofit work must comply; or (ii) any delays which were within the control or responsibility of the applicant.

03

Planning & Development Department
Office of Energy and Sustainable Development

September 29, 2020

To: Facility, Infrastructure, Transportation, Environment and Sustainability (FITES) Policy Committee

From: Jordan Klein, Interim Director, Planning & Development Department
Billi Romain, Manager, Office of Energy and Sustainable Development

Subject: Revised Draft Amendments to the Building Energy Saving Ordinance (BESO)

Attached to this memo is a revised version of the draft amendments to the Building Energy Savings Ordinance (BESO) based on recommendations provided by the FITES Policy Committee at the September 16, 2020, meeting. The revisions include:

- Adding the definition of “Electrification.” BMC 19.81.030 (D)
- An update to the “High Performance Exemption” to include building electrification as path to demonstrate high performance and qualify for an exemption. BMC 19.81.090 (A)
- An update to the “Deferral at Time of Real Estate Listing” language to accommodate the shift from time of sale to time of listing. BMC 19.81.090 (B)
- An update to the “Deferral at Time of Real Estate Listing” to include a requirement to provide potential buyers with information on the fuel source for each end use for the building and electrification requirements and incentives. BMC 19.81.090 (B)

Attachment: Revised Draft Amendments to the Building Emission Saving Ordinance (BESO)

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Chapter 19.81
BUILDING ~~ENERGY~~ EMISSIONS SAVING

Sections:

19.81.010 Purpose.

The purpose of this chapter is to reduce energy use, ~~and~~ water consumption, and greenhouse gas emissions in existing buildings. These efficiency and emission reduction improvements will lower energy and water costs, transition buildings away from the use of fossil fuels, ~~and greenhouse gas emissions citywide~~ and increase comfort, safety and health for building occupants. The provisions of the ordinance will inform decision makers about energy and emissions performance and improvement opportunities. (Ord. 7397-NS § 5 (part), 2015)

19.81.020 Applicability.

The requirements of this Chapter shall apply to all buildings that are located in whole or in part within the City. However, it shall not apply to agencies that are not subject to City authority. (Ord. 7397-NS § 5 (part), 2015)

19.81.030 Definitions.

A. "Administrator" means the Director of Planning and Community Development or their designee.

B. "Building Owner" means the owner of record of a building. In the case of a building held in cooperative or condominium form of ownership, the term "Building Owner" shall refer to the board of managers, board of directors, homeowners association, or other representative body of the jointly-owned building with authority to make decisions about building assessments and alterations.

C. "Building Energy Score" means a measurement of how efficiently a building uses energy and/or water based on modeled simulations or actual energy use of the building over time compared to similar buildings, which can be in the form of a performance score, asset score or other comparable metric that meets standards and formats established by the Administrator.

D. “Electrification” means the transition of building systems and appliances away from natural gas to electricity as the source of energy.

E. "Energy Report" means a report submitted by a Registered Service Provider that identifies existing conditions, opportunities for water and energy efficiency in a building, opportunities to transition off fossil fuels, greenhouse gas emissions reductions, and available incentives and financing, as well as any applicable Building Energy Score, in accordance with the standards and formats established by the Administrator.

FE. "ENERGY STAR Performance Report" means an ENERGY STAR Portfolio Manager Benchmark report generated by the on-line tool developed by the U.S. Environmental Protection Agency that determines energy use intensity and an Energy Star Performance Score for a building based on utility usage data.

G. “Energy Upgrade” means the installation or completion of recommended measure(s) that improve the building’s energy efficiency, increases the building’s resilience, supports the transition off fossil fuels, or decreases the building’s greenhouse gas emissions.

HF. "Extensive Renovation" means any project that replaces all building space heating, cooling, and ventilation equipment and replaces at least half of the building envelope, in accordance to standards established by the Administrator.

I. "Green Building Rating" means an approved rating by a green building verification system consistent with standards identified by the Energy Efficiency Standardization Coordination Collaborative (EESCC) of the American National Standards Institute (ANSI), including, but not limited to the following: Build It Green (BIG) GreenPoint Rated Existing Building; US Green Building Council Leadership in Energy and Environmental

Design Existing Building Operation and Maintenance (USGBC LEED-EBOM); Passive House Institute (PHI) Certified Passive House and EnerPHit; Passive House Institute US (PHIUS) PHIUS+ Certified Project; and the International Living Future Institute Zero Net Energy Building and Living Building Challenge Certification; or any other rating demonstrating approved levels of energy efficiency, as determined by the Administrator.

~~H~~J. "Gross Floor Area" means the total size, as measured between the principal exterior surfaces of the enclosed fixed walls of the building(s). This includes all areas inside the building(s) such as: occupied tenant areas, common areas, meeting areas, break rooms, restrooms, elevator shafts, mechanical equipment areas, and storage rooms. Gross Floor Area should not include interstitial plenum space between floors, which may house pipes and ventilation.

~~I~~K. "Large Building" means any building with 25,000 square feet or more of Gross Floor Area.

~~J~~L. "Medium Building" means any building with between 15,000 and 24,999 square feet of Gross Floor Area, excluding Single Family Buildings.

M. "Real Estate Listing" means any listing of a building for sale in the City of Berkeley. "Real Estate Listings" include listing a building for sale by a property owner or by a licensed agent. "Real Estate Listings" include any listing for sale by any advertisement, internet posting, or publicly displayed sign.

N~~K~~. "Registered Service Provider" means an entity that has been registered by the Administrator to provide an Energy Report and/or Building Energy Score as required by this ordinance.

O~~L~~. "Sale" means the conveyance of title to real property as a result of the execution of a real property sales contract as defined in Section 2985 of the California Civil Code as well as any change of ownership described in subdivision (c) of Section 61 and subdivision (c) of Section 64 of the California Revenue and Taxation Code. "Sale" does not include transfer of title pursuant to inheritance, involuntary transfer of title resulting from default on an obligation secured by real property, change of title pursuant to marriage or divorce, condemnation, or any other involuntary change of title affected by operation of law.

P~~M~~. "Single Family Building" means any building comprised solely of 1 to 4 residential units, regardless of size.

Q~~N~~. "Small Building" means any building with less than 15,000 square feet of Gross Floor Area, excluding Single Family Buildings. (Ord. 7397-NS § 5 (part), 2015)

19.81.040 Large Buildings.

A. Annual ENERGY STAR Performance Report

Owners of Large Buildings shall submit to the Administrator an ENERGY STAR Performance Report on an annual basis in accordance with the phase-in schedule below and no later than July 1 each year thereafter.

B. Energy Report

Owners of Large Buildings shall have a Registered Service Provider prepare and submit to the Administrator an Energy Report as specified in the phase-in schedule below and by July 1 every five years thereafter.

C. Disclosure

The most recent ENERGY STAR Performance Report and a summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees and to prospective lessees and buyers prior to execution of a lease or contract for sale.

D. Phase-in and Reporting Cycle Schedule

Owners of Large Buildings shall be in compliance with the requirements of this section by the dates specified below.

1. July 1, 2018 for buildings with 50,000 or more square feet of Gross Floor Area, with an annual ENERGY STAR Performance Reporting cycle and a 5 year Energy Report reporting cycle thereafter.

2. July 1, 2019 for buildings with 25,000 or more square feet of Gross Floor Area with an annual ENERGY STAR Performance Reporting cycle and a 5 year Energy Report reporting cycle thereafter. (Ord. 7477-NS § 1, 2016: Ord. 7397-NS § 5 (part), 2015)

E. Evaluate and Recommend Energy Upgrades Requirements

The Administrator of this Chapter shall develop recommendations for Energy Upgrade requirements for Large Buildings based on building performance that are consistent with requirements of State and Federal law. The Administrator shall identify incentives, rebates or other compliance resources to off-set the costs of the Energy Upgrade requirements. The Administrator shall then report the proposed Energy Upgrade requirements for Large Buildings to the City Council for consideration.

19.81.050 Medium and Small Buildings.

A. Annual ENERGY STAR Performance Report

Owners of Medium Buildings shall submit to the Administrator an ENERGY STAR Performance Report on an annual basis as of July, 1 2021, and no later than July 1 each year thereafter.

~~A~~B. Energy Report

Owners of Medium and Small Buildings shall have a Registered Service Provider prepare and submit to the Administrator an Energy Report ~~upon the earlier of~~:

1. Prior to the Real Estate Listing of the building for Sale~~Time of building Sale~~; or

2. Within ~~12~~ 6 months of a lender having acquired title due to foreclosure or deed in lieu of foreclosure.~~; or~~

~~3. The phase-in dates and reporting cycle provided in the schedule below.~~

The requirement at time of Real Estate Listing~~Sale~~ may be transferred to the buyer and deferred for ~~12~~ 6 months under the provisions of Section 19.81.090.B of this Chapter.

~~B~~C. Disclosure

The most recent ENERGY STAR Performance Report, if applicable, and a summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees and prospective lessees, to all licensed real estate agents working on the seller's behalf, and to prospective buyers who visit the building while it is listed publicly for sale.~~A summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees and to prospective lessees and buyers prior to execution of a lease or contract for sale.~~

D. Evaluate and Recommend Energy Upgrades Requirements

The Administrator of this Chapter shall develop recommendations for Energy Upgrade requirements for Small and Medium Buildings based on building performance that are consistent with State and Federal law. The Administrator shall identify incentives, rebates or other compliance resources to off-set the costs of the Energy

Upgrade requirements. The Administrator shall then report the proposed Energy Upgrade requirements for Small and Medium Buildings to the City Council for consideration.

~~C. Phase-in and Reporting Cycle Schedule~~

~~Effective December 1, 2015, owners of Medium Buildings and Small Buildings shall be in compliance with the requirements of this section at time of building Sale or within 12 months when a lender acquires title, or by the dates specified below, whichever comes first. The requirement at Sale may be transferred to the buyer and deferred for 12 months under the provisions of Section 19.81.090.B of this Chapter.~~

~~1. By July 1, 2020 for Medium Buildings with 15,000 or more square feet of Gross Floor Area, and on a 10 year reporting cycle thereafter.~~

~~2. By July 1, 2021 for Medium Buildings with 5,000 or more square feet of Gross Floor Area, and on a 10 year reporting cycle thereafter.~~

~~3. By July 1, 2022 for Small Buildings with less than 5,000 square feet, and on a 10 year reporting cycle thereafter. (Ord. 7477-NS § 2, 2016; Ord. 7397-NS § 5 (part), 2015)~~

19.81.060 Single Family Buildings

A. Energy Report

Owners of Single Family Buildings shall have a Registered Service Provider prepare and submit to the Administrator an Energy Report ~~at~~:

1. Prior to the Real Estate Listing of the building for Sale~~Time of building Sale~~; or

2. Within ~~12~~ 6 months of a lender having acquired title due to foreclosure or deed in lieu of foreclosure.

The requirement at time of Real Estate Listing ~~Sale~~ may be transferred to the buyer and deferred for ~~12~~ 6 months under the provisions of Section 19.81.090.B of this Chapter.

B. Disclosure

A summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees

and ~~to~~ prospective lessees, to all licensed real estate agents working on the seller's behalf, and to prospective buyers who visit the building while it is listed for sale~~prior to execution of a lease or contract for sale~~.

C. Reporting Schedule

The requirements of this Section of the ordinance shall become effective December 1, 2015. (Ord. 7397-NS § 5 (part), 2015)

D. Evaluate and Recommend Energy Upgrades Requirements

The Administrator of this Chapter shall develop recommendations for Energy Upgrade requirements for Single Family Buildings based on building performance that are consistent with requirements of State and Federal law. The Administrator shall identify incentives, rebates or other compliance resources to off-set the costs of the Energy Upgrade requirements. The Administrator shall then report the proposed Energy Upgrade requirements for Single Family Buildings to the City Council for consideration.

~~19.81.070 Early Compliance.~~

~~Any Energy Report completed after April 1, 2015 which otherwise meets the requirements of this Chapter or is deemed by the Administrator as equivalent shall be considered to be an Energy Report for the first compliance period. (Ord. 7397-NS § 5 (part), 2015)~~

19.81.080 Incentives.

The Administrator may establish rules and regulations to encourage participatione in local, regional and statewide incentive programs and to otherwise incent property owners to pursue early compliance and/or achieve a high performance exemption. (Ord. 7397-NS § 5 (part), 2015)

19.81.090 Exceptions, Deferrals and Extensions.

A. High Performance Exemption. Exemptions from the Energy Report requirements for current reporting periods may be granted for buildings that demonstrate effective and reasonably achievable level of efficiency, electrification of building systems and appliances, and/or emissions reduction, based on the specific building type, use, vintage, and condition, that supports Berkeley's commitment to become a Fossil Fuel Free City and the Berkeley Climate Action Plan (CAP) goal of 33% energy-related greenhouse gas reduction from 2000 levels by 2020 and 80% reduction by 2050. Qualified exemptions shall include, but are not limited to:

1. Any building that receives a Building Energy Score or Green Building Rating that demonstrates an effective and reasonable level of efficiency, as determined by the Administrator.

2. Any building that completes a multi-measure energy improvement project with a verified minimum improvement, as determined by Administrator.

3. Any whole building that has been served by an income-qualified Weatherization Assistance program for low-income households.

4. Any new building or Extensive Renovation with a construction completion date within ten years of the reporting deadline.

5. Any building that has electrified all building systems and appliances.

B. Deferral at Time of Real Estate Listing~~Sale~~. The requirements for compliance prior to the Real Estate Listing of a building~~Sale~~ may be deferred from the seller to the buyer, and any subsequent buyers, for a period of 6 months after the original sale date. A request to defer responsibility to the buyer must be submitted to the administrator prior to the listing of the building. The deferral shall include information on the fuel source for each end use in the building and electrification requirements and incentives. ~~when the buyer and any subsequent buyers consent to comply with the requirements within 12 6 months of the original sale date. with an application for deferral to the Administrator prior to execution of contract of sale.~~

C. Distressed Sale Extension. A ~~12~~6-month extension may be granted to a buyer of a building purchased from a lender following default or transfer by deed in lieu of foreclosure.

D. Hardship Deferral. The requirement for an ENERGY STAR Performance Report and the requirement for an Energy Report may be deferred for up to one reporting cycle in cases of financial hardship where one of the following is provided by the Building Owner and approved by the Administrator:

1. Proof of participation in an energy assistance income qualified program, administered through the State of California or the local energy utility.

2. Proof of approved participation in Property Tax Postponement or Property Tax Assistance for Senior Citizens, Blind or Disabled, or equivalent program as determined by Administrator.

3. Proof that the property qualifies for sale at public auction or acquisition by a public agency due to arrears for property taxes, within two years prior to the due date of the Energy Report.

4. Proof that a court appointed receiver is in control of the asset due to financial distress.

5. Proof that the senior mortgage is subject to a notice of default.

6. Proof that the responsible party is otherwise not able to meet the obligations of this Chapter.

Deferrals under this Section are granted to the Building Owner and are not transferrable with a building Sale, at which time compliance with this Chapter shall be required.

E. Data Unavailable. An exemption from ENERGY STAR Performance Report requirement for any current reporting period may be granted if:

1. The Building Owner demonstrates to the Administrator that they have been unable to obtain tenant authorization to obtain tenant utility data, despite a good faith effort to obtain such consent, or

2. The building occupant demonstrates to the Administrator that such disclosure may result in the release of proprietary information which can be characterized as a trade secret.

3. Any person subject to the requirements of this Chapter demonstrates to the Administrator that submission of an ENERGY STAR Performance Report would conflict with the requirements of State or Federal law

F. Deferral for Planned Demolition or Extensive Renovation. The requirements of this Chapter may be deferred for 24 months if the owner or buyer has obtained a Building Permit, Demolition Permit, or Permit under the Zoning Ordinance that includes demolition or Extensive Renovation of the subject building.

Deferrals under this ~~subdivision~~ Section are granted to the Building Owner and are not transferrable with a building Sale, at which time compliance with this Chapter shall be required.

G. Exemption for Sale of a Condominium. The requirements to submit an Energy Report with an Energy Benchmark to the Administrator shall not apply to any sale of a residential or commercial condominium that is a unit within a building and not a detached structure.

H. Low Energy Use Deferral. Buildings with low energy use based on energy billing data comparing a building to similar efficient buildings or because of operations specific to their building use, such as institutions that operate less than three days a week, may be granted a Low Energy Use deferral for the current compliance cycle.

Deferrals under this ~~subdivision~~ Section are granted to the Building Owner and are not transferrable with a building Sale, at which time compliance with this Chapter shall be required.

I. Exemption for Long-Term Tenancy under Rent Control. The requirements of this Chapter for any building which is subject to rent control in which all of the units, excluding any owner-occupied units, have leases that date prior to January 1, 1999 may be deferred until the next reporting period.

J. Unconditioned Floor Area Reclassification. The size classification of a building may be reduced by the Administrator to exclude physically separated floor area that is not served by heating, ventilation or cooling equipment.

~~K. Phase-In.~~

~~1. Through December 1, 2015, compliance required pursuant to a Sale may be satisfied through compliance with the requirements specified under the prior residential and commercial energy conservations ordinances, Chapters 19.16 and 19.72 of the Berkeley Municipal Code.~~

~~2. Any buyer who, prior to June 1, 2015, has filed an acceptance of compliance responsibility pursuant to Berkeley Municipal Code 19.16.080 Section A. 3 or 19.72.120 Section B, has the option of complying either with the requirements in effect at the time of filing or the requirements of this Chapter.~~

~~L~~K. ~~Small Building~~ Exemption based on building size. Buildings 600 square feet or a higher size threshold, as determined by the Administrator,~~less~~ are exempt from the requirements of this Chapter. (Ord. 7477-NS § 3, 2016; Ord. 7397-NS § 5 (part), 2015)

19.81.100 Responsibilities.

A. It shall be the responsibility of sellers, buyers, owners, real estate agents and brokers, property managers, title companies, non-residential tenants, Registered Service Providers and energy service providers to comply with the requirements of this Chapter.

B. The seller of any real property and the licensed real estate agent or broker handling a sale of real property shall be jointly responsible for disclosing to the prospective buyer the compliance status of the real property in question. (Ord. 7397-NS § 5 (part), 2015)

19.81.110 Administration and Enforcement.

The Administrator may adopt reasonable rules and regulations implementing the provisions and intent of this Chapter before the operative date of this Chapter and may amend these rules and regulations as needed. All rules and regulations adopted by the Administrator shall be posted on the City of Berkeley website. (Ord. 7397-NS § 5 (part), 2015)

19.81.120 Fees.

The City Council may set fees, by resolution, for the administration of this Chapter. (Ord. 7397-NS § 5 (part), 2015)

19.81.130 Enforcement.

The Administrator may ~~shall~~ issue a written Notice of Violation to any building owner determined to be in violation of any provision of this Chapter. In the event a building owner fails to file an ENERGY STAR Performance Report within 30 days after the scheduled deadline or an Energy Report within 90 days after the scheduled deadline, the Administrator shall indicate the building's compliance status via the publicly accessible electronic reporting interface. (Ord. 7397-NS § 5 (part), 2015)

19.81.140 Violation--Penalty.

Violations of this Chapter, if charged pursuant to Chapter 1.20, shall be charged as infractions. Violations of this Chapter are also punishable pursuant to Chapter 1.28. (Ord. 7397-NS § 5 (part), 2015)

~~19.81.150 Appeals.~~

~~Aggrieved persons may file appeals to the City Manager or their designee. (Ord. 7397-NS § 5 (part), 2015)~~

19.81.160 Severability.

If any word, phrase, sentence, part, section, subsection, or other portion of this Chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the prescribed application thereof, shall be severable, and the remaining provisions of this Chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The City Council hereby declares that it would have passed this title, and each section, subsection, sentence, clause and phrase of this Chapter, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases is declared invalid or unconstitutional. (Ord. 7397-NS § 5 (part), 2015)

~~19.81.170 Chapter Review and Reconsideration.~~

~~The City Council, with advice from the Berkeley Energy Commission, shall, within 3 years of the effective date of this Chapter, evaluate implementation and outcomes and reconsider extending requirements to all Single Family Buildings starting in 2021. Implementation evaluation shall include an analysis of reporting systems and compliance rates, and outcomes evaluation shall analyze the number of energy improvements and amount of energy reduced as a result of this Chapter, and may recommend revisions and/or incentive programs to accelerate improvements to low performing buildings as it considers advisable. The Berkeley Energy Commission shall then report on its evaluation and recommendations to the City Council. (Ord. 7397-NS § 5 (part), 2015)~~

Planning & Development Department
Office of Energy and Sustainable Development

September 9, 2020

To: Facility, Infrastructure, Transportation, Environment and Sustainability (FITES) Policy Committee

From: Jordan Klein, Interim Director, Planning & Development Department
Billi Romain, Manager, Office of Energy and Sustainable Development

Subject: Draft Amendments to the Building Energy Saving Ordinance (BESO)

Attached to this memo are draft amendments to BESO based on recommendations provided in the July 21, 2020 staff report to the City Council. At that meeting, staff's recommendation to update BESO was referred to the FITES Committee. These draft amendments were developed by staff and have been reviewed by the City Attorney's office.

The proposed amendments are designed to align with building electrification and emissions reduction goals, leverage upcoming rebates and incentives, streamline requirements for small and medium-sized buildings, and to allow for the development of energy upgrade requirements that are effective and consistent with State and Federal law. The recommendations to City Council that informed these amendments were unanimously approved by the Berkeley Energy Commission on February 26, 2020.

One of the amendments would shift the compliance requirement to time of listing rather than time of sale, to provide better transparency in the real estate market. Following the Council meeting in July, staff met with several representatives from the Berkeley realtor community to discuss this proposed change to BESO. Realtors expressed concern that this change would impede the process of selling a building in Berkeley and strongly urged that the current deferral process, which allows a seller to defer BESO compliance to the buyer, be maintained. That deferral process is reflected in the current draft language; whether to provide that deferral option warrants consideration and discussion by the Committee and City Council.

Proposed changes to the amended ordinance include:

- Update the purpose and name of BESO to the *Building Emissions Saving Ordinance* to prioritize emissions reductions and resilience to better align with the City's goals.

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- Change the energy assessment compliance due date to time of listing rather than time of sale, while maintaining the deferral option.

- Streamline requirements for small and medium-sized buildings to require energy assessment at time of listing, eliminate assessments every 10 years, and expand requirements for annual benchmarking reporting for medium-sized buildings.

- Shorten existing deferral period to 6 months instead of 12 months to increase utilization of rebate/incentive programs and decrease administrative burdens.

- Convene expert advisory teams to develop energy upgrade requirements for different building types, which leverage rebates, guarantee outcomes, and do not conflict with Federal and State laws.

Comparison of Current and Proposed BESO Requirements

Building Types	Current	Proposed
Homes 1-4 Units	• Energy Efficiency Assessment at time of sale	• **Electrification** assessment **at time of listing** • **Develop energy upgrade requirements for phase-in when additional rebates to off-set costs are identified**
Small Buildings (up to 15k)	• Energy Efficiency Assessments every 10 years	• **Electrification** assessment **at time of listing**
Medium Buildings (15k-25k)	• Energy Efficiency Assessment every 10 years	• **Electrification** assessment **at time of listing** • **Annual Benchmarking**
Large Buildings (25k+)	• Energy Efficiency Assessment every 5 years • Annual benchmarking	• **Electrification** assessment every 5 years • Annual benchmarking • **Develop energy upgrade requirements for phase-in when additional rebates to off-set costs are identified**

*__Bold__ text indicates new requirements.

Attachment: Draft Amendments to the Building Emission Saving Ordinance (BESO)

Chapter 19.81
BUILDING ~~ENERGY~~ EMISSIONS SAVING

Sections:

19.81.010 Purpose.

The purpose of this chapter is to reduce energy use, ~~and~~ water consumption, and greenhouse gas emissions in existing buildings. These efficiency and emission reduction improvements will lower energy and water costs, transition buildings away from the use of fossil fuels, ~~and greenhouse gas emissions citywide~~ and increase comfort, safety and health for building occupants. The provisions of the ordinance will inform decision makers about energy and emissions performance and improvement opportunities. (Ord. 7397-NS § 5 (part), 2015)

19.81.020 Applicability.

The requirements of this Chapter shall apply to all buildings that are located in whole or in part within the City. However, it shall not apply to agencies that are not subject to City authority. (Ord. 7397-NS § 5 (part), 2015)

19.81.030 Definitions.

A. "Administrator" means the Director of Planning and Community Development or their designee.

B. "Building Owner" means the owner of record of a building. In the case of a building held in cooperative or condominium form of ownership, the term "Building Owner" shall refer to the board of managers, board of directors, homeowners association, or other representative body of the jointly-owned building with authority to make decisions about building assessments and alterations.

C. "Building Energy Score" means a measurement of how efficiently a building uses energy and/or water based on modeled simulations or actual energy use of the building over time compared to similar buildings, which can be in the form of a performance score, asset score or other comparable metric that meets standards and formats established by the Administrator.

D. "Energy Report" means a report submitted by a Registered Service Provider that identifies existing conditions, opportunities for water and energy efficiency in a building, opportunities to transition off fossil fuels, greenhouse gas emissions reductions, and available incentives and financing, as well as any applicable Building Energy Score, in accordance with the standards and formats established by the Administrator.

E. "ENERGY STAR Performance Report" means an ENERGY STAR Portfolio Manager Benchmark report generated by the on-line tool developed by the U.S. Environmental Protection Agency that determines energy use intensity and an Energy Star Performance Score for a building based on utility usage data.

F. "Energy Upgrade" means the installation or completion of recommended measure(s) that improve the building's energy efficiency, increases the building's resilience, supports the transition off fossil fuels, or decreases the building's greenhouse gas emissions.

GF. "Extensive Renovation" means any project that replaces all building space heating, cooling, and ventilation equipment and replaces at least half of the building envelope, in accordance to standards established by the Administrator.

HG. "Green Building Rating" means an approved rating by a green building verification system consistent with standards identified by the Energy Efficiency Standardization Coordination Collaborative (EESCC) of the American National Standards Institute (ANSI), including, but not limited to the following: Build It Green (BIG) GreenPoint Rated Existing Building; US Green Building Council Leadership in Energy and Environmental Design Existing Building Operation and Maintenance (USGBC LEED-EBOM); Passive House Institute (PHI) Certified Passive House and EnerPHit; Passive House Institute US (PHIUS) PHIUS+ Certified Project; and the

International Living Future Institute Zero Net Energy Building and Living Building Challenge Certification; or any other rating demonstrating approved levels of energy efficiency, as determined by the Administrator.

IH. "Gross Floor Area" means the total size, as measured between the principal exterior surfaces of the enclosed fixed walls of the building(s). This includes all areas inside the building(s) such as: occupied tenant areas, common areas, meeting areas, break rooms, restrooms, elevator shafts, mechanical equipment areas, and storage rooms. Gross Floor Area should not include interstitial plenum space between floors, which may house pipes and ventilation.

JI. "Large Building" means any building with 25,000 square feet or more of Gross Floor Area.

K. "Medium Building" means any building with between 15,000 and 24,999 square feet of Gross Floor Area, excluding Single Family Buildings.

L. "Real Estate Listing" means any listing of a building for sale in the City of Berkeley. "Real Estate Listings" include listing a building for sale by a property owner or by a licensed agent. "Real Estate Listings" include any listing for sale by any advertisement, internet posting, or publicly displayed sign.

KLM. "Registered Service Provider" means an entity that has been registered by the Administrator to provide an Energy Report and/or Building Energy Score as required by this ordinance.

LMN. "Sale" means the conveyance of title to real property as a result of the execution of a real property sales contract as defined in Section 2985 of the California Civil Code as well as any change of ownership described in subdivision (c) of Section 61 and subdivision (c) of Section 64 of the California Revenue and Taxation Code. "Sale" does not include transfer of title pursuant to inheritance, involuntary transfer of title resulting from default on an obligation secured by real property, change of title pursuant to marriage or divorce, condemnation, or any other involuntary change of title affected by operation of law.

MNO. "Single Family Building" means any building comprised solely of 1 to 4 residential units, regardless of size.

NOP. "Small Building" means any building with less than 15,000 square feet of Gross Floor Area, excluding Single Family Buildings. (Ord. 7397-NS § 5 (part), 2015)

19.81.040 Large Buildings.

A. Annual ENERGY STAR Performance Report

Owners of Large Buildings shall submit to the Administrator an ENERGY STAR Performance Report on an annual basis in accordance with the phase-in schedule below and no later than July 1 each year thereafter.

B. Energy Report

Owners of Large Buildings shall have a Registered Service Provider prepare and submit to the Administrator an Energy Report as specified in the phase-in schedule below and by July 1 every five years thereafter.

C. Disclosure

The most recent ENERGY STAR Performance Report and a summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees and to prospective lessees and buyers prior to execution of a lease or contract for sale.

D. Phase-in and Reporting Cycle Schedule

Owners of Large Buildings shall be in compliance with the requirements of this section by the dates specified below.

1. July 1, 2018 for buildings with 50,000 or more square feet of Gross Floor Area, with an annual ENERGY STAR Performance Reporting cycle and a 5 year Energy Report reporting cycle thereafter.

2. July 1, 2019 for buildings with 25,000 or more square feet of Gross Floor Area with an annual ENERGY STAR Performance Reporting cycle and a 5 year Energy Report reporting cycle thereafter.

(Ord. 7477-NS § 1, 2016: Ord. 7397-NS § 5 (part), 2015)

E. Evaluate and Recommend Energy Upgrades Requirements

The Administrator of this Chapter shall develop recommendations for Energy Upgrade requirements for Large Buildings based on building performance that are consistent with requirements of State and Federal law. The Administrator shall identify incentives, rebates or other compliance resources to off-set the costs of the Energy Upgrade requirements. The Administrator shall then report the proposed Energy Upgrade requirements for Large Buildings to the City Council for consideration.

19.81.050 Medium and Small Buildings.

A. Annual ENERGY STAR Performance Report

Owners of Medium Buildings shall submit to the Administrator an ENERGY STAR Performance Report on an annual basis as of July, 1 2021, and no later than July 1 each year thereafter.

~~A~~B. Energy Report

Owners of Medium and Small Buildings shall have a Registered Service Provider prepare and submit to the Administrator an Energy Report ~~upon the earlier of~~:

1. Prior to the Real Estate Listing of the building for Sale~~Time of building Sale~~; or

2. Within ~~12~~ 6 months of a lender having acquired title due to foreclosure or deed in lieu of foreclosure~~; or~~

~~3. The phase-in dates and reporting cycle provided in the schedule below.~~

The requirement at time of Real Estate Listing~~Sale~~ may be transferred to the buyer and deferred for ~~12~~ 6 months under the provisions of Section 19.81.090.B of this Chapter.

~~B~~C. Disclosure

The most recent ENERGY STAR Performance Report, if applicable, and a summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees and prospective lessees, to all licensed real estate agents working on the seller's behalf, and to prospective buyers who visit the building while it is listed publicly for sale.

~~A summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees and to prospective lessees and buyers prior to execution of a lease or contract for sale.~~

D. Evaluate and Recommend Energy Upgrades Requirements

The Administrator of this Chapter shall develop recommendations for Energy Upgrade requirements for Small and Medium Buildings based on building performance that are consistent with State and Federal law. The Administrator shall identify incentives, rebates or other compliance resources to off-set the costs of the Energy Upgrade requirements. The Administrator shall then report the proposed Energy Upgrade requirements for Small and Medium Buildings to the City Council for consideration.

~~C. Phase-in and Reporting Cycle Schedule~~

~~Effective December 1, 2015, owners of Medium Buildings and Small Buildings shall be in compliance with the requirements of this section at time of building Sale or within 12 months when a lender acquires title, or by the dates specified below, whichever comes first. The requirement at Sale may be transferred to the buyer and deferred for 12 months under the provisions of Section 19.81.090.B of this Chapter.~~

~~1. By July 1, 2020 for Medium Buildings with 15,000 or more square feet of Gross Floor Area, and on a 10 year reporting cycle thereafter.~~

~~2. By July 1, 2021 for Medium Buildings with 5,000 or more square feet of Gross Floor Area, and on a 10 year reporting cycle thereafter.~~

~~3. By July 1, 2022 for Small Buildings with less than 5,000 square feet, and on a 10 year reporting cycle thereafter. (Ord. 7477-NS § 2, 2016; Ord. 7397-NS § 5 (part), 2015)~~

19.81.060 Single Family Buildings

A. Energy Report

Owners of Single Family Buildings shall have a Registered Service Provider prepare and submit to the Administrator an Energy Report ~~at~~:

1. ~~Time of building Sale~~Prior to the Real Estate Listing of the building for Sale; or

2. Within ~~12~~ 6 months of a lender having acquired title due to foreclosure or deed in lieu of foreclosure.

The requirement at ~~Sale~~time of Real Estate ~~-~~Listing may be transferred to the buyer and deferred for ~~12~~ 6 months under the provisions of Section 19.81.090.B of this Chapter.

B. Disclosure

A summary version of the most recent Energy Report including a Building Energy Score, when available, shall be made publicly available by the Administrator and shall be provided by the Building Owner to existing lessees

and ~~to~~ prospective lessees, to all licensed real estate agents working on the seller's behalf, and to prospective buyers ~~prior to execution of a lease or contract for sale~~who visit the building while it is listed for sale.

C. Reporting Schedule

The requirements of this Section of the ordinance shall become effective December 1, 2015. (Ord. 7397-NS § 5 (part), 2015)

D. Evaluate and Recommend Energy Upgrades Requirements

The Administrator of this Chapter shall develop recommendations for Energy Upgrade requirements for Single Family Buildings based on building performance that are consistent with requirements of State and Federal law. The Administrator shall identify incentives, rebates or other compliance resources to off-set the costs of the Energy Upgrade requirements. The Administrator shall then report the proposed Energy Upgrade requirements for Single Family Buildings to the City Council for consideration.

~~19.81.070 Early Compliance.~~

~~Any Energy Report completed after April 1, 2015 which otherwise meets the requirements of this Chapter or is deemed by the Administrator as equivalent shall be considered to be an Energy Report for the first compliance period. (Ord. 7397-NS § 5 (part), 2015)~~

19.81.080 Incentives.

The Administrator may establish rules and regulations to encourage participatione ~~in~~ in local, regional and statewide incentive programs and to otherwise incent property owners to pursue early compliance and/or achieve a high performance exemption. (Ord. 7397-NS § 5 (part), 2015)

19.81.090 Exceptions, Deferrals and Extensions.

A. High Performance Exemption. Exemptions from the Energy Report requirements for current reporting periods may be granted for buildings that demonstrate effective and reasonably achievable level of efficiency and/or emissions reduction, based on the specific building type, use, vintage, and condition, that supports Berkeley's commitment to become a Fossil Fuel Free City and the Berkeley Climate Action Plan (CAP) goal of 33% energy-related greenhouse gas reduction from 2000 levels by 2020 and 80% reduction by 2050. Qualified exemptions shall include, but are not limited to:

1. Any building that receives a Building Energy Score or Green Building Rating that demonstrates an effective and reasonable level of efficiency, as determined by the Administrator.

2. Any building that completes a multi-measure energy improvement project with a verified minimum improvement, as determined by Administrator.

3. Any whole building that has been served by an income-qualified Weatherization Assistance program for low-income households.

4. Any new building or Extensive Renovation with a construction completion date within ten years of the reporting deadline.

B. Deferral at Time of Real Estate Listing~~Sale~~. The requirements for compliance prior to the Real Estate Listing~~Sale~~ of the building may be deferred from the seller to the buyer, and any subsequent buyers, when the buyer and any subsequent buyers consent to comply with the requirements within ~~12~~ 6 months of the original sale date with an application for deferral to the Administrator prior to ~~execution of contract of sale~~the listing of the building.

C. Distressed Sale Extension. A ~~12~~6 month extension may be granted to a buyer of a building purchased from a lender following default or transfer by deed in lieu of foreclosure.

D. Hardship Deferral. The requirement for an ENERGY STAR Performance Report and the requirement for an Energy Report may be deferred for up to one reporting cycle in cases of financial hardship where one of the following is provided by the Building Owner and approved by the Administrator:

1. Proof of participation in an energy assistance income qualified program, administered through the State of California or the local energy utility.

2. Proof of approved participation in Property Tax Postponement or Property Tax Assistance for Senior Citizens, Blind or Disabled, or equivalent program as determined by Administrator.

3. Proof that the property qualifies for sale at public auction or acquisition by a public agency due to arrears for property taxes, within two years prior to the due date of the Energy Report.

4. Proof that a court appointed receiver is in control of the asset due to financial distress.

5. Proof that the senior mortgage is subject to a notice of default.

6. Proof that the responsible party is otherwise not able to meet the obligations of this Chapter.

Deferrals under this Section are granted to the Building Owner and are not transferrable with a building Sale, at which time compliance with this Chapter shall be required.

E. Data Unavailable. An exemption from ENERGY STAR Performance Report requirement for any current reporting period may be granted if:

1. The Building Owner demonstrates to the Administrator that they have been unable to obtain tenant authorization to obtain tenant utility data, despite a good faith effort to obtain such consent, or

2. The building occupant demonstrates to the Administrator that such disclosure may result in the release of proprietary information which can be characterized as a trade secret.

3. Any person subject to the requirements of this Chapter demonstrates to the Administrator that submission of an ENERGY STAR Performance Report would conflict with the requirements of State or Federal law.

F. Deferral for Planned Demolition or Extensive Renovation. The requirements of this Chapter may be deferred for 24 months if the owner or buyer has obtained a Building Permit, Demolition Permit, or Permit under the Zoning Ordinance that includes demolition or Extensive Renovation of the subject building.

Deferrals under this Section~~subdivision~~ are granted to the Building Owner and are not transferrable with a building Sale, at which time compliance with this Chapter shall be required.

G. Exemption for Sale of a Condominium. The requirements to submit an Energy Report with an Energy Benchmark to the Administrator shall not apply to any sale of a residential or commercial condominium that is a unit within a building and not a detached structure.

H. Low Energy Use Deferral. Buildings with low energy use based on energy billing data comparing a building to similar efficient buildings or because of operations specific to their building use, such as institutions that operate less than three days a week, may be granted a Low Energy Use deferral for the current compliance cycle.

Deferrals under this Section~~subdivision~~ are granted to the Building Owner and are not transferrable with a building Sale, at which time compliance with this Chapter shall be required.

I. Exemption for Long-Term Tenancy under Rent Control. The requirements of this Chapter for any building which is subject to rent control in which all of the units, excluding any owner-occupied units, have leases that date prior to January 1, 1999, may be deferred until the next reporting period.

J. Unconditioned Floor Area Reclassification. The size classification of a building may be reduced by the Administrator to exclude physically separated floor area that is not served by heating, ventilation or cooling equipment.

~~K. Phase-In.~~

~~1. Through December 1, 2015, compliance required pursuant to a Sale may be satisfied through compliance with the requirements specified under the prior residential and commercial energy conservations ordinances, Chapters 19.16 and 19.72 of the Berkeley Municipal Code.~~

~~2. Any buyer who, prior to June 1, 2015, has filed an acceptance of compliance responsibility pursuant to Berkeley Municipal Code 19.16.080 Section A. 3 or 19.72.120 Section B, has the option of complying either with the requirements in effect at the time of filing or the requirements of this Chapter.~~

~~L~~K. ~~Small Building~~ Exemption based on building size. Buildings 600 square feet or a higher size threshold, as determined by the Administrator, are ~~less are~~ exempt from the requirements of this Chapter. (Ord. 7477-NS § 3, 2016; Ord. 7397-NS § 5 (part), 2015)

19.81.100 Responsibilities.

A. It shall be the responsibility of sellers, buyers, owners, real estate agents and brokers, property managers, title companies, non-residential tenants, Registered Service Providers and energy service providers to comply with the requirements of this Chapter.

B. The seller of any real property and the licensed real estate agent or broker handling a sale of real property shall be jointly responsible for disclosing to the prospective buyer the compliance status of the real property in question. (Ord. 7397-NS § 5 (part), 2015)

19.81.110 Administration and Enforcement.

The Administrator may adopt reasonable rules and regulations implementing the provisions and intent of this Chapter before the operative date of this Chapter and may amend these rules and regulations as needed. All rules and regulations adopted by the Administrator shall be posted on the City of Berkeley website. (Ord. 7397-NS § 5 (part), 2015)

19.81.120 Fees.

The City Council may set fees, by resolution, for the administration of this Chapter. (Ord. 7397-NS § 5 (part), 2015)

19.81.130 Enforcement.

The Administrator ~~shall~~ may issue a written Notice of Violation to any building owner determined to be in violation of any provision of this Chapter. In the event a building owner fails to file an ENERGY STAR Performance Report within 30 days after the scheduled deadline or an Energy Report within 90 days after the scheduled deadline, the Administrator shall indicate the building's compliance status via the publicly accessible electronic reporting interface. (Ord. 7397-NS § 5 (part), 2015)

19.81.140 Violation--Penalty.

Violations of this Chapter, if charged pursuant to Chapter 1.20, shall be charged as infractions. Violations of this Chapter are also punishable pursuant to Chapter 1.28. (Ord. 7397-NS § 5 (part), 2015)

~~19.81.150 Appeals.~~

~~Aggrieved persons may file appeals to the City Manager or their designee. (Ord. 7397-NS § 5 (part), 2015)~~

19.81.160 Severability.

If any word, phrase, sentence, part, section, subsection, or other portion of this Chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the prescribed application thereof, shall be severable, and the remaining provisions of this Chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The City Council hereby declares that it would have passed this title, and each section, subsection, sentence, clause and phrase of this Chapter, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases is declared invalid or unconstitutional. (Ord. 7397-NS § 5 (part), 2015)

~~19.81.170 Chapter Review and Reconsideration.~~

~~The City Council, with advice from the Berkeley Energy Commission, shall, within 3 years of the effective date of this Chapter, evaluate implementation and outcomes and reconsider extending requirements to all Single Family Buildings starting in 2021. Implementation evaluation shall include an analysis of reporting systems and compliance rates, and outcomes evaluation shall analyze the number of energy improvements and amount of energy reduced as a result of this Chapter, and may recommend revisions and/or incentive programs to~~

~~accelerate improvements to low performing buildings as it considers advisable. The Berkeley Energy Commission shall then report on its evaluation and recommendations to the City Council. (Ord. 7397-NS § 5 (part), 2015)~~

Office of the City Manager

CONSENT CALENDAR
July 21, 2020

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: Evaluation and Recommended Updates to the Building Energy Savings Ordinance (BESO)

RECOMMENDATION

Refer to City Manager to amend the Building Energy Saving Ordinance (BESO), Chapter 19.81.170 of the Berkeley Municipal Code, to align with building electrification goals, leverage upcoming rebates and incentives, and develop mandatory energy requirements to be phased in.

SUMMARY

BESO is a City of Berkeley ordinance that requires building owners to complete and publicly report building-specific energy efficiency assessments and energy scores. The goal of BESO is to reduce both energy costs and greenhouse gas emissions in Berkeley's existing buildings. BESO uses energy data transparency to allow owners to better manage energy use and encourage investments in energy efficiency upgrades. BESO currently requires that large buildings benchmark energy use annually and conduct an assessment or upgrade every five years. Medium and small buildings must assess or upgrade every 10 years, and single family homes must do so at time of sale, or within one year after sale.

This report provides recommendations informed by the BESO Evaluation Report, by multiple meetings with technical advisors and other stakeholders, and by input from the Berkeley Energy Commission. It balances the urgency of the climate crisis with the economic reality created by COVID-19. In order to accelerate energy efficiency, resilience, and electrification upgrades in homes and buildings, staff propose to return to City Council with an amendment to the ordinance to make BESO better align with building electrification goals, leverage upcoming rebates and incentives, and require the development of mandatory building energy improvements to be phased-in when additional resources to off-set costs for mandatory improvements are available.

The proposed amendment to BESO would be implemented in a phased approach, requiring the development of mandatory energy improvements that would be developed with a stakeholder process. This will allow for a thorough analysis of cost impacts, impacts to equity, and numerous other intended and unintended impacts. If this

recommendation is adopted, staff will develop mandatory measures for Council consideration in the future.

FISCAL IMPACTS OF RECOMMENDATION

There are no direct fiscal impacts to amending BESO to align with electrification goals, leverage rebates and develop mandatory energy requirements. However, there may be fiscal impacts to building owners, subject to BESO, when mandatory energy requirements are phased in. Staff will return to City Council an analysis of costs and benefits to the City and to Berkeley property owners at that time.

CURRENT SITUATION AND ITS EFFECTS

BESO is a City of Berkeley ordinance (No. 7397-NS, Berkeley Municipal Code Chapter 19.81.170) that requires building owners to complete and publicly report energy efficiency assessments and energy scores. When the Berkeley City Council adopted BESO, it required a program evaluation three years after implementation to assess the process and outcomes. The BESO Evaluation Report was conducted by Energy Solutions, an energy consulting firm that designs, implements and evaluates energy programs. This staff report provides recommendations to update BESO informed by this report, and by multiple meetings with technical advisors and other stakeholders, and input from the Berkeley Energy Commission. Since the outreach, meetings, and BESO Evaluation Report were completed prior to the COVID-19 pandemic, staff has also balanced these recommendations with the increased importance of healthy indoor air quality as well as economic and budgetary considerations, to ensure that BESO updates are in-line with a thoughtful and resilient recovery.

BESO Evaluation Report

The BESO Evaluation Report was completed by consultants at Energy Solutions in February 2020. It assessed whether BESO is meeting its goals of being easy, affordable and valuable. As applied to BESO, these goals are 1) ***easy*** administrative procedures for compliance, 2) ***affordable*** requirements that leverage rebates and do not create an undue financial burden, and 3) ***valuable*** outcomes that provide benefits to building owners as well as reductions in greenhouse gas emissions. The evaluation analyzed current program administrative process and data on outcomes as well as actively engaged with key stakeholders, including participants, community partners, the real estate community, the Berkeley Energy Commission, and energy assessors. The evaluation highlighted BESO's need to make improvements to:

- Align with Berkeley's electrification and community resilience's goals
- Leverage the proposed expanded Transfer Tax Rebate Program to incentivize upgrades
- Increase the number of energy upgrades that result from the energy assessment recommendations and improve tracking
- Streamline BESO administrative processes for both staff and the public.

The full report, findings and recommendations are provided in Attachment 1.

Expert Technical Advisory Meetings
Staff had multiple meetings with technical advisors and energy experts and convened technical advisory meetings in late 2019 and early 2020. These included an advisory group with representatives from Natural Resources Defense Council (NRDC), East Bay Community Energy (EBCE), equity partners representing low-income communities, the Berkeley Lab, Bay Area Regional Energy Network (BayREN), architects, contractors, energy efficiency program implementers, and the California Public Utilities Commission (CPUC). These experts weighed in on the opportunities and challenges for updating BESO to add mandatory energy upgrade requirements in addition to the currently required energy assessments. Ultimately, the technical advisory group expressed a favorable recommendation for developing mandatory requirements contingent on whether there could be sufficient rebates to lower costs. Given the rapidly evolving electric heat pump technology and upcoming rebate programs under development, there was consensus that more time was needed to determine the appropriate measures.

Berkeley Energy Commission
The Berkeley Energy Commission developed a sub-committee for the BESO evaluation and updates. They met to review the BESO Evaluation Report and provide comments to staff. On February 26, 2020 the Energy Commission voted unanimously to support staff recommendations for the proposed amendments to BESO. Motion/Second to approve the proposed amendments to BESO (Bell, O'Hare). The motion carried 6-0-0-3 (Ayes: Zuckerman, Bell, Weems Paulos, Stromberg, O'Hare. Noes: None. Abstain: None. Absent: Schlachter Leger, Gil). The Commission reiterated its support for staff recommendations for a phased approach to the proposed development of mandatory upgrade requirements, in order to keep up with changes in technology, upcoming rebates, and equity considerations. In addition, the Commission recommended review of new requirements on a regular basis in light of rapidly evolving technology and changing rebates. It also suggested the inclusion of utility bill information in the energy assessments, which will be considered as part of the assessment improvement.

With BESO, Berkeley has become a leader in the home energy assessment and building labeling sphere, with cities across the nation replicating aspects of BESO in their own communities. BESO has been successful at providing data on the energy use and energy efficiency opportunities of Berkeley's existing buildings. This data is being used to inform the *Existing Building Electrification Strategy* study currently in development and scheduled for completion early 2020. The Strategy is identifying a suite of long and short-term policies to equitably transition all of Berkeley's existing buildings from fossil fuels to clean electricity. The current BESO policy allows large

building owners to access energy use trend data to help manage energy use and comply with California State law. Although there are anecdotal reports of time of sale energy assessments leading to participation in energy upgrade incentive programs, data on exact numbers of participants is not available due to utility program privacy rules.

The BESO program has also faced some challenges. Since its original development, the City's priority has shifted beyond energy efficiency, to include electrification, in response to the Climate Emergency and Fossil Fuel Free goals. Implementation has been constrained by the manual compliance system that consumes much of staff's time and does not provide publicly available building energy data to encourage energy efficiency investments. Staff is currently focused on improving compliance rates for medium and large buildings and launching an on-line application and payment portal for time of sale transactions. An additional challenge has been the inability to measure and track energy upgrade outcomes due to rules that restrict access to utility rebate program participation.

Proposed BESO Update

Staff recommends developing an amendment to BESO to bring to a future Council meeting with these proposed updates:

- Integrate electrification and resilience into the energy assessments to better align with the City's goals.
- Develop new rebates when timing is appropriate and coordinate with state and regional programs to maximize available incentives to reduce costs and encourage energy efficiency and electrification upgrades.
- For all buildings that are being sold, change the energy assessment compliance due date to time of listing, rather than time of sale, and encourage inclusion of the energy report on the Multiple Listing Service (MLS) to provide transparency in the sale process and to serve as a market influence.
- Improve City systems for BESO compliance and online payment of BESO fees for better tracking and improved customer service.
- Expand annual benchmarking reporting requirements to medium-sized buildings and streamline energy assessment requirements for small and medium-sized buildings to time of listing.
- Convene expert advisory teams to develop mandatory requirements for homes (1-4 units) and large buildings (over 25,000 sqft) that leverage rebates and guarantee outcomes.

Table 1 compares the current ordinance and the proposed changes:

Table 1 Current and Proposed BESO Requirements

Building Types	Current	Proposed
Homes 1-4 Units	• Energy Efficiency Assessment at time of sale	• **Electrification** assessment **at time of listing** • **Develop mandatory requirements for phase-in when additional rebates to off-set costs are identified**
Small Buildings (up to 15k)	• Energy Efficiency Assessments every 10 years	• **Electrification** assessment **at time of listing**
Medium Buildings (15k-25k)	• Energy Efficiency Assessment every 10 years	• **Electrification** assessment **at time of listing** • **Annual Benchmarking**
Large Buildings (25k+)	• Energy Efficiency Assessment every 5 years • Annual benchmarking	• **Electrification** assessment every 5 years • Annual benchmarking • **Develop mandatory requirements for phase-in when additional rebates to off-set costs are identified**

*__Bold__ text indicates new requirements.

Developing Mandatory Energy Requirements for Phase-In

While there is agreement on the need to strengthen BESO to catalyze action in light of the climate emergency, there is not yet consensus on what building retrofit requirements would be most cost-effective for different existing building types. Staff proposes to develop mandatory requirements in consultation with experts for homes, large commercial, multifamily and mixed-use buildings. Once mandatory requirements are defined and rebates or other compliance resources to off-set costs are identified, the requirements will be brought to City Council for final approval.

A phased approach to updating the BESO program will both provide significant improvements in the promotion of building electrification in the short-term, and create a pathway to mandatory improvements, encouraging early adoption and investments in electrification. Consultation with expert advisors will allow a thorough analysis of cost impacts, evolving technology, potential impacts from refrigerants, electrical infrastructure needs, workforce capacity, changing incentives, impacts to equity and other unintended consequences. Building electrification technology is rapidly evolving, especially for the existing building retrofit market where steps to electrify differ based on building vintage and existing condition.

The integration of building electrification into the current energy efficiency assessments will require updates to the assessments, assessor training, the development of rebates

and alignment with other incentive programs. Staff has been collaborating with the local Home Energy Score partners to integrate electrification into the assessment and recommendations for single family homes, Development of electrification assessment tools for commercial and multifamily buildings requires additional research and collaboration, as well as the identification of incentives to off-set compliance costs.

Given the projected economic set-backs of COVID-19, staff will provide an analysis of financial impacts to Berkeley businesses, housing market and greater community of any proposed mandatory requirements proposed in Phase 2. The timing for the implementation of these requirements is dependent on the completion of Phase 1 training of assessors, identifying incentives to off-set compliance costs, and the development of mandatory requirements. The process for Phase 2 does not have a designated timeline. Rather, this approach will allow for thoughtful development of requirements that are effective, equitable, and do not further limit access to housing in a tight market, while sending a clear signal to the market that investments in electrification are encouraged and valuable.

Proposed Phases for BESO Update: Electrification with Mandatory Requirement Development

1. **Commercial/Residential 15,000 sqft and above** (Approx. 800 buildings)

   Phase 1 – Prioritize electrification and align with rebates
   - Phase-in benchmarking requirements for 300 additional medium-sized buildings (15,000 to 25,000 square feet).
   - Update energy efficiency assessment tools to prioritize electrification and include electrification recommendations.
   - Train assessors in electrification best practices for commercial, multifamily and mixed-use buildings.
   - Work with utility partners, regional entities, and the State to help create and promote electrification incentive programs to reduce compliance costs for building owners.

   Phase 2 – Develop and implement mandatory energy requirements that leverage incentives for buildings 25,000 sqft and above
   - Identify appropriate exemptions and exceptions to encourage early adaptors and advance equity.
   - Develop mandatory energy requirements through a participatory stake holder process for consideration by City Council.
   - Promote electrification incentive programs to offset compliance costs.

2. **Buildings being Sold** (Approx. 900 buildings per year)

Phase 1 – Require at listing, prioritize electrification and align with rebates

- Update compliance trigger to Time of Listing as opposed to Time of Sale using BayREN's newly created Home Energy Score assessment registry.
- Integrate assessment with MLS to inform the sales process.
- Update the Home Energy Score assessment to include electrification recommendations.
- Train energy efficiency assessors on electrification best practices.
- Promote new electrification rebates to encourage new buyers to invest in electrification.
- Create upgrade tracking and proposed rebate processing system, leverage all available electrification incentives.

Phase 2 – Develop and implement mandatory energy requirements that leverage incentives

- Continue to expand strategic electrification outreach and education.
- Identify and address equity impacts that may further limit access to home purchases in Berkeley.
- Update assessment to identify mandatory measures.
- Develop workforce capacity and equipment supply chain availability.
- Develop mandatory energy requirements for homes with inclusive stakeholder process for Council consideration.
- Implement mandatory requirements that leverage rebates and incentives.

The Phase 1 expansion of assessments to include electrification and training of assessors is already underway for single family homes and could be implemented fairly quickly. The development of electrification assessments and retrofit recommendations for commercial and multifamily buildings will require additional research and vetting with stakeholders. The timing of Phase 2 will be dependent the participatory stakeholder process and on the availability of electrification incentives and financing to offset implementation costs.

Amending BESO to align with electrification and resilience goals, leverage upcoming rebates and incentives, and develop mandatory requirements for phase-in advances a number of Strategic Plan priorities, including creating a resilient, safe, connected, and prepared city, and being a global leader in addressing climate change, advancing environmental justice, and protecting the environment.

BACKGROUND

On March 10, 2015 the Berkeley City Council adopted BMC Chapter 19.81 – the Building Energy Savings Ordinance, with the goal of accelerating energy savings in Berkeley's existing buildings. BESO is a Strategic Plan Priority Project. It advances the

City's goal of being a global leader in addressing climate change, advancing environmental justice, and protecting the environment.

When BESO was adopted, it replaced the Residential and Commercial Energy Conservation Ordinances (RECO and CECO), which required building owners to install a prescribed list of minimum energy and water saving measures at the point of sale or during significant remodels. RECO/CECO needed to be updated, as the prescriptive measures at that time did not meet the criteria of being easy, affordable and valuable. The manual compliance system was cumbersome and did not provide acceptable customer service. The required minimum measures were not affordable, as they did not align with rate-payer funded incentive programs. Finally, the list of measures was not valuable because it did not meet climate action emissions reductions targets and was out of date with building science and code requirements.

The development of BESO was conducted with a multi-year, consensus-based community engagement process that included homeowners, residents, realtors, energy professionals, and the Berkeley Energy Commission. The approach of BESO is to assess each building and determine the best strategy to reduce emissions and energy costs and make that data publicly available to encourage upgrades and inform policy development. BESO currently is required prior to sale of a house or building under 25,000 square feet, and on a phased-in schedule for large multifamily and commercial buildings. The assessments are conducted by registered energy assessors who provide building-specific recommendations on how to save energy and link building owners to incentive programs for energy efficiency upgrades; however, BESO does not currently mandate that any of the recommended upgrades be completed. Information from the building assessments, including energy efficiency scores, has been incorporated into the Berkeley Community GIS Portal, providing transparent access to building energy data.

ENVIRONMENTAL SUSTAINABILITY

The adoption of BESO was a key Implementation Action of the Climate Action Plan (CAP). As of the most recent emission inventory, existing buildings are the second largest greenhouse gas emitter and account for 37% of greenhouse gas emissions in Berkeley. BESO is one of the few city policies that addresses existing building greenhouse gas emissions. Updating BESO to better align with electrification and resilience goals, leverage rebates and incentives, and increase the number of energy upgrades in buildings would further the environmental sustainability and climate goals of the City.

Electrification, or switching from natural gas to highly efficient electric heat pumps is a critical climate action strategy that benefits building occupants. Gas, which is primarily used to heat indoor air and water, is responsible for over 90% of emissions from building energy use. Powering building with electricity reduces indoor pollution and increases health and safety for occupants.

RATIONALE FOR RECOMMENDATION

Integrating building electrification into the energy efficiency assessments will accelerate the transition of buildings away from gas appliances, advancing the City's goals of reducing greenhouse gas emissions and becoming free of fossil fuels. In addition to reducing emissions, buildings that electrify have improved health, safety and occupant comfort. The importance of promoting healthy indoor air quality has been highlighted by recent occurrences such as smoke events during wildfire season and the COVID-19 pandemic.

Taking a phased approach will ensure that the updates to BESO will meet the goals of being easy, affordable and valuable. Building electrification technology is rapidly evolving, especially for the existing building retrofit market where steps to electrify differ based on building vintage and existing condition. The development of requirements that accounts for cost impacts, evolving technology, potential impacts from refrigerants, electrical infrastructure needs, workforce capacity, changing incentives, impacts to equity and other unintended consequences, will ensure policy outcomes that are ***affordable*** for building owners and provide ***valuable*** benefits to occupants and the environment.

The proposed changes to BESO will also improve program administration and customer service, meeting the criteria of making it ***easy*** for customers to comply. Currently BESO is administered with a manual compliance system that consumes significant staff time and does not provide publicly available data to encourage energy efficiency investments. The Office of Energy and Sustainable Development is creating its own online application and payment system to address these administrative challenges.

ALTERNATIVE ACTIONS CONSIDERED

The BESO evaluation and technical advisory meetings identified a range of potential options, from maintaining the current policy to requiring homeowners and building owners to make mandatory upgrades.

Alternative 1- No action. Given the urgency of the climate crisis, this option falls short on accelerating greenhouse gas reductions and does not align with the City's goals of electrification.

Alternative 2- Require a more aggressive timeline for mandatory requirements for homes and large buildings. This option would have high-cost impacts for building owners, since rebates to offset upgrade costs are not yet available, and equipment costs are evolving. Given the projected economic recession due to the COVID-19 pandemic, requiring mandatory upgrades without having incentives in place to off-set costs could further financially burden Berkeley businesses and housing market. In addition, requiring mandatory upgrades too quickly would not allow adequate time to build capacity in the workforce and supply stream for emerging electrification technologies. Finally, this approach would not provide sufficient time to address equity concerns and other unintended consequences.

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Attachments:
1: BESO Evaluation Report (Energy Solutions)

City of Berkeley

Building Energy Saving Ordinance Evaluation Report

February 11th, 2020

To: City of Berkeley

Billi Romain
Sustainability Manager

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1. Executive Summary

As the effects of climate change continue to increase, local governments must enact policies that reduce greenhouse gas (GHG) emissions and encourage resilience in their communities. Buildings are the second largest greenhouse gas emitter in the City of Berkeley and approximately 80% of buildings in Berkeley were built before 1950[i] so addressing the existing building stock is imperative. The Building Energy Saving Ordinance (BESO) is a program designed for this purpose, and after evaluating both the outcomes achieved thus far and the current process of the BESO program, it is clear that improvements need to be made. This evaluation assessed BESO on the criteria of whether it is meeting its goals of being easy, affordable, and valuable, as well how to better align BESO with Berkeley's policy goals of electrification and community resilience.

Overview of findings:

- BESO was originally designed to promote energy efficiency but Berkeley's goals have expanded to include the transition of buildings from natural gas to clean electricity and resilience.
- Changes to incentive programs and privacy issues related to participation rates have hindered Berkeley being able to measure outcomes of the program accurately.
- While the BESO assessment has resulted in valuable information on existing building stock for program planning purposes, conversion rates have not been measurable and are assumed to be low.
- Implementation of BESO is a labor-intensive manual process for both City staff and the public that lacks the appropriate technology.

Based on the findings of this evaluation, a menu of recommendations made by Energy Solutions is included below. The recommendations, categorized by building type, are designed to improve both the outcomes of the program in achieving the City's goals and the program's administrative process. Some of these recommendations may be able to be implemented quickly while others may require more time or additional resources. Given existing staff time and resources, some of the recommendations may not be possible to implement concurrently and will need to be prioritized and phased accordingly.

Type of Recommendation	Recommendations
Outcomes for All Buildings	Update the primary focus of BESO to include electrification and resilience and ensure the ordinance properly reflects the updated goals for all buildings.
	Implement systems and requirements that allow for tracking upgrades and measuring the GHG emission savings, electrification-readiness, and resilience.
	Increase electrification outreach and education for all building types, including developing materials on electrification measures and costs.
	Consider other intervention points to target existing buildings.

Outcomes for Homes (1-4 Units)	Update ordinance requirements to integrate the City Council-proposed expansion of the seismic transfer tax rebate (0.5% of the purchase price) and ensure alignment with efficiency and electrification upgrades.
	Convene technical experts to develop performance standards for electrification upgrades and allow the use of the transfer tax rebate to offset costs and consider mandating upgrades, while addressing any potential equity impacts.
	Consider requiring the Home Energy Score at time of listing rather than at time of sale.
	Continue use of Home Energy Score but require additional electrification-readiness information to be collected during the home energy assessment.
	Investigate free or low-cost assessment tools that could be used for all homes not triggered by the BESO time-of-sale requirements.
Outcomes for Small/Medium Buildings	Prioritize improvements for rental properties with further program development that considers incentives and/or mandatory requirements.
Outcomes for Large Buildings	Develop an energy rating score card to display in the property.
	Ensure building owners have quick and easy access to the most relevant rebate program information for their potential project.
	Include requirement for no-cost/low-cost building tune-up or retro-commissioning measures and track implemented measures and savings.
	Convene a group of technical experts and building owners to develop performance standards based on energy use or greenhouse gas emissions targets with a timeline for requirements.
	Partner with Energy Service Companies (ESCOs) to deliver guaranteed savings.
Process for All Buildings	Continue to build and launch integrated online application processing system for all building types.
	Adjust fees for cost recovery of administrative time.
Process for Homes (1-4 Units)	Formalize exemption threshold of 850 square feet in BESO to exempt buildings between 600 and 850 square feet.
	Increase the time of sale deferral fee to cover additional administrative and enforcement costs.
	Implement a trade professional platform to integrate and streamline key components of the BESO process related to the delivery of assessment and energy upgrade services.
Process for Small/Medium Buildings	Streamline small and medium building requirements by updating the building size categories.
Process for Large Buildings	Utilize the U.S. Department of Energy's Asset Score Reporting template as the assessment data collection tool.

2. Overview

Report Purpose

BESO's Section 19.81.170, Chapter Review and Reconsideration, stipulates that an evaluation should be completed to assess BESO's implementation process and policy outcomes, including:

- Reconsidering extending requirements to all Single Family Buildings starting in 2021;
- Analyzing reporting systems and compliance rates;
- Analyzing the number of energy improvements and amount of energy reduced; and
- Recommending revisions and/or incentive programs to accelerate improvements to low performing buildings as it considers advisable.

This report is intended to comply with the specified evaluation. The evaluation includes a review of both the policy outcomes and administrative processes to make recommendations for improvement. The objectives are summarized as follows.

- *Identify* current barriers and opportunities for BESO;
- *Analyze* the effectiveness of the BESO program for key stakeholders; and
- *Make recommendations* for improvements to both the administrative processes and policy outcomes of BESO to align with City's electrification and resilience goals.

Introduction

On March 10, 2015, the City of Berkeley adopted Berkeley Municipal Code (BMC) 19.81 – the Building Energy Savings Ordinance (BESO) with the goal to accelerate deep energy savings in Berkeley's existing buildings. The adoption of BESO was a key Implementation Action of the Climate Action Plan (CAP). When it was passed, it replaced the Residential and Commercial Energy Conservation Ordinances (RECO and CECO).

RECO and CECO, which had been in effect since the late 1980s, required homes and buildings sold or transferred in Berkeley or undergoing renovations to meet prescriptive energy and water efficiency requirements. The static list of minimum prescriptive measures in RECO and CECO was not achieving deep energy savings and became outdated based on technology changes and code updates. Further, the measures were not tailored to individualized building conditions or designed to maximize savings. A building science approach to energy efficiency requires a performance assessment that looks at all systems within a specific building and how they interact, resulting in performance recommendations with a specific loading order; for example, air sealing must precede attic insulation to maximize efficacy and energy savings. Additionally, as regional incentive programs underwritten by ratepayer funds transitioned to whole building performance improvements, as opposed to individual measures, the RECO and CECO measures were misaligned, potentially preventing building owners from leveraging those funds.

The development of BESO was conducted with a multi-year, consensus-based community engagement process that included realtors, energy professionals, and the Berkeley Energy Commission. BESO essentially replaced the mandatory minimum energy and water efficiency requirements in RECO and CECO with a requirement for property owners to conduct and disclose a site-specific energy efficiency opportunity assessment that provided a roadmap to improvements, incentives, and financing. BESO also included the phase-in of all buildings over 25,000 square feet by a certain date rather than at time-of-sale since these larger buildings don't often transfer ownership.

Building energy performance reports often include:

- Home profile (year built, area, # of bedrooms)
- Details about home's current structure and systems
- Home Energy Score or Energy Star score
- Annual energy use and cost based on energy modeling
- Home's carbon footprint
- Custom energy improvement recommendations

Many of BESO's attributes, like its annual benchmarking requirement and the phased-in compliance schedule for large buildings, and use of Home Energy Score tool[1] for energy assessments for homes are similar to other jurisdictions with the objective of making building energy use, costs, and efficiencies visible to owners, occupants, renters, and potential buyers. However, some programs also require existing buildings to meet specified energy or greenhouse gas (GHG) reduction targets in addition to building energy ratings, assessments, and disclosures. A summary of the different jurisdictions' programs is included in Appendices G & H.

By providing valuable information on energy savings opportunities as well as access to incentive and financing programs, the goal of BESO was to on-ramp building owners to energy efficiency performance improvement programs that are subsidized by utility rate payer funds.[2] Participation in these programs would lower energy costs and reduce greenhouse gas emissions citywide, while providing increased comfort, safety, and health for building occupants. However, due to a number of issues detailed in this report, the ability to track participation in these programs has not been as successful as originally intended.

Climate and Decarbonization Policy Goals

As a key *Implementing Action* identified in the City's Climate Action Plan, it is important that BESO supports emissions reductions goals and resilience policies.

The Climate Action Plan calls for reducing the community's greenhouse gas (GHG) emissions by 80% below year 2000 levels by 2050. The GHG emissions associated with homes and buildings are the second largest source of GHG emissions in Berkeley. Berkeley has been very successful in reducing the amount of energy used in buildings, having achieved a 35% reduction in GHG emissions in buildings below 2000 levels as of 2016 data. Despite these efforts, buildings still account for 37% of GHG emissions in Berkeley.

Since the adoption Climate Action Plan goals in 2009, Berkeley has subsequently committed to more ambitious goals for decarbonization including:

Thus far, Berkeley has set forth a number of policies and goals that advance decarbonization and resilience, including:

- Achieving 100% renewable electricity citywide by 2035
- Reaching the Mayor's pledge and the State's goal for net zero carbon emissions (carbon neutrality) by 2045; and
- Becoming a fossil fuel free city

In an effort to create a more resilient Berkeley in the face of challenges of climate change, the City also adopted the following resiliency goals as part of the Resilience Strategy in 2016:

- Accelerate access to reliable and clean energy
- Adapt to the changing climate

1 A sample Home Energy Score is included in Appendix D.
2 Refers to charges assessed on electric and natural gas bills that specifically fund energy efficiency programs.

By transitioning away from a reliance on natural gas to power buildings through electrification (i.e. switching out natural-gas combustion equipment and appliances for electric-powered equipment and appliances), Berkeley can further reduce GHG emissions in its buildings. Beyond GHG emission reductions, Berkeley must align its existing policies and programs within a resilient and electrification-ready framework in order to prepare the community and its infrastructure for the impacts of climate change. In addition to these goals, BESO should leverage current projects and programs, including:

Existing Buildings Electrification Strategy: The Office of Energy & Sustainable Development is currently working on a report focused on how to equitably transition the existing building stock in Berkeley from natural gas to 100% clean energy (i.e. to electricity).

Transfer Tax Rebate: City Council passed a referral on November 27, 2018 to expand the existing Seismic Transfer Tax Rebate Program[3] for qualifying electrification, energy efficiency, and water conservation retrofits. Staff is currently evaluating options for additional qualifying measures for electrification, resilience/safety, and energy efficiency. This incentive creates multiple opportunities to integrate with BESO that will be further discussed in Section 5.

3. Methodology and Evaluation Criteria

The methodology used throughout the course of this evaluation is summarized in Figure 2 below. Each of the steps is discussed in more detail below.

Figure 1: Evaluation Methodology

Evaluation Criteria

The evaluation is predicated on the criteria used for the development of BESO: easy, affordable, and valuable. *Easy* and *affordable* are most relevant to evaluating the administrative processes while *valuable* is most relevant to evaluating the policy outcomes. The criteria and their associated metrics are summarized in Table 1:

3 The City of Berkeley's existing Seismic Transfer Tax Rebate program refunds one-third of the 1.5% transfer tax amount (equal to 0.5% of the value of the home) back to homeowners who make seismic upgrades to their home. More information can be found at: https://www.cityofberkeley.info/Planning_and_Development/Building_and_Safety/Seismic_Transfer_Tax_Guidelines.aspx

Table 1: Evaluation Criteria and Metrics

Criteria	Metric
Easy	Equitably minimize administrative burden (for City staff, building owners, and occupants)
Affordable	Equitably minimize financial burden (for City staff, building owners, and occupants)
Valuable	Maximize emissions reductions Equitably maximize building occupant resiliency Maximize data quality Maximize consistency with state & regional efforts

Data Collection

DATA ON OUTCOMES

BESO outcomes should be measured by energy efficiency upgrades and their resulting GHG emissions reductions or increased resilience potential as a result of energy assessments or disclosure of energy information. The outcomes include:

1. Level of participation in verified efficiency and electrification programs; and
2. Number and extent of verified energy upgrades made to the building.

Due to privacy issues, utility and regional efficiency rebate programs are unable to share disaggregated participation data with the City of Berkeley. Therefore, in order to determine how Berkeley should improve BESO, analysis was conducted on the existing building stock. There are currently three data sources with information related to outcomes: Home Energy Score assessment data collected through BESO, building stock data collected by The Building Electrification Initiative (BEI)[4], and qualitative survey data collected from this evaluation. However, while these are useful data sources, they do not give Berkeley concrete information about how many and what types of people are making upgrades based on the energy information gleaned from BESO, what types of upgrades are being made, and the resulting GHG emissions reductions associated with those upgrades.

DATA ON PROCESS

The effectiveness of BESO is in part dependent on the effectiveness of the process for administration - compliance rates, staff and participant satisfaction, cost-effectiveness and data quality.

The evaluation team reviewed the administrative process of BESO, including workflow diagrams, and conducted an in-person review of the process. This included an overview of the BESO processes for both time of sale and large buildings, estimated staff time needed to work on various aspects of BESO,

4 In 2019, Berkeley partnered with the Building Electrification Initiative (BEI) to conduct a market segmentation analysis that assessed its local building stock for overlapping opportunities to convert heating and hot water systems away from fossil fuels while also providing needed investments to improve health, quality, resiliency, and affordability. The analysis will guide Berkeley in developing new programs and revenue streams that will be needed to equitably accelerate electrification and decarbonization in its community.

and observing staff procedures, including a physical walk between City departments to manually process checks.

To better understand how the process impacted external stakeholders, a series of surveys and stakeholder meetings were conducted to collect feedback from BESO participants, energy assessors, realtors, and the Berkeley Energy Commission.

Conduct Analyses

Once the data were collected, a holistic systems evaluation of administrative workflows were conducted, identifying the most significant challenges and impactful leverage points.

To evaluate the BESO program process, the evaluation team considered the technical, functional, and potential effectiveness to identify opportunities for improvement. Technical effectiveness determines if the system works as designed; if it is reliable, secure, and scalable for the data it currently holds. Functional effectiveness evaluates if the system contains the features and data needed to support the requirements of the program, to reduce administrative burden, and to measure the status of program goals. Functional effectiveness also accounts for whether the system is designed intuitively, or if users are properly trained to utilize its features or access the data. Potential effectiveness determines if the system can support future phases and plans for the program, expand to serve additional stakeholders as users, and if it is sustainable throughout the expected lifetime of the program data, or if the data can be thoroughly transferred to a new system.

Then, potential solutions were identified, and the pros and cons of each solution were weighed based on existing literature, existing programs in other cities, and the evaluation team's decades of institutional knowledge in energy efficiency and distributed energy resources policy and program analysis, design, and implementation, including its use of information systems to streamline and optimize workflows.

4. Summary of Findings

Findings Related to Program Outcomes

In analyzing the program outcomes, the evaluation determined three overarching findings around program outcomes:

Beneficial electrification: Switching from fossil fuels to electricity, where doing so satisfies at least one of the following conditions, without adversely affecting the others:

- Save consumers money over time;
- Benefit the environment and reduce GHGs
- Improve product quality or consumer quality of life; or
- Foster a more robust and resilient grid.

1. **Policy objective has changed from building energy efficiency to beneficial electrification.**[ii]

   The original objective of BESO, as developed in 2015, was to reduce the use of energy use of both gas and electricity use no longer aligns with the more recently adopted Fossil Fuel Free, decarbonization and resilience goals. A policy objective that prioritizes beneficial electrification will ensure the City is resilient in the face of climate change, yet as currently structured, the program does not prioritize the transition to clean electricity or promote switching away from natural gas-based appliances. This is reflected in the fact that the focus of energy assessments for both homes and larger buildings is on energy efficiency rather than on electrification-readiness.

2. **Conversion rates from assessment to energy upgrade have been difficult to measure due to lack of available data**

   BESO was designed to be an on-ramp to public benefit-funded energy upgrade rebate programs. However, lack of access to utility program participation data due to privacy protections and lack of granular building permit data make it difficult to measure specific outcomes of the current program in terms of which buildings are making upgrades, how much energy is being saved, or how many GHG emissions are being reduced. This has made it difficult to ascertain the conversion rate of buildings that progress from assessment to upgrade. However, a review of limited permit data, survey results, and anecdotal evidence indicate rates of adoption of recommended measures is low. For homes, conversion rates appear unaffected by whether the seller includes the energy assessment in the closing packet for the buyer or whether the buyer completes the assessment themselves. Survey results indicated that cost of upgrades was the main reason[5] why building owners did not complete the energy upgrades that were recommended in the energy assessments.

3. **Data from BESO has been useful in informing and shaping policy development.**

   BESO data provides staff with an overview of their existing building conditions which can help inform proposed policies. For example, the Home Energy

Example of Data Collected through Home Energy Score

Primary Heating System Type	Count	Percent
Baseboard	19	1.4%
Boiler	42	3.2%
Central Furnace	1,027	78.3%
Heat Pump	5	0.4%
Mini Split	2	0.2%
Wall Furnace	213	16.2%

5 32 out of 77 BESO participants who responded to the survey indicated that the cost was a reason they had not completed any energy upgrades.

Score data provides specific building characteristics, such as the type of heating systems, efficiency of the water heater and insulation condition. The data, which can be used to identify which homes might be good candidates for upgrades. Annual benchmark data from large buildings allows staff to see monthly energy usage data, including the breakdown between natural gas and electricity usage. These data allow staff to track energy usage over time and understand the load across seasons. Collecting and reporting this data for large buildings is also a State requirement. As more homes and buildings are touched by BESO, the building inventory data will become even more valuable.

Findings Related to Program Process

In analyzing the program outcomes, the evaluation determined two overarching findings around program process:

1. **BESO administrative process is staff-intensive and time consuming.**
   The implementation of BESO has been hampered by a labor-intensive manual process and the lack of a reporting system. Records have been maintained in an ACCESS database that was clunky, unstable, unable to handle large data sets, and had limited reporting functions. As BESO touches more and more buildings, both through the phase-in of larger buildings and the time of sale trigger, Berkeley will continue to struggle with administering the program effectively if it doesn't change its administrative process and software programs. Not only do these issues affect staff, it also creates a less positive experience for building owners, realtors, and energy assessors. Staff is in the process of creating a BESO online application and payment portal that should help to alleviate some of the administrative process issues.

2. **Ensuring compliance is challenging.**
   Enforcement for BESO compliance requires the ability to contact building owners, though staff often only have access to mailing addresses so communication is inefficient and ineffective. The enforcement of time of sale deferrals (Form C) to comply with the BESO assessment requirement after sale is low. Currently, 54% of the Form Cs that Berkeley has on file are expired and many of the mailing addresses have been returned as "undeliverable." In large buildings, building owners are often not aware of the requirements until they are out of compliance because of the difficulty of reaching the building owners by mail. Until compliance rates and communication improve, it will be difficult to add any additional requirements or increase BESO to include more buildings.

Overview of Berkeley's Existing Building Stock

The City of Berkeley is receiving technical support on electrification initiatives from the Building Electrification Initiative (BEI). BEI conducted a market segmentation analysis for the City of Berkeley that took inventory of all the buildings stock in Berkeley based on number of buildings, total square footage, and greenhouse gas emissions. BEI also analyzed BESO Home Energy Score data for homes (1-4 units).

HOMES (1-4 UNITS)

Based on BEI's analysis, there are about 30,000 homes in Berkeley with 1-4 units. These account for 86% of the total number of buildings and 51% of the total building area. All residential buildings (including those with more than 4 units) account for 48% of building-based GHG emissions.

In terms of building age, 89% of single family homes and 85% of 2-4 unit homes were built before 1950. This means that Berkeley's housing stock is largely existing, aging homes potentially with older building systems and appliances.

BEI also analyzed the BESO assessment data collected on over 1,300 homes between 2015 and 2019. The key takeaways from their analysis include:

- There is little variance in heating system type based on the building vintage.
- 78.3% of homes are using central furnaces and 16.2% of homes are using wall furnaces. Wall furnaces are estimated to use more natural gas per square foot than other heating systems.
- 97.5% of homes use natural gas as the primary heating fuel.
- 95.5% of homes do not have a cooling system.
- 98.95% of homes use natural gas for water heating.

SMALL/MEDIUM BUILDINGS

Based on BEI data, there are approximately 3,050 buildings in Berkeley totaling 12.5 million square feet that fall into the small/medium sized building category (less than 25,000 square feet, excluding 1-4 unit homes). This accounts for about 12% of all buildings and 22% of square footage of all buildings in Berkeley. As the requirements stand, these buildings will be phased in to the BESO requirements starting July 1, 2020.

LARGE BUILDINGS

Large buildings are defined as buildings with a gross square footage of 25,000 square feet, or greater. Based on BEI's evaluation, there are approximately 600 large buildings of 21.8 million square feet gross area in Berkeley. These account for 2% of the overall building stock and 27% of the total building area. In terms of building age, 34% of large buildings were built before 1950. All of these statistics present a unique opportunity for the City of Berkeley to upgrade aging infrastructure and they need to ensure that upgrades made by building owners and tenants are in line with the City's electrification and resiliency goals.

5. Analysis and Recommendations

Program Outcome Recommendations for All Buildings

Recommendation #1: Prioritize Electrification and Resilience

Update the primary focus of BESO to include electrification and resilience and ensure the ordinance properly reflects the updated goals for all buildings.

BESO's primary goal of energy savings should be updated to reflect the City's decarbonization goals. Instead of focusing on energy efficiency, the goal should be expanded to include electrification, emissions reduction, safety, and resilience. BESO should be updated to prioritize beneficial electrification for all building sizes and types, where possible. This will also allow BESO to better align with upcoming state and regional rebates for electric appliances and fuel switching technologies.

Policies that promote electrification and resilience help buildings adapt to the impacts of climate change (e.g. extreme heat, flooding, and fires) as well as improve indoor air quality and overall comfort for occupants. By updating BESO to achieve multiple-benefit solutions, BESO can help Berkeley simultaneously mitigate and adapt to a changing climate.

With an updated focus, the City should also consider updating the name of the ordinance. Currently, the phrasing of an "energy saving" ordinance does not encompass the recommended update to the goals of BESO. One suggestion is the Building Resilience and Electrification Ordinance (BREO).

Recommendation #2: Improve Ability to Measure Outcomes

Implement systems and requirements that allow for tracking upgrades and measuring the GHG emission savings, electrification-readiness, and resilience.

The City should update assessments to ensure that they capture GHG savings, electrification, resilience, and safety benefits of the proposed recommendations listed in the report. While PG&E is not able to share participation rates due to privacy concerns, the City should partner with East Bay Community Energy, BayREN and other regional entities who may provide future electrification rebates to better align and capture conversion from assessment to upgrade.

Recommendation #3: Electrification Outreach and Education

Increase electrification outreach and education for all building types, including developing materials on electrification measures and costs.

It will be important to provide education to homeowners, contractors and building managers on electrification and the relevant technologies, including heat pump water heaters, heat pump air heaters, mini splits, induction stoves, and heat pump dryers. Although each building is unique, having a list of common energy upgrades and electrification technologies can provide building owners with a first step to understanding potential energy and electrification upgrades. The list can be categorized by building size/type and should include the technical and economic considerations for the each

measure and estimated costs. Appendix I provides a sample list of measures for large buildings. Similar lists could be developed for homes and other building sizes and types in order to motivate building owners to pursue energy upgrades.

Recommendation #4: Consider Other Intervention Points

Consider other intervention points to target existing buildings.

There are multiple intervention points in the lifespan of a building where changes can occur to target its energy consumption and related systems. BESO utilizes two intervention points – targeting homes and other small/medium buildings at time of sale and targeting all buildings that meet the size threshold of 25,000 square feet or more on a phased-in schedule. In order to accelerate building improvements, Berkeley should consider policies that leverage other intervention points including point of lease/rental, building renovation, building maintenance or major system replacement, and/or building resilience upgrade (e.g. seismic renovation, flood prevention). Other strategies that should be considered to compliment BESO include targeting by building type (e.g. schools, retail, high rise, and multifamily) or geographically targeted strategies that phase in implementation by neighborhood or business district.

Program Outcome Recommendations for Homes (1-4 Units)

Recommendation #5: Integrate Transfer Tax Rebate with BESO

Update ordinance requirements to integrate the City Council-proposed expansion of the seismic transfer tax rebate** (0.5% of the purchase price) **and ensure alignment with efficiency and electrification upgrades.

In November 2018, Berkeley City Council referred staff to expand the Seismic Transfer Tax Rebate Program for qualifying electrification, energy efficiency, and water conservation retrofits. This presents an important opportunity for BESO to ensure that the transfer tax rebate can be applied to upgrades recommended through the BESO assessment, especially for low performing homes. Survey results[6] and feedback from meetings showed strong stakeholder interest in expanding the rebate to include energy-related upgrades. By providing rebates directly, the City will be able to directly track BESO upgrades and outcomes.

The City will need to determine which measures to incentivize through the transfer tax rebate and coordinate with the home energy assessors to ensure that the opportunity for these measures is evaluated in the home energy assessment. When expanding the transfer tax rebate measures, the City should include measures that enhance resilience or promote electrification-readiness. Potential measures could include upgrading an electrical panel, replacing a gas water heater with a heat pump water heater, completing insulation and air sealing alongside a combustion safety test, or installing an automatic gas shutoff valve.

6 52 out of 77 BESO participants and 33 out of 50 realtors who responded to the survey supported or strongly supported expanding the transfer tax rebates to include energy efficiency upgrades.

Administering the expanded transfer tax rebate will take additional staff time to process the rebates. The City should ensure that it can accurately track how many home sales take advantage of the transfer tax rebate being used for electrification upgrades. It is recommended that after three years the City should analyze the data and reevaluate whether to implement mandatory requirements. This will allow staff to better understand the uptake of measures, including understanding which electrification and resilience upgrades are most common and best suited for Berkeley homes, the costs for these measures, and any challenges for implementation.

Recommendation #6: Consider Requiring Electrification or Resilience Upgrades

Convene technical and trade experts to develop performance standards for electrification upgrades and allow the use of the transfer tax rebate to offset costs and consider mandating upgrades, while addressing any potential equity impacts.

To align with Berkeley's updated goals and catalyze electrification-readiness in homes, Berkeley could use the BESO program to require upgrades that focus on electrification, resilience, and energy efficiency and allow the transfer tax rebate to offset costs. Potential mandatory measures, as outlined in Appendix C, could include electric panel upgrades, duct sealing, upgrading insulation, pre-wiring for heat pump water heaters, etc. A home energy assessor could analyze the existing conditions to determine which of mandatory measures are best suited for a home. The homeowner would then be eligible for the transfer tax rebate to help cover the costs of the required upgrades.

Adding mandatory measures would significantly increase the requirements and costs for BESO compliance. To mitigate this, mandatory measure costs should be capped at or possibly slightly above the transfer tax rebate amount. To require mandatory upgrades, the City also needs to be able to handle the increased administrative time, as there would need to be a robust compliance, enforcement and exemption process to allow for homes that require substantial repair work and are sold "as is." Lastly, the City would be losing the revenue associated with the transfer tax if residents were expended all these funds applying them to mandatory upgrades in all transfers. The City should consider the implications of this reduction in transfer tax revenue.

Recommendation #7: Update Ordinance Trigger Point

Consider requiring the Home Energy Score at time of listing rather than at time of sale.

Currently BESO requires a Home Energy Score report be included in the closing packet or to be deferred to the new buyer. Berkeley should consider following the examples of Portland, Oregon and the European real estate market and require a Home Energy Score be completed earlier, at the time of listing, to ensure that it is truly a disclosure and market transformation tool.

This is expected to make home energy usage and potential upgrade opportunities more visible to homebuyers. With this information available at the beginning of the process, homebuyers are able to more readily consider the financial and practical implications of upgrades along with the rest of homeownership costs and benefits, and ultimately may invest more time and money into making improvements.

A time of listing requirement would necessitate integration with the Multiple Listing Service (MLS) to make the Home Energy Score a standard metric that people see for listings, similar to a walkability score. To integrate with the MLS requires agreement and action on the part of Bridge MLS, which may be beyond control of the City.

While it is important that the Home Energy Score is visible at the time of listing, it is also important that the new home buyer, who will be living in the home and making any upgrades, engage with the report and recommendations.

Additionally, the City should ensure that the transfer tax rebate information (see Recommendation #3) along with the assessment are all available together at the time of listing so potential buyers are receiving both sets of valuable information together at once – the areas for improvement and the available rebates to offset costs. If the City decides not to move the energy assessment to time of listing, it should ensure that the online system has features to help staff better track deferrals.

Recommendation #8: Update Data Collected from Energy Assessment

Continue use of Home Energy Score but require additional electrification-readiness information to be collected during the home energy assessment.

Some stakeholders have expressed dissatisfaction with the Home Energy Score, in part because it does not include recommendations focused on electrification. Eliminating the requirement to conduct the assessment was considered as an option in this evaluation. Ultimately, it is recommended that the City should maintain use of the Home Energy Score for several reasons:

- It is a nationally recognized metric, that was developed by the United States Department of Energy;
- It is a consistent metric used by jurisdictions across the United States;
- It uses a scale of 1-10 which is easy to understand for consumers;
- Many assessors are already trained to evaluate homes using the Home Energy Score criteria;
- It has quality assurance built in; and
- It provides important baseline information about homes.

The most impactful change would be to augment the assessment to include additional information. Adding electrification, resilience, and safety information to the assessment would better align with Berkeley's goals and would provide homeowners with information on how to electrify and make their homes more resilient. The City should consider a tool that includes electrification when updating the energy assessment requirements or create a supplemental set of electrification recommendations that could be added to the Home Energy Score report. In order to add electrification-readiness to a report, energy assessors will need to be trained on how to add these elements to their audits and how to make informed, tailored recommendations for electrification and resilience based on the assessed existing conditions of each home.

The specific recommended energy assessment improvements, along with their pros and cons, are listed in Table 2. An example of a report that includes some of this additional information is included in Appendix E.

Table 2: Energy Assessment Improvement Recommendations

Improvement	Pros	Cons
Require assessors to collect data about electrification-readiness and resilience opportunities	• Aggregates data about electrification potential • Provides electrification and resilience recommendations based on building characteristics	• Additional cost for assessment • Additional training for assessors
Identify measures eligible for transfer tax rebate and link recommendations to any additional rebates available	• Ensures that homeowners are using the transfer tax rebate for measures deemed important for electrification and resilience • Provides homeowners a resource to fund or partially fund recommended upgrades	• Risk of defining measures too narrowly • Additional cost for assessment • Additional training for assessors • Additional administrative time to disseminate updated rebate information to assessors
Require recommendations to include range of the cost of upgrade	Makes clear for homeowners how much they might consider spending on upgrades	Costs vary widely, based on existing conditions, market, and may not be accurate
Estimate emission reduction from each upgrade	Helps homeowner understand the environmental impacts they could be making	Estimate may not be accurate
Resilience and gas appliance safety evaluation	Provides safety information to homeowner	• Additional cost for assessment • Additional training for assessors

Recommendation #9: Investigate Assessment Tools for All Existing Homeowners to Encourage Electrification

Investigate free or low-cost assessment tools that could be used for all homes not triggered by the BESO time-of-sale requirements.

To enhance the tools available, Berkeley could research low-cost or free web-based tools that provide energy efficiency and electrification-readiness recommendations for homes. The City should consider encouraging or requiring all single family buildings, not affected by time-of-sale requirements, to use a free, customer-facing tool to understand how best to electrify their home. Tools could use customer input or publicly available data and building energy modeling to recommend a path for the home to reach zero net energy. Recommendations should be based on a home's unique characteristics, include energy use data for the most robust recommendations, and list the most cost-effective home upgrades.

Program Outcome Recommendations for Small/Medium Buildings

Recommendation #10: Consider Mandatory Requirements for Rental Properties

Prioritize improvements for rental properties with further program development that considers incentives and/or mandatory requirements.

Energy-related upgrades are typically challenging to implement in rental properties because of the 'split incentives.' For example, building owners are responsible for purchasing and maintaining key appliances and the building envelope – e.g., heating and cooling, water heaters, insulation, windows – yet renters pay for the energy related to these building components, thereby splitting the costs and benefits across parties. Additionally, there can be a temporal split incentive where renters' duration of occupancy deters their investment in energy reducing measures, even if contributing is possible. With these barriers to upgrades, additional level of attention is needed, especially since over 89% of 5+ unit multifamily buildings are rentals in Berkeley.[7]

One potential opportunity for Berkeley is programmatically integrating with the Rental Housing Safety Program currently under development. The information collected in this checklist and the energy assessments could help inform the prioritization of upgrades, and these upgrades could be implemented either through incentives and/or mandatory requirements. For example, buildings that do not successfully complete the checklist could be subject to mandatory upgrade requirements and those that do could be assigned incentives via an opt-in waiting list. The City of Berkeley staff should consider and evaluate a few potential pilot programs to ensure optimal solutions that avoid unintended consequences, such an increasing rents, displacement, or decreased safety.

Program Outcome Recommendations for Large Buildings

Recommendation #11: Introduce Energy Performance Card for Display

Develop an energy rating score card to display in the property.

Requiring building owners to display a simplified building energy performance scorecard will encourage them to pursue energy efficiency upgrades and, for well-performing buildings, maintain that high performance.

Chicago's new Energy Rating system,[iii] which is a zero to four-star rating system, requires building owners to post their rating in a prominent location on the property and share the rating information at the time of sale or lease listing. New York City also requires building owners to display their energy efficiency grade and score in a conspicuous location near each public entrance to the building. Implementing this program would require time and resources for City staff to determine which features would work best for Berkeley, educate building owners, and ensure compliance.

7 For 5+ unit multifamily buildings, BEI data showed that 463 out of 4,126 low rise and 13 out of 245 high rise units were owner occupied.

Recommendation #12: Educate Building Owners about Relevant Rebates and Programs to Reduce Project Costs

Ensure building owners have quick and easy access to the most relevant rebate program information for their potential project.

Electrifying a building is a cost-intensive, new idea for building owners and it is important for them to understand its impact on occupant comfort as well as capital and operational cost. One of the lessons learned in various benchmarking programs is the importance of significant outreach to and education of property owners about funding opportunities to reduce project costs.[iv] This was also raised as a point of feedback from assessors; they noted that the City did not provide enough information about rebates but that they didn't have the time to search PG&E's website for the information. Because rebates are often changing, reliable information can be difficult to find from the various rebate providers, including PG&E, East Bay Community Energy, BayREN, and other third-party program providers. Additionally, new rebate and incentive programs, which were previously precluded by the California Public Utilities Commission three-prong test rule, will eventually become available for electrification, changing the rebate landscape even further. Once this happens, PG&E will be selecting a third-party program administrator for all their new incentive programs.

The City should work with the new program administrator and other incentive providers to identify a central location for rebate and incentive programs. Then, this central location can be shared with energy assessors and building owners to ensure that building owners are aware of all the resources available to help them make upgrades, including financing options, energy audits, and rebate guides. This information could be disseminated by regularly updating the Berkeley website with tailored links for energy assessors and building owners and/or creating handouts for energy assessors to give to building owners that are regularly updated.

Other jurisdictions have dedicated teams that coordinate meetings between building owners and utilities or protocols in place that facilitate interactions between customers and local utilities. For instance, the City of Vernon, California, offers a customer incentive program where customers who participate in the program have direct contact with the City's gas and electric department. Additionally, projects funded by the Maryland Energy Administration are mandated to participate in incentive programs which helps reduce the payback period and make even large capital investment projects attractive.

Given that the product-based rebate programs often change and run out of funding, it is important that the information provided by Berkeley be constantly monitored and kept up to date. Examples of current product- and savings-based rebates available through PG&E are listed in Appendix J.

Recommendation #13: Require Mandatory/Prescriptive Building Tune-Up Measures

Include requirement for no-cost/low-cost building tune-up or retro-commissioning measures and track implemented measures and savings.

Per the California retro-commissioning guide,[v] retro-commissioning is "a systematic process for improving an existing building's performance by identifying and implementing relatively low-cost operational and maintenance improvements, helping to ensure that the building's performance meets owner expectations." A typical retro-commissioning project consists of planning, investigation, implementation, and handover phases. The deliverable includes a report which includes benchmarking information, energy audit, preliminary savings with project cost, final savings with invoices and recommendations for capital investment. The energy cost savings and non-energy cost savings for retro-commissioning vary from $0.11 to $0.72 per sq. ft. and $0.10 to $0.45 per sq. ft., respectively. The retro-commissioning cost varies from $0.13 to $0.45/sq. ft. and typical payback is less than two years.

As building systems age there are opportunities for no-cost/low-cost measures to keep these systems running as efficiently as possible, which can reduce building energy use. Some cities have already developed or implemented policies that require mandatory retro-commissioning or building tune-ups. For example, Seattle requires building tune-ups every 5 years; New York City requires retro-commissioning every 10 years; Los Angeles and San Jose will also have similar requirements starting in 2021. Additional information on existing building requirements for various cities is provided in Appendices G & H.

Recommendation #14: Set Performance-Based Energy or GHG-Based Targets

Convene a group of technical experts and building owners to develop performance standards based on energy use or greenhouse gas emissions targets with a timeline for requirements.

Benchmarking and energy assessments will help building owners and the City to understand the energy performance of the buildings, but in order to reduce energy use and GHG emissions, the policy should require energy upgrades and promote electrification. Other cities have developed performance-based targets, setting GHG emission thresholds or energy reduction targets based on building use types. As BESO aligns with Berkeley's fossil fuel free future, natural gas based targets should be explored as a path to electrify Berkeley's large building stock. Staff should convene a group of technical experts and building owners to develop performance standards based on energy use or greenhouse gas emissions targets and determine a timeline for those requirements to go into effect.

Recommendation #15: Team Up with Energy Service Companies

Partner with Energy Service Companies (ESCOs) to deliver guaranteed savings.

Working with ESCOs[vi] can reduce initial costs, increase the confidence level of building owners in the economic viability of projects, and ultimately accelerate the energy savings achieved by projects. The City of Berkeley can start an initiative similar to Building Owners and Managers Association (BOMA)'s Energy Performance Contracting (BEPC) Model[vii] to work with ESCOs and large building owners. This type of initiative helps building owners and operators navigate the difficulties in the Energy Performance Contracts by providing information and templates when executing investment-

grade energy efficiency retrofits. These initiatives are independent of funding resources and do not require a performance guarantee to ensure the opportunity is open to all service providers, but are flexible enough to include a performance guarantee as well as measurement and verification if the building owner intends to do so.

Program Process Recommendations for All Buildings

Recommendation #16: Implement Online System

Continue to build and launch integrated online application processing system for all building types.

Prior to this report being written, Berkeley had already contracted with a consultant to implement an online application and payment processing system. Berkeley should continue development of this online platform and should work to ensure the updated solution meets all of their needs, especially as requirements of the ordinance change.

Recommendation #17: Adjust Fees

Adjust fees for cost recovery of administrative time.

Currently, the fees leveraged for BESO applications are not covering the administrative time it takes to process them, particularly for Form C deferrals. Berkeley is conducting a fee study about how to adjust the BESO fees to better reflect staff time. The City should update the fees to more accurately account for administrative time, making sure to consider the time spent on compliance as well as any time saved from the implementation of the online system.

Program Process Recommendations for Homes (1–4 Units)

Recommendation #18: Formalize Exemption Threshold

Formalize exemption threshold of 850 square feet in BESO to exempt buildings between 600 and 850 square feet.

In updating BESO, Berkeley should formalize the exemption to ensure it is clear that buildings between 600 and 850 square feet are exempt from BESO requirements. This will ensure consistency across requirements and minimize the administrative burden of receiving applications for buildings that are exempt.

Recommendation #19: Increase the Deferral Fee to Cover Administration

Increase the time of sale deferral fee to cover additional administrative and enforcement costs.

Currently, over half of the homes required to comply with BESO opt to use the deferral option (Form C) rather than complete the BESO assessment prior to the point of sale. Low compliance rates from expired deferrals are time consuming for staff.

If the City moves to time of listing, the idea is that the energy assessment information will be more readily available to home buyers and the deferral option should be discouraged. Currently, the fee for submitting a deferral is less expensive than it is to comply with BESO. It is recommended that the City make the cost of deferrals commensurate with the time it takes for staff to process and follow-up with non-compliance of deferrals in order to disincentivize deferrals.

The evaluation team also considered eliminating the deferral option for time-of-sale but concluded that it was necessary in order to not delay or derail real estate transactions. It was also noted that if the deferral option is eliminated or restricted, more staff time may be needed to process exemptions.

Recommendation #20: Use Trade Professional Platform to Track Data

Implement a trade professional platform to integrate and streamline key components of the BESO process related to the delivery of assessment and energy upgrade services.

Given that Berkeley is already implementing upgraded software systems, BESO would benefit from enhancing those upgrades to include an online trade professional platform. This platform could connect home and building owners directly with assessors, who could perform their building assessment, and contractors, who could make the improvements recommended through the BESO assessment. An outline of the workflow and details about the features are included in Appendix F.

Program Process Recommendations for Small/Medium Buildings

Recommendation #21: Streamline Small and Medium Building Requirements

Streamline small and medium building requirements by updating the building size categories.

Currently, small and medium building requirements are a combination of the time of sale requirements and the large building requirements. This creates an administrative burden and causes confusion for building owners. To help mitigate this, the categories should be resized and the new requirement should be:

- 850 square feet or below – exempted
- 850-14,999 square feet – time of sale requirement
- 15,000-24,999 square feet – annual benchmarking requirement

This will change the BESO requirements for some medium-sized buildings from a phase-in schedule to a time-of-sale requirement. Although there may be additional time of sale administrative work, this should be mitigated by the new online system. Additionally, it is not expected that these buildings will turn over ownership very often. The streamlined requirements would also require additional buildings to comply with an annual benchmarking requirement but lessen the assessment requirement, which can be cost-prohibitive for small and medium sized buildings. Annual benchmarking will ensure that energy data is collected about these buildings.

Program Process Recommendations for Large Buildings

Recommendation #22: Standardize Data Collection to Improve Building Inventory

Utilize the U.S. Department of Energy's Asset Score Reporting template as the assessment data collection tool.

Currently, BESO allows data collected through the assessments to be submitted in a variety of tools, some of which don't allow for mass data export. Building information and data is then not able to be aggregated and utilized for any sort of analysis. The City should standardize how data is

submitted and what fields are collected, including main business type, year built, age of the building systems, year of last energy audit, year of completed upgrades if any, primary heating and cooling equipment, primary usage, schedule, any change in building usage type and shared or dedicated meter. Berkeley should collect data from assessments through the U.S. Department of Energy's Assets Score Reporting Template since: it is a nationally used tool to collect energy assessment information, Berkeley assessors are familiar with the tool and most already are using it, and it's free and customizable allowing the City to specify the required fields.

6. Conclusion

In order to use BESO as a means to help achieve Berkeley's climate and decarbonization goals, the City needs to update the primary focus of the ordinance and ensure that it can better measure outcomes that target GHG emission savings, electrification-readiness, and resilience. This will require outreach and education to homeowners, contractors, and building managers.

To improve outcomes for homes, Berkeley should align BESO with the City's proposed transfer tax rebate expansion to help finance energy efficiency, electrification, and resilience upgrades and consider requiring homeowners to make mandatory upgrades. To help ensure prospective homeowners understand the energy efficiency of a home, the BESO program should consider moving the trigger point from time-of-sale to time of listing. Additionally, Berkeley should enhance the Home Energy Score report to include an electrification-readiness assessment and investigate other types of assessment tools that encourage electrification.

For small/medium buildings, Berkeley should consider mandatory requirements for rental properties in order to overcome split incentives of upgrades between building owners and building occupants.

In large buildings, Berkeley should consider requiring mandatory building tune-up measures for large buildings and/or set performance-based energy or GHG-based targets. Berkeley should develop an energy rating score card to display in properties that would make energy efficiency more conspicuous. Berkeley should also ensure building owners have quick and easy access to the most relevant rebate program information for their potential projects and would benefit from teaming up with energy service companies.

From a process standpoint, Berkeley should convene different technical experts as part of an advisory group to ensure stakeholders understand electrification and its benefits. Additionally, the City should continue to implement an integrated online application processing system and should work to adjust fees of the program to accurately recover the cost of administrative time. BESO would also benefit from the development of a knowledge database that includes the most prevalent issues and measures for implementation.

To improve specific process issues, Berkeley should formalize the exemption threshold for buildings between 600 and 850 square feet, implement a trade professional platform, update the requirements for small/medium buildings, and utilize the U.S. Department of Energy's Asset Score Reporting template for collecting data about large buildings.

Overall, the City needs to ensure that any updates made to BESO still allow the ordinance to be flexible enough to adapt to changing City goals and respond to the changing technology landscape that is inevitable as electrification becomes more commonplace.

Appendix A: Stakeholder Outreach

The BESO evaluation relied mainly on conversations with City staff as well as stakeholder surveys and meetings. Surveys were sent to BESO participants, realtors, and energy assessors. For participants, 77 respondents answered ten questions covering:

- Building characteristics;
- Overall feedback on the program;
- How valuable the BESO information was;
- Potential updates to the program; and
- General open-ended feedback.

For realtors, 50 respondents answered ten questions covering:

- Overall feedback on the program;
- Open-ended feedback about the energy assessments;
- Energy assessors;
- Potential updates to the program; and
- General open-ended feedback.

Finally, for energy assessors, 5 home assessors and 11 commercial building assessors answered fourteen questions covering:

- Energy assessment tools;
- Overall feedback on the program;
- Value to clients;
- Time to complete an assessment;
- Potential updates to the program; and
- General open-ended feedback

After receiving the results of the surveys, it was clear that the survey questions had been more focused on process than outcomes. For future evaluations, survey questions should be better designed to understand the outcomes that have resulted from BESO.

In addition to surveys, meetings were held with realtors, energy assessors, and the Energy Commission. The realtor meeting was held on November 4, 2019 with approximately 20 realtors in attendance. It lasted for two hours and feedback was collected about what they thought was working and wasn't working with BESO, the feedback they receive directly from homeowners about the information gleaned from BESO, and their thoughts on integrating BESO with the transfer tax rebate.

The assessor meeting was held on November 15, 2019 with approximately 5 home assessors and 8 large building assessors.[8] This meeting also lasted for two hours where the first hour was a joint session and the second hour was split between home and large building assessors. In the home assessor session, feedback was collected about additional energy assessment tools, additional test they could perform, and ways to

8 This accounts for some assessors who perform both home and large building assessments.

streamline the reporting process. In the large building assessor session, feedback focused on increasing outreach about the program, ensuring benchmarking is done by a professional, and their thoughts about improvements to the program. The presentation for the assessor meeting can be found on Berkeley's website.[viii]

Finally, the progress to-date was presented to the Energy Commission on December 4, 2019. There were 7 commissioners in attendance who gave feedback about the lack of outcomes achieved from BESO and the need for major changes to the ordinance.

Appendix B: Current BESO Requirements

BESO has distinct requirements based on building type and size. For large commercial and multifamily buildings, 25,000 was determined as the minimum threshold for annual benchmarking because smaller building do not often have a dedicated building manager available to comply with this requirement. For 1 to 4 unit homes, 4 units was chosen as the ceiling because it is consistent with ratepayer-based public benefits funded programs for homes such as Energy Upgrade California. Finally, for small and medium commercial and multifamily buildings between 850 and 24,999 square feet, the requirement was determined to be a combination of the homes and large building requirements.

Building Size	Requirements
25,000+ sq. ft.	Annual Benchmark Energy Assessment every 5 years
15,000-24,999 sq. ft.	Time of Sale Requirement or Assessment every 8 years Phase-in 7/1/2020
5,000 – 14,999 sq. ft.	Time of Sale Requirement or Assessment every 8 years Phase-in 7/1/2021
850-4,999 sq. ft.	Time of Sale Requirement or Assessment every 10 years Phase-in 7/1/2022
1 - 4 unit homes	Assessment at Time of Sale

1-4 Unit Homes

When 1-4 unit residential buildings are sold, BESO requires that the seller either submit an energy assessment, apply for a deferral, or qualify for an exemption. The BESO application is the same for all cases with different compliance options listed for the applicant to choose.

If submitting an energy assessment, the applicant must hire a registered BESO energy assessor to complete the assessment. Then, the applicant must submit the energy assessment, a BESO application, and a filing fee to the City of Berkeley before receiving a Compliance Form A.

Alternatively, a seller can apply for a deferral. There are two ways to apply for a deferral:

1. ***Transfer responsibility of BESO compliance from the seller to the buyer.*** Submitting a BESO application and filing fee will generate a Deferral Form C that the seller needs to submit to the title company at closing. The buyer then has 12 months from the sale date to comply with BESO requirements.
2. ***New or planned construction.*** If the house sold is new construction or if there is an extensive renovation where all energy-related equipment and at least half the building envelope is replaced, the reporting requirements may be deferred for up to ten years. The seller must submit a BESO application and all applicable permits that will generate a Deferral Form D to be submitted to the title company at closing.

Additionally, there are three ways a seller can qualify for an exemption:

1. ***Qualifying as a High Performance Building.*** The seller must submit a BESO application and proof that the home has completed an energy efficiency incentive program.

2. ***Being in a particular size category.*** A building qualifies for an exemption if it is greater than 25,000 square feet, under 600[9] square feet, or a duplex with both units under 600 square feet each. The seller must submit a BESO application.
3. ***Being a unit within a larger building.*** Units within larger buildings, such as an individually-owned, attached condo, qualify for an exemption. The seller must submit a BESO application.

Small/Medium Buildings

This category applies to buildings less than 25,000 square feet. The phase in schedule for requirements is as follows:

- July 1, 2020: 15,000 – 24,999 square feet
- July 1, 2021: 5,000 – 14,999 square feet
- July 1, 2022: Less than 5,000 square feet

Upon these deadlines, the buildings in each tier must complete an energy assessment performed by a registered energy assessor; this energy assessment must be completed every 10 years. However, if any of these buildings are sold prior to the phase-in deadline, they must comply with the same Time of Sale requirements to which 1-4 units are subject. To determine the type of assessment required for these buildings, consult the BESO website.[ix]

Buildings with an ENERGY STAR score of 80 or above are exempt from the assessment requirement.

Large Buildings

This category applies to buildings equal to or more than 25,000 square feet. The phase in schedule for requirements is as follows:

- July 1, 2018: Greater than 50,000 square feet
- July 1, 2019: 25,000 – 49,999 square feet

Upon these deadlines, the buildings in each tier must complete an Energy Assessment every 5 years and complete an Annual Benchmarking Report through the ENERGY STAR Portfolio Manager;

This category includes certain exemptions and deferrals:

- Buildings with 50% dedicated to industrial or lab uses are exempt;
- Buildings over 25,000 ft2 are exempt at time of sale;
- Verified High Performance buildings are exempt from the assessment requirement;
- Deferral for Long-Term Tenancy under Rent Control is applicable as defined in BMC chapter 13.76;
- Deferral for New Construction or Extensive Renovation is available for recently constructed or extensively renovated buildings that provide sufficient permitted evidence;
- Low Energy Use Deferral is available to large buildings with a verified or certified U.S. EPA ENERGY STAR Portfolio Manager Performance Score of 80 or greater. A verified Score requires completion of the ENERGY STAR Data Verification by a Professional Engineer or Registered Energy Assessor, excluding the Indoor Air Quality section.

9 As of report writing, 600 square feet is the threshold. Berkeley plans to update this threshold to 850 square feet.

Benchmarking exemptions and deferrals:

- Exemption: If more than half of a building or campus is dedicated to scientific experiments requiring controlled environments or for manufacturing or industrial purposes, it is exempt from benchmarking requirements.
- Data Unavailable Deferral: Energy benchmarking can be deferred if:
  a) A building has less than five residential active utility accounts and the Building Owner can demonstrate that a tenant refused data authorization OR
  b) A building occupant demonstrates to the Administrator that such disclosure may result in the release of proprietary information which can be characterized as a trade secret.

Appendix C: Potential Mandatory Measures for Homes (1–4 Units)

Table 3 below outlines potential mandatory measures that Berkeley could require for homes (1-4 Units).

Table 3: Potential Mandatory Measures for Homes (1-4 Units)

Measure Category	Measure
Electrification	Electric service panel upgrade (200 amp)
Electrification	Electrical work required to install electric appliances that replace gas appliances (e.g. 240 outlets)
Electrification	Electric heat pump space heating/cooling (replacing gas on-ly)
Electrification	Electric heat pump water heater (replacing gas only)
Electrification	Induction stove or range (replacing gas only)
Electrification	Heat pump clothes dryer (replacing gas only)
Electrification	Level 2 electric vehicle charging station
Electrification	Solar panel installation
Resilience	Battery storage installation
Resilience	Solar + Storage
Resilience	Combustion Safety Test
Resilience	Automatic Gas Shutoff Valve
Energy Efficiency	Upgrading insulation
Energy Efficiency	Duct sealing

Appendix D: Sample Home Energy Score

U.S. DEPARTMENT OF ENERGY
Home Energy Score
Know your home. Know your Score.

THIS HOME'S
HOME ENERGY SCORE
6 out of 10

THIS HOME'S ESTIMATED
ENERGY COSTS
$2263 per year

HOME PROFILE

LOCATION:
Berkeley, CA,94703

YEAR BUILT:
1904

HEATED FLOOR AREA:
2552 sq. ft.

NUMBER OF BEDROOMS:
4

ASSESSMENT

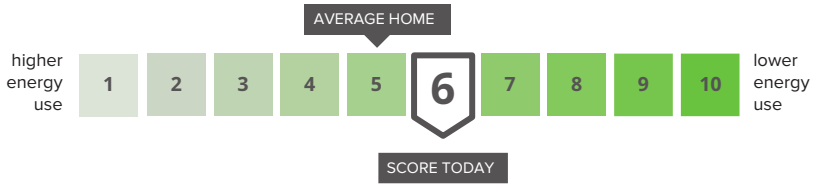
ASSESSMENT DATE:
10/28/2019

ASSESSOR:

PHONE:

EMAIL:

Home Energy Score details



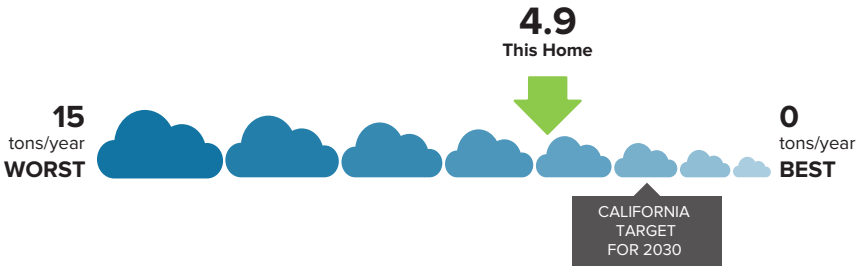
Official Assessment | ID#296958

Home Energy Score is an easy way to see how energy efficient this home is compared to other homes. A higher score is better. This report also contains ways you can make your home more efficient and more comfortable.

How much energy is this home likely to use?

Electric	**8127 kWh/year**	**$1674**
Natural Gas	**419 therms/year**	**$589**
	TOTAL ESTIMATED ENERGY COSTS PER YEAR	**$2263**

This home's carbon footprint



BAYREN
Local Governments Empowering Our Communities

Tackle energy waste today!

Enjoy the rewards of a comfortable, energy efficient home that saves you money.

SCORE TODAY
6
out of 10

- [x] Get your home energy assessment. Done!
- [ ] Choose energy improvements from the list of recommendations below.

  Need help deciding what to do frst? The BayREN Home Upgrade Advisors offer free phone consults with independent expert home advisors. **Call 866-878-6008.**
- [ ] Check out **www.bayareaenergyupgrade.org** for information on Energy Upgrade California® programs and fnancing opportunities.
- [ ] Select a contractor (or two, for comparison) and obtain bids.
- [ ] Perform upgrades and enjoy a more comfortable and energy efficient home.

Energy Improvements, customized for your home.

FEATURE	TODAY'S CONDITION	RECOMMENDED IMPROVEMENTS
Attic Insulation	Insulated to R 11	At least 15% leakage reduction from vintage table defaults
Wall Insulation	Insulated to R 00	Insulate ≥ R 13
Heating Equipment	Central gas furnace 90% AFUE	Ductless heat pump ≥ 9.4 HSPF/17 SEER***
Water Heater	Gas storage 78% EF	Heat pump water heater ≥3.24 EF***

***Electrical panel upgrade may be required for gas to electric change-outs.

Appendix E: Sample Energy Report with Electrification

TUNERGY

Your Energy Audit

nyserda
Energy. Innovation. Solutions.
1-866-NYSERDA • www.nyserda.ny.gov

Home
Sample NYSERDA
15 Glenwood St
Albany, NY 12203

Audit Date
Jul 2, 2015
3:01 pm

Audited By
Sandy Michaels
New York Testing
123 Bell Street
Albany, NY 12203
sandy@snugghome.com

Powered by Snugg Pro

Don & Margery -

Thank you for inviting us to do an energy audit on your beautiful home! We've kept your concerns in mind during our inspection and testing. Let's discuss the recommendations found in this report and see what works best for you.

Thanks,
Sandy

Inside Your Report

TUNERGY

Concerns

We listened to you!
As our client, we want to make sure we are addressing all of your concerns for your home. If we have missed any concerns in this report, please let us know right away.

Air Leaks

Air leaks have been noticed around the window frames, and especially around the front door.

Heating system is old

Furnace needs to be replaced for additional comfort and health & safety issues.

Kitchen gets too hot

The primary culprits are the large number of halogen can lights. Replacing these lights with new efficient bulbs will dramatically reduce the heat created by the lighting.

TUNERGY

Solutions for Your Home

Totals

Cost
$ 20,854

Estimated Savings
$ 1,801 per year

This is an estimate of how much you could save starting in Year 1. Savings will only increase as energy prices rise over the years.

Impact of upgrades

Energy Reduction	42%
Carbon (CO2) Savings	9 tons
Equivalent cars removed from the road	1.9/yr

Call us today to ask a question or discuss the next step!

Details	Installed cost	Approximate annual savings	SIR*
Seal Air Leaks	$1,015	$142.43	2.8
Attic Improvements	$1,883	$140.17	2.2
Cooling System	$3,355	$183.8	0.8
Heating System	$6,288	$263.68	0.8
Thermostat Set Points	$170	$197.02	12.7
Upgrade Water Heater	$1,223	$72.75	0.9
Upgrade Lighting	$77	$238.91	21.9
Insulate Walls	$5,508	$493.01	2.7
Refrigerator	$1,336	$68.86	0.9

* SIR is the Savings to Investment Ratio. Simply put, if the SIR is 1 or greater, then the energy savings from the item will pay for itself before it needs to be replaced again. This metric is used to help prioritize the recommendations by financial merit.

TUNERGY

Seal Air Leaks

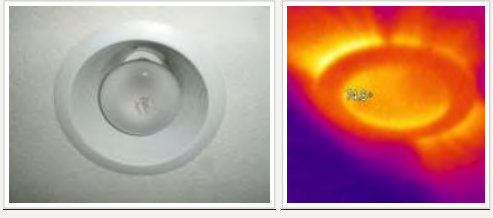
AIR LEAKAGE

Installed Cost
$ 1,015

Energy Savings
Approx. $ 142

Why it matters
Air sealing is typically the most cost effective improvement you can make to your home. To properly seal out air leaks, a large fan called a blower door is used to depressurize your house. This makes air leaks easy to find, so corrective measures can be taken. A good air sealing job will dramatically increase the comfort of your home and help you save significant energy.

Good air-sealing and a continuous air barrier between the attic and the home's conditioned (living) space are important, not only to save energy and reduce fuel bills, but also to prevent moisture problems in the attic.



Air leakage at Can Lights:

Air leakage at Attic Hatch:

Seal Air Leaks

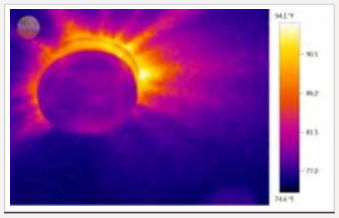
AIR LEAKAGE

Installed Cost
$ 1,015

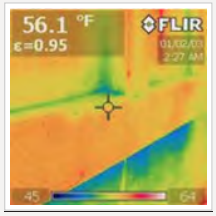
Energy Savings
Approx. $ 142

Why it matters

Air sealing is typically the most cost effective improvement you can make to your home. To properly seal out air leaks, a large fan called a blower door is used to depressurize your house. This makes air leaks easy to find, so corrective measures can be taken. A good air sealing job will dramatically increase the comfort of your home and help you save significant energy.



Air leakage at Smoke Detector:



Air leakage at Windows:

Now & Goal

Details	Now	Goal
Blower Door Reading	3,628 CFM50	2,540 CFM50
Wind Zone	2	N/A
N-Factor	15.0	N/A
Equivalent NACH	0.67 NACH	0.47 NACH
Conditioned Air Volume	21,546 ft^3	N/A
Effective Leakage Area	204 in^2	143 in^2
Equivalent ACH50	10.1 ACH50	7.1 ACH50

Attic Improvements

ATTIC

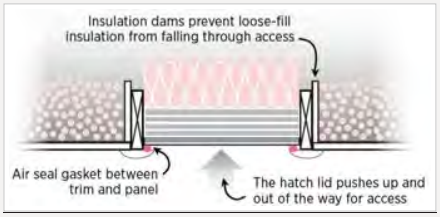
Installed Cost
$ 1,883

Energy Savings
Approx. $ 140

Why it matters

Adding insulation to your attic can lead to a significant reduction in your utility bills. This process is often combined with careful air sealing of the ceiling from the attic side to ensure the new insulation perform at its maximum level.

The current level of insulation in the attic is low and uneven. Taking the R Value to a consistent 49 will vastly improve the comfort and efficiency of your home.



Insulate the Attic Hatch: Openings used for access to the attic such as access panels, doors into kneewalls, or dropdown stairs should be air sealed and insulated.

Now & Goal

Details	Now	Goal
Attic Roof Absorptance	0.92	0.92
Attic Roof Emissivity	0.90	0.90
Modeled Attic Area	1,197 ft^2	1,197 ft^2
Attic Insulation	10 R Value	49 R Value
Radiant Barrier?	No	No

Cooling System

COOLING SYSTEM

Installed Cost
$ 3,355

Energy Savings
Approx. $ 184

Why it matters
Install a more efficient air conditioner or evaporative cooler. Depending on the age of the unit, substantial savings may be gained by replacing it with an Energy Star rated appliance. If it doesn't quite make sense to replace your air conditioner now, be prepared to choose a high efficiency Energy Star unit (14 SEER or higher) when it finally wears out.

If you choose to install / upgrade an AC unit, consider installing an ENERGY STAR rated or higher efficiency unit (14 to 20 SEER). Keep the pad on which the AC unit sits level, shaded and maintain at least one foot from the home and any other obstructions.

Now & Goal

Details	Now	Goal
Cooling Equipment 1		Central AC
Cooling Capacity 1	24,000 BTU/h	24,000 BTU/h
% of Total Cooling Load 1	100 %	100 %
Cooling System Manufacturer 1	Unknown	Unknown
Cooling System Efficiency 1	10.0 SEER	17.0 SEER
Cooling System Model Year 1		2015

Heating System

HEATING SYSTEM

Installed Cost
$ 6,288

Energy Savings
Approx. $ 264

Why it matters
Install a more efficient furnace, boiler or heat pump. Depending on the age of the unit, substantial savings may be gained by replacing it with an Energy Star rated appliance. If you're heating with gas, look for a sealed combustion unit. They're much safer since the exhaust pathway from the unit is sealed and goes directly outside. If it doesn't quite make sense to replace your heating system now, be prepared to replace it with a high efficiency Energy Star unit when it finally wears out.

Upgrade your furnace to a 95-98% efficient, sealed combustion system. You will only be losing 2-5 cents per dollar of heating and you will reduce your risk of carbon monoxide poisoning.

Now & Goal

Details	Now	Goal
Heat Pump Inverter 1		No
Heating Equipment 1		Furnace
Heating Energy Source 1	Natural Gas	Natural Gas
% of Total Heating Load 1	90 %	90 %
Heating Capacity 1	0 BTU/h	50,000 BTU/h
Heating System Efficiency 1	68 AFUE	98 AFUE
Heating System Manufacturer 1	Unknown	Unknown
Heating System Model Year 1		2015
Heat Pump Inverter 2	No	No
Heating Equipment 2	Electric Resistance	Electric Resistance
Heating Energy Source 2		Electricity
% of Total Heating Load 2	10 %	10 %
Heating Capacity 2	100,000 BTU/h	100,000 BTU/h
Heating System Efficiency 2	100 AFUE	100 AFUE
Heating System Manufacturer 2	Unknown	Unknown
Heating System Model Year 2		2015

Thermostat Set Points

THERMOSTAT

Installed Cost
$ 170

Energy Savings
Approx. $ 197

Why it matters
Installing a programmable thermostat (or correctly setting the one you currently have) will help you to use less energy when you're not at home or when you're sleeping.

The location of your thermostat can affect its performance and efficiency. Read the manufacturer's installation instructions to prevent "ghost readings" or unnecessary furnace or air conditioner cycling.

To operate properly, a thermostat must be on an interior wall away from direct sunlight, drafts, doorways, skylights, windows, vents and fans. It should be located where natural room air currents–warm air rising, cool air sinking–occur. Furniture will block natural air movement, so do not place pieces in front of or below your thermostat. Also make sure your thermostat is conveniently located for programming. Energy.gov.

Notes to Homeowners

The improved thermostat settings are the industry standard for energy efficiency. Try these settings to see how they match with your comfort zone, adjust by small degrees if necessary.

Now & Goal

Details	Now	Goal
Heating Setpoint High	68 °F	68 °F
Heating Setpoint Low	68 °F	62 °F
Cooling Setpoint High	75 °F	85 °F
Cooling Setpoint Low	75 °F	78 °F

Upgrade Water Heater

WATER HEATER

Installed Cost
$ 1,223

Energy Savings
Approx. $ 73

Why it matters
High efficient hot water heaters save energy and are safer due to carbon monoxide. Older units run the risk of leaking. Consider replacement if your hot water heater is 13 or more years old.

Tankless water heaters are typically about 20% more efficient than tank-style heaters. If you have hard water, we do not recommend tankless units because minerals from the water can precipitate out inside the heat exchanger, leading to increased maintenance costs.

Now & Goal

Details	Now	Goal
DHW Fuel	Natural Gas	
DHW Type	Standard tank	
DHW Age	21-25	
DHW Location	Garage or Unconditioned Space	
DHW % Load	100 %	100 %
DHW Manufacturer	Unknown	Unknown
DHW Model Year		2015
DHW Energy Factor	56 EF	82 EF
DHW Energy Star	No	Yes

Upgrade Lighting

LIGHTING

Installed Cost
$ 77

Energy Savings
Approx. $ 239

Why it matters
Replacing incandescent bulbs with CFLs or LEDs will save significant energy and replacement costs over time.

Upgrade lighting to CFLs or LEDs. Replace incandescent light bulbs used more than an hour per day with compact fluorescent light bulbs (CFLs), and replace other bulbs with lower-Wattage standard incandescent bulbs. CFLs typically reduce lighting energy use by 75%.

Can lights should be replaced with new LED lights. This will reduce heat gain, save on energy, and prevent any heat related issues with the attic insulation.

Now & Goal

Details	Now	Goal
# of Incandescents	38	4
# of CFLs or LEDs	7	41
% CFL or LED	16 %	90 %

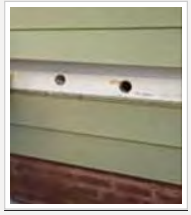
Insulate Walls

WALLS

Installed Cost
$ 5,508

Energy Savings
Approx. $ 493

Why it matters
Insulating your walls can lead to a significant reduction in utility bills. The is done by drilling small holes in the wall cavities either from the inside or outside and filling the space with cellulose, fiberglass, or even foam insulation. If it's time to replace your exterior siding, then be sure to ask your contractor about adding a layer of rigid foam underneath the new sheathing of 1" or more.



Insulate exterior walls:

By “dense packing” cellulose insulation in your wall cavities, air leaks and drafts will be dramatically reduced. To install the insulation, contractors will lightly pry up a few rows of siding of on your house and temporarily remove it. They will then drill a 2” hole in the sheathing for every wall cavity. A blower pushes cellulose insulation at high speed through a hose into the holes, filling the wall cavity. Great care is taken to ensure the cellulose fills into every part of the wall.

Now & Goal

Details	Now	Goal
Exterior Wall Siding	Wood/Fiber Cement siding	
Exterior Wall Construction	Frame	
Wall Cavity Insulation	0 R Value	13 R Value
Wall Continuous Insulation	0 R Value	0 R Value
Modeled Wall Area	2,517 ft^2	N/A

Refrigerator

REFRIGERATOR

Installed Cost
$ 1,336

Energy Savings
Approx. $ 69

Why it matters
Old refrigerators can often cost twice as much to operate as a new refrigerator. Energy Star units can use half the energy as older, less efficient models.

Now & Goal

Details	Now	Goal
Refrigerator Energy Star	No	Yes
Refrigerator Model Year	1990	2015
Refrigerator Manufacturer	Unknown	LG
Refrigerator Usage	840 kWh/yr	461 kWh/yr
Refrigerator Model		LSFS213

Health & Safety

What's This?
These tests are recommended by the Building Performance Institute (BPI). They can help identify potential health and safety concerns in your home.

Install a Low Level Carbon Monoxide Monitor

CO detectors are highly recommended in homes with fuel-burning appliances. The detectors signal homeowners via an audible alarm when CO levels reach potentially dangerous levels.

MOLD & MOISTURE

Moisture control is the key to mold control. Molds need both food and water to survive; since molds can digest most things, water is the factor that limits mold growth. Molds will often grow in damp or wet areas indoors. Common sites for indoor mold growth include bathroom tile, basement walls, areas around windows where moisture condenses, and near leaky water fountains or sinks. Common sources or causes of water or moisture problems include roof leaks, deferred maintenance, condensation associated with high humidity or cold spots in the building, localized flooding due to plumbing failures or heavy rains, slow leaks in plumbing fixtures, and malfunction or poor design of humidification systems. Uncontrolled humidity can also be a source of moisture leading to mold growth, particularly in hot, humid climates.

ELECTRICAL

Have an electrician look at the wall plugs that are located near a water source, to see if a GFCI (ground-fault circuit interrupter) is recommended.

CAZ (combustion appliance zone) test results:

Air Filters

ADDITIONAL NOTES

About this section

Additional notes are miscellanous items that deserve a mention in your home's report.

These mentioned items are not included in the cost or savings of your project.

Why it matters

A dirty filter will slow down air flow and make the system work harder to keep you warm or cool — wasting energy. A clean filter will also prevent dust and dirt from building up in the system — leading to expensive maintenance and/or early system failure. EnergyStar.gov

Check your filter every month, especially during heavy use months (winter and summer). If the filter looks dirty after a month, change it. At a minimum, change the filter every 3 months.

Water Sense

ADDITIONAL NOTES

About this section

Additional notes are miscellanous items that deserve a mention in your home's report.

These mentioned items are not included in the cost or savings of your project.

Why it matters

On a national scale, if every home in the United States installed WaterSense labeled showerheads, we could save more than $2.2 billion in water utility bills and more than 260 billion gallons of water annually. In addition, we could avoid about $2.6 billion in energy costs for heating water. EPA.gov.

Save water and protect the environment by choosing WaterSense labeled products in your home.

Showering is one of the leading ways we use water in the home, accounting for nearly 17 percent of residential indoor water use—for the average family, that adds up to nearly 40 gallons per day.

Rebates & Incentives

1-866-NYSERDA • www.nyserda.ny.gov

The 10% cashback incentive

When you complete energy efficiency upgrades through the Home Performance with ENERGY STAR program, you will be eligible to receive 10 percent of the cost of eligible upgrades back (up to a maximum of $3,000) after the work is complete.

Your contractor can help you verify that your upgrades qualify for this incentive.

For a full list of energy efficiency improvements that qualify for 10% cash back, download this PDF:
bit.ly/ny-eligible-measures

Assisted Home Performance with ENERGY STAR grants

Depending on household income you can qualify for a grant of up to $5,000 to cover up to 50 percent of the cost of energy efficiency upgrades. In most New York State counties, a family of four with a household income up to about $65,000 will qualify.

Two- to four-unit residential buildings with additional income-eligible households can qualify for a grant of up to $10,000.

To learn more go to:http://bit.ly/ny-assisted-3

Get low-interest financing! Two options:

Option 1: On-Bill Recovery Loans with a 3.49% interest rate

An On-Bill Recovery Loan allows you to have your loan payments built into your utility bill. You'll have no extra bills each month and nothing new to keep track of. Even better: your monthly payments will be calculated not to exceed the expected amount your energy upgrades will save you on energy costs. So your energy savings cover most or all of your payment. Interest rates are subject to change.

When you rent or sell your home, you will have the option to transfer the unpaid balance of loan to the new owners or tenants. If you do choose to transfer the balance, you'll be required to provide notice to the new owner or tenant.

On-Bill Recovery Financing requires a declaration to be signed and filed by NYSERDA. The declaration is not a lien on the property but is recorded to provide notice to others of the obligation under the loan note.

Customers of the following utilities are eligible for On-Bill Recovery Financing: Central Hudson Gas & Electric, Con Edison, Long Island Power Authority, NYSEG, National Grid (upstate NY customers only), Orange & Rockland, and Rochester Gas & Electric.

Option 2: Smart Energy Loans with interest rates as low as 3.49%

Smart Energy Loans offer affordable interest rates, flexible terms and simple repayment options. Paying for a Smart Energy Loan is similar to any other conventional loan. You make monthly payments to NYSERDA's loan servicer by check or automatic bank withdrawals. The current interest rate is 3.49% if you pay via automatic bank withdrawals. Interest rates are subject to change

To apply for financing visit Energy Finance Solution:
http://bit.ly/ny-financing

Financing

About financing

The loan scenario(s) listed are examples only and are not a formal offer of financing. Rates, terms and closing costs and eligibility requirements may vary.

Powersaver 203(k) Streamline

Mortgage loans for those looking to purchase and renovate, or refinance and renovate a home. $3,500 of the loan has to go towards qualifying energy upgrades. Low closing costs.

Terms & Conditions

Minimum Loan	$ 3,500
Maximum Loan	$ 35,000
Min. Cash Down	$ 0
Rate	4.00%
Term	360 months
Min. FICO Score	640
Closing costs	N/A

The Math

Job Cost	$ 20,854
Cash down	$ 0
Loan amount	$ 20,854
Your loan payment: (4.00% @ 360 months)	$ 100
Estimated energy savings	$ 150
Estimated net monthly savings	$ 50

Call Lindsay Olsen at 801-803-5495 or email lindsay.olsen@wjbradley.com to apply today!

Elevations Loan - 5 yr

Terms & Conditions

Minimum Loan	$ 500
Maximum Loan	N/A
Min. Cash Down	$ 0
Rate	3.80%
Term	60 months
Min. FICO Score	580
Closing costs	N/A

The Math

Job Cost	$ 20,854
Cash down	$ 0
Loan amount	$ 20,854
Your loan payment: (3.80% @ 60 months)	$ 382
Estimated energy savings	$ 150
Estimated net monthly cost	$ 232

Free energy advising to help you through the process and low interest rates for 3,5,7,10 and 15 year terms.

Metrics

About the metrics

These metrics are for the whole house in a pre and post-retrofit state.

The 'Baseline' savings numbers will likely not be the same as the actual energy consumption of the home. These numbers are weather normalized and then projected based on the Typical Meteorological Year for the past 30 years (TMY30). In other words, this is the energy consumption of the home for a typical year, not the year that the utility bills were from.

Metric	Baseline	Improved	Saved
Fuel Energy Usage therms/year	2,602	1,450	1,152
Electric Energy Usage kWh/year	16,252	10,963	5,289
Total Energy Usage MMBtu/year	316	182	134
Fuel Energy Cost $/year	1,886	1,051	835
Electric Energy Cost $/year	2,968	2,002	966
Total Energy Cost $/year	4,853	3,053	1,800
CO2 Production Tons/year	23.7	14.4	9.3
Payback years			10
Total Energy Savings			42%
Total Carbon Savings			39%
Net Savings to Investment Ratio SIR			1.7
Net Annualized Return MIRR			7.0%

Heating & Cooling Load Calculations		
Heating Load Btu/hr	70,003 Base	51,544 Improved
Cooling Load: Sensible Btu/hr	40,425 Base	30,096 Improved
Cooling Load: Latent Btu/hr	1,022 Base	1,003 Improved
Winter Design Temperature	7° Outdoor	70° Indoor
Summer Design Temperature	85° Outdoor	75° Indoor

Tech Specs

Property Details

Year Built:	1928
Conditioned Area:	2,394 ft²
Includes Basement:	No
Average Wall Height:	8.5 ft
Floors Above Grade:	2.00
Number of Occupants:	2.0
Number of Bedrooms:	4.0
Type of Home:	Single Family Detached
Front of Building Orientation:	East
Shielding:	Normal
Tuck Under Garage:	No

Appliances

Dishwasher Energy Star:	No
Range Fuel Type:	Natural Gas
Dryer Fuel Type:	Electricity
Clothes Washer Type:	Top Load
Clothes Washer Energy Star:	No
Dishwasher Installed?:	Yes

Refrigerators 1

Refrigerator Age:	22-24
Refrigerator Size:	19-21
Refrigerator Energy Star:	No
Refrigerator Usage:	840 kWh/yr

Lighting

% CFLs or LEDs:	N/A
Total # of Light Bulbs:	45

Attics 1

Insulation Depth:	1-3
Insulation Type:	Cellulose

Walls 1

Walls Insulated?:	No
Exterior Wall Siding:	Wood/Fiber Cement siding
Exterior Wall Construction:	Frame

Foundation

Crawlsp Insulatic	Crawlspace is uninsulated, open, or vented
Foundation: Basement:	50 %
Foundation: Crawlspace:	50 %
Foundation Above Grade Height:	2.0 ft
Basement Wall Insulation:	None or Bare Walls

Windows 1

Window Type:	Double pane
Window: North Area Percent:	20 %
Window: East Area Percent:	20 %
Window: South Area Percent:	20 %
Window: West Area Percent:	20 %
North Overhang Depth:	2 ft
East Overhang Depth:	2 ft
South Overhang Depth:	2 ft
West Overhang Depth:	2 ft

Doors 1

Door 1 Type:	Wood

Doors 2

Door 2 Type:	Wood with Storm

Air Leakage

Blower Door Reading:	3,628 CFM50

Heating & Cooling 1

System Name:	Central
System 1 Type:	Both
Heating Energy Source:	Natural Gas
Age of Heating Equipment:	16-40
% of Total Heating Load:	90 %
Dual Equipment:	Furnace / Central AC
Age of Cooling Equipment:	16-20
Cooling Capacity:	24,000 BTU/h
Heating System Efficiency:	68 AFUE
% of Total Cooling Load:	100 %
Duct Location:	Basement (unconditioned)
Duct Insulation:	No Insulation
Duct Leakage:	15% - Somewhat leaky

Heating & Cooling 2

System Name:	Baseboards
System 2 Type:	Heating
Heating Equipment:	Electric Resistance
Age of Heating Equipment:	16-40
% of Total Heating Load:	10 %
Heating Capacity:	100,000 BTU/h

Tech Specs

Thermostat

Programmable Thermostat Installed:	No
Heating Setpoint High:	68 °F
Heating Setpoint Low:	68 °F
Cooling Setpoint High:	75 °F
Cooling Setpoint Low:	75 °F

Water Heating 1

DHW Fuel:	Natural Gas
DHW Type:	Standard tank
DHW Age:	21-25
DHW % Load:	100 %
DHW Location:	Garage or Unconditioned Space
DHW Temperature Settings:	High (140-150 F)
DHW Energy Star:	No

Pool & Hot Tub

Pool:	No
Hot Tub:	No

Electricity

Provider:	Easter
Highest monthly summer electric bill:	341
Lowest monthly electric bill:	136

Primary Fuel: Natural Gas

Highest monthly winter natural gas bill:	250 Dollars
Lowest monthly natural gas bill:	57 Dollars

Contractor Contact Information

Sandy Michaels
New York Testing
BPI Certified
123 Bell Street

Glossary

Annual Fuel Utilization Efficiency (AFUE) The measure of seasonal or annual efficiency of a residential heating furnace or boiler. It takes into account the cyclic on/off operation and associated energy losses of the heating unit as it responds to changes in the load, which in turn is affected by changes in weather and occupant controls.

Annualized Return The return an investment provides over a period of time, expressed as a time-weighted annual percentage. This is the equivalent annual interest rate you would get if you put the same amount of money spent on the energy upgrade into a savings account.

Asbestos Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant, but is no longer used in homes. When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems.

British Thermal Unit (Btu) The amount of heat required to raise the temperature of one pound of water one degree Fahrenheit; equal to 252 calories.

Carbon Monoxide (CO) A colorless, odorless but poisonous combustible gas with the formula CO. Carbon monoxide is produced in the incomplete combustion of carbon and carbon compounds such as fossil fuels (i.e. coal, petroleum) and their products (e.g. liquefied petroleum gas, gasoline), and biomass.

Cashflow When financing energy efficiency improvements, cashflow is the difference between the average monthly energy savings and the monthly loan payment.

Combustion Appliance Zone (CAZ) A contiguous air volume within a building that contains a combustion appliance such as furnaces, boilers, and water heaters; the zone may include, but is not limited to, a mechanical closet, mechanical room, or the main body of a house, as applicable.

Compact Fluorescent Light bulb (CFL) A smaller version of standard fluorescent lamps which can directly replace standard incandescent lights. These highly efficient lights consist of a gas filled tube, and a magnetic or electronic ballast.

Cubic Feet per Minute (CFM) A measurement of airflow that indicates how many cubic feet of air pass by a stationary point in one minute.

Carbon Dioxide (CO2) A colorless, odorless noncombustible gas that is present in the atmosphere. It is formed by the combustion of carbon and carbon compounds (such as fossil fuels and biomass). It acts as a greenhouse gas which plays a major role in global warming and climate change.

Energy Efficiency Ratio (EER) The measure of the energy efficiency of room air conditioners: cooling capacity in Btu/hr dtided by the watts consumed at a specific outdoor temperature.

Energy Factor (EF) The measure of efficiency for a variety of appliances. For water heaters, the energy factor is based on three factors: 1) the recovery efficiency, or how efficiently the heat from the energy source is transferred to the water; 2) stand-by losses, or the percentage of heat lost per hour from the stored water compared to the content of the water: and 3) cycling losses. For dishwashers, the energy factor is the number of cycles per kWh of input power. For clothes washers, the energy factor is the cubic foot capacity per kWh of input power per cycle. For clothes dryers, the energy factor is the number of pounds of clothes dried per kWh of power consumed.

Heating Seasonal Performance Factor (HSPF) The measure of seasonal efficiency of a heat pump operating in the heating mode. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of heat delivered for every watt-hour of electricity used.

Heat Recovery Ventilator (HRV) / Energy Recovery Ventilator (ERV) A device that captures the heat or energy from the exhaust air from a building and transfers it to the supply/fresh air entering the building to preheat the air and increase overall heating efficiency while providing consistent fresh air.

Light Emitting Diode (LED) Lighting An extremely efficient semiconductor light source. LEDs present many ad- vantages over incandescent light sources including lower energy consumption, longer lifetime, improved physical robustness, and smaller size.

Modified Internal Rate of Return (MIRR) This is your return on investment. Roughly speaking, if you invested the same amount of money for this project (listed on this report as the total cost) into a bank account, your equivalent interest rate from all of the energy savings would be the MIRR.

N-Factor A factor of how susceptible your house is to wind, influenced by weather patterns, location, and the number of floors in the home. Used in the calculation of NACH.

Natural Air Changes per Hour (NACH) The number of times in one hour the entire volume of air inside the building leaks to the outside naturally.

Payback Period The amount of time required before the savings resulting from your system equal the system cost.

R-Value A measure of the capacity of a material to resist heat transfer. The R-Value is the reciprocal of the conductivity of a material (U-Value). The larger the R-Value of a material, the greater its insulating properties.

Radon A naturally occurring radioactive gas found in the U.S. in nearly all types of soil, rock, and water. It can migrate into most buildings. Studies have linked high concentrations of radon to lung cancer.

Rim Joist In the framing of a deck or building, a rim joist is the final joist that caps the end of the row of joists that support a floor or ceiling. A rim joist makes up the end of the box that comprises the floor system.

Seasonal Energy Efficiency Ratio (SEER) A measure of seasonal or annual efficiency of a central air conditioner or air conditioning heat pump. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of cooling delivered for every watt-hour of electricity used by the heat pump over a cooling season.

Savings to Investment Ratio (SIR) A ratio used to determine whether a project that aims to save money in the future is worth doing. The ratio compares the investment that is put in now with the amount of savings from the project.

Appendix F:
Potential Trade Professional Platform Workflow & Features

If a trade professional platform were implemented, a potential workflow is outlined in Figure 2 below.

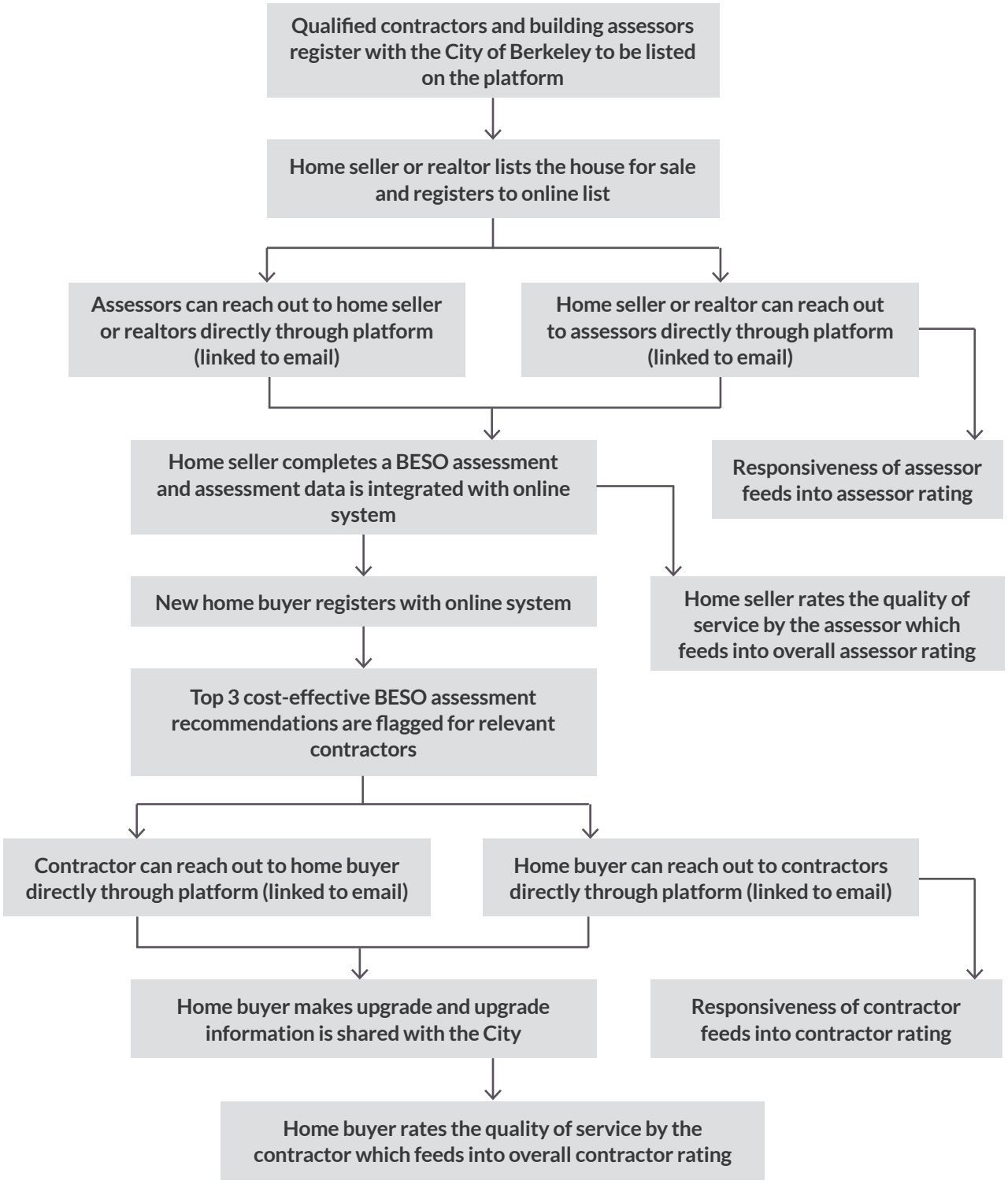


Figure 2: Potential Trade Professional Platform Workflow

Each of the potential workflow features that is associated with an online trade professional platform and their benefits are listed in Table 4 below.

Table 4: Trade Professional Platform Features and Benefits

Platform Feature	Benefits
Qualified contractors and building assessors register with the City of Berkeley to be listed on the platform	• Requires certain qualifications specified by the City • Provides baseline level of quality • Ensures that Berkeley can track whether there are contractors who can perform all possible upgrades recommended through BESO
Home seller or realtor lists the house for sale and registers to online system	• Homeowner or realtor registers to one platform that will contain information about assessors, the assessment completed on the home, and any potential upgrades they might want to make before selling the home
Assessors can reach out to home seller or realtor directly through platform (linked to email)	• Minimizes homeowner or realtor effort needed to determine bid estimate
Home seller or realtor can reach out to assessors directly through platform (linked to email)	• Allows for consumer choice when finding assessors
Responsiveness of assessor feeds into assessor rating	• Incentivizes assessors to respond promptly • Helps ensure home sale process is not hindered
Home seller completes a BESO assessment and data is integrated with online system	• Trade professional platform can be linked to new online application system which ensures multiple aspects of the program are integrated in one online system
Home seller rates the quality of service by the assessor which feeds into overall assessor rating	• Identifies both outstanding and underperforming assessors • Incentivizes assessors to provide quality service
New home buyer registers with online system	• New homeowner can easily see home evaluation information online and the potential upgrades they can make to their home • Ensures the data obtained by seller is consistent with the data that new homeowner receives
Top 3 cost-effective BESO assessment rec-ommendations are flagged for relevant contractors	• While some upgrades may be cost-effective, the upfront cost for the top 3 may vary so it is important to give a variety of options • Using top 3 recommendations gives the home or building owner the option to do one or more upgrades
Contractor can reach out to home buyer directly through platform (linked to email)	• Incentivizes another stakeholder in the BESO process to be involved • Minimizes home or building owner effort needed to determine bid estimate
Home buyer can reach out to contractors directly through platform (linked to email)	• Identifies home or building owners who are motivated to make upgrades • Allows for consumer choice when finding contractors
Responsiveness of contractor feeds into contractor rating	• Incentivizes contractors to respond promptly • Home or building owners receive prompt feedback when the BESO assessment is still fresh in their minds
Home buyer makes upgrade and upgrade information is shared with the City	• Building upgrade data is shared with the City • Data can be used to calculate emissions reductions and track electrification progress
Home buyer rates the quality of service by the contractor which feeds into overall contractor rating	• Identifies both outstanding and underperforming contractors • Incentivizes contractors to provide quality service

Appendix G: Benchmarking and Disclosure Programs

Table 5 below shows certain attributes of benchmarking and disclosure programs across the United States.

Table 5: Examples of Benchmarking and Disclosure Programs[x]

Jurisdiction	No. of Buildings	Area (Million Sq. Ft.)	Average Building size	Penalties?	Compliance Rate
Atlanta	2,900	402	13,862	Yes	NA[10]
Austin	2,800	113	4,036	Yes	NA
Berkeley	257	13.7	5,331	No	NA
Boston	1,600	250	15,625	Yes	73%
Boulder	475	26	5,474	Yes	NA
California	20,573	2400	11,666	Yes	NA
Cambridge	1,100	78	7,091	Yes	95%
Chicago	3,500	900	25,714	Yes	84%
Denver	3,000	360	12,000	No	NA
Evanston	557	45.6	8,187	Yes	NA
Kansas City	1,500	400	26,667	Yes	NA
Los Angeles	14,000	900	6,429	No	NA
New York City	33,147	2800	8,447	Yes	87%
Orlando	826	125.6	15,206	No	NA
Philadelphia	2,900	390	13,448	Yes	91%
Pittsburgh	861	164	19,048	NA	NA
Portland, ME	284	NA	NA	Yes	NA
Portland, OR	1024	87	8,496	Yes	NA
San Francisco	2312	203	8,780	Yes	NA
Seattle	3347	269	8,037	Yes	99%
Washington D.C.	2000	357	17,850	Yes	89%
Washington State	4600	247	5,370	No	N/A

10 Not available.

Appendix H: Performance Requirements in Other Cities

Table 6 below outlines the performance requirements for certain cities' programs across the United States. Berkeley could use these as a guide for requiring mandatory/prescriptive building tune-up measures.

Table 6: Performance Requirements in Other Cities

City	Requirement
Seattle	Requires building tune-ups every five years for commercial buildings 50,000 square feet (sf) or larger, excluding parking.
Los Angeles	Beginning in 2021, privately owned buildings more than 20,000 square feet in the City of Los Angeles must achieve certain efficiency targets or perform audits and retro-commissioning on a 5-year cycle
San Jose	Starting in 2021, if a building demonstrates that it meets key performance standards through yearly benchmarking, it may submit a Performance Verification Report. If a building is not able to meet these standards, it can perform an energy audit, returning, or targeted efficiency upgrade to im-prove performance.
Philadelphia	Mandates all nonresidential buildings 50,000 square feet and larger to either submit a certification of high energy performance to the City's office of Sustainability or conduct tune-up to bring existing building energy systems up to a state of good repair. They also conducted a pilot in city-owned buildings to quantify potential cost savings
New York City	Requires all buildings larger than 50,000 square feet to perform an energy audit and retro-commissioning every 10 years.
Boston	The Boston City policy requires owners of large and medium-sized buildings (>35,000 sq. ft.) to report annual energy and water use while also requiring those buildings to complete a major energy savings action or energy assessment every five years. This requires the building owners report the way they are improving their energy performance which in-cludes by lowering their energy usage, decreasing reliance on fossil fuels or getting an energy assessment. It also requires newly constructed building's report of its energy use for the first full calendar year after receiving a Certificate of Occupancy.

Appendix I: Sample Large Building Measures

Table 7 below shows various examples of large building measures that Berkeley could provide to large building owners in order to motivate them to pursue energy upgrades.

Table 7: Sample Large Building Measures

Measure Type	Measure Description	Strategy
No Cost/Low Cost	• Verify setpoints in consistence with facility requirement • Implement occupied and unoccupied set points • Implement reset strategies based on the space load and or outside condition • Check for economizer operation and modify setpoints to reflect the current facility requirement • Identify and arrest air, water and refrigerant leakages • Implement HVAC unit tune-up to increase the operating efficiency • Identify and implement preventive maintenance procedures • Install timers if appropriate	Building Tune-up/Retune (payback less than 1 year)
Medium cost measures	• Rezone, combine zones or separate zones to make better use of system loading • Calibrate, replace and relocate sensors if necessary • Check and insulate/reinsulate piping and ducting • Install VFDs if the system operates at part load majority of the time. • Check building air leakage and mitigate	Large tune-up (Payback less than 3 years)
Investment grade measures	• Upgrade windows, add window film, add insulation • Conduct envelope and mechanical system air leakage testing and seal the openings. • Recalculate the current cooling and heating load, right size and replace aged equipment • Install cost effective heat recovery devices to reduce the load on the selected system • Install air and water source heat pumps, geothermal heat pump and heat pump water heaters. • Install/upgrade smart control system • Track energy and demand through EMS system and integrate on-demand load curtail strategies	System/equipment replacement and/or ems installation (Payback over 5 years)

Appendix J: Sample of Current PG&E Rebates

Table 8 contains specific examples of current PG&E rebates available under various programs. This list is not exhaustive but this information is an example of what can be used to educate building owners.

Table 8: Select Examples of Current PG&E Rebates

Incentive Type	Measure	Incentive Amount
Product-specific	HVAC Rebates: • VFDs for HVAC fans • Advanced rooftop HVAC controls	• $80/hp for VFDs • Advanced rooftop HVAC controls: up to $1,500 for advanced digital economizer controls; $600 for CO2 sensors; up to $155/ton and $194/ton for enhanced ventilation control for packaged HVAC with and without high efficiency supply fan motors
	Refrigeration Rebates: • Anti-Sweat Heater controls (ASH) • High efficiency refrigeration display cases with special doors • Display cases for open multi-deck replacement	• $25/linear ft for ASH controls • $75/linear ft for refrigeration cases • $175/linear ft and $75/linear ft for low and medium temperature open multi-deck replacements
	Commercial cooling equipment: refrigerators, freezers and ice machines	Up to $350/unit
	Interior high-bay and low-bay LED lighting	Up to $40/ fixture
Custom Retrofit[xi]	Custom incentives are based on calculated kWh, kW, and therm savings; they are determined by whether the savings are to-code, above code, or whole building normalized metered energy	• $0.12/kWh savings for above code and whole building normalized metered energy consumption • $75/kW, $150/kW and $200/kW savings for to code, above code, and whole building metered energy cases, respectively • $0.50/therm, $1.25/therm and $1.75/therm savings for to code, above code, and whole building metered energy cases, respectively
Retro-commission-ing[xii]	One or more of the following measures is used to fine-tune building systems: • Chiller/Boiler optimization; • Reduce ventilation; • Decrease supply air pressure set-point and system rebalancing; and/or • Aligning zone temperature to building's schedule	• $0.06/kWh savings • $0.50/therm savings • $75/on-peak kW savings
Energy Storage and Generation [xiii]	Generation – three-step incentive based on total generation per site: • Waste heat to power, • Combined heat and power (CHP) • Fuel cell (electric only)	Incentive/W generation: • From waste heat: $0.60, $0.50 and $0.40 • From CHP and Fuel Cell: up to $1.20, $1.10 and $1.00
	Storage – five-step incentive based on total storage capacity per site	Incentive/Wh storage: $0.40, $0.35, $0.30, $0.25, $0.20

Endnotes

i BEI Berkeley Market Segmentation Analysis and Discussion.

ii https://beneficialelectrification.com/faqs.

iii https://www.chicago.gov/city/en/progs/env/building-energy-benchmarking---transparency.html.

iv https://www.abettercity.org/docs/06.2012%20-%20Benchmarking%20report%20-%20Final.pdf.

v https://www.cacx.org/resources/documents/CA_Commissioning_Guide_Existing.pdf.

vi https://www.energy.ca.gov/reports/efficiency_handbooks/400-00-001D.PDF.

vii https://www.boma.org/BOMA/Research-Resources/1-BOMA-Reports/BEPCResources.aspx.

viii https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/BESO%20Evaluation%20Recommendations%20-%20Assessor%20Meeting.pdf.

ix https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Assessment%20Requirements%20Chart_current.pdf

x https://emp.lbl.gov/sites/default/files/lbnl_benchmarking_final_050417_0.pdf.

xi https://www.pge.com/en_US/large-business/save-energy-and-money/business-solutions-and-rebates/product-rebates.page.

xii https://www.pge.com/en_US/large-business/save-energy-and-money/facility-improvement/retrocommissioning.page.

xiii https://www.pge.com/en_US/small-medium-business/energy-alternatives/private-solar/understand-the-solar-process.page.

04

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To: Honorable Members of the City Council Facilities, Infrastructure, Transportation, Environment, & Sustainability (FITES) Policy Committee
From: Vice Mayor Sophie Hahn
Subject: Bright Streets Initiative
Date: March 5, 2020

On February 6, 2020, the Facilities, Infrastructure, Transportation, Environment, & Sustainability (FITES) Policy Committee held a discussion on the Bright Streets Initiative, an item introduced by Vice Mayor Sophie Hahn and Councilmember Kate Harrison to address the many street markings, signs, and curbs throughout the City of Berkeley that have faded and/or fallen into disrepair.

At that time, the Committee discussed four areas for possible action:

1. Paint all crosswalks and all other street markings, clarify and/or improve traffic signage and paint curbs (and other elements such as lightpoles, utility boxes, etc.) on streets within a three-block radius of all Berkeley public schools, prior to August 17, 2020, the first day of the 2020-21 School Year;
2. In the near to medium-term, paint all crosswalks, midlines, bike lanes, and other street markings, clarify and/or improve traffic signage, and paint curbs along collector and arterial streets throughout Berkeley, prioritizing high-volume pedestrian areas and commercial districts;
3. Adopt and apply uniform design standards for painting crosswalks, midlines, bike lanes, and other street markings; and
4. Identify funding source(s) for completing this work.

On March 3, Vice Mayor Hahn met with Director of Public Works Phil Harrington to discuss all four of these areas for possible action. It was clarified that this item seeks a one-time "refreshment" of street markings and signage, using one-time funds. Once refreshed, existing funds for maintenance should be adequate to maintain markings, signage and other elements at a much higher level than is currently possible.

The following is CM Hahn's summary of the discussion; Director Harrington will provide clarifications, if any, at the FITES meeting (time was too short to circulate this memo for his review):

1. Completing the requested work around Public Schools by the end of the summer break should be possible with a combination of City crews and on-call contractors. Some funding for this work may already be available, but completing all of it will likely require a new allocation. We should consider possible funds which could be allocated in the AAO#2 or FY2021 budget processes. Mr. Harrington will work on rough estimates for completion of this work.

2. Completing work on additional streets is also possible, and could be done with one or a series of "one time" infusions of funding. The following prioritization was discussed:
    a. Areas around public buildings with high foot traffic; Libraries, Senior Centers, Recreation Centers, etc.
    b. Arterial streets; which also largely coincide with high injury corridors as well as Commercial Districts
    c. Collector streets

    Bike boulevards and networks could also be considered for prioritization. Funding would need to be identified and allocated; work could be done over a few years.

3. Staff is already developing, and could and present to this Committee for review, design standards for City crosswalks and other street markings, taking into account both safety and aesthetics. Such standards would recognize that crosswalk design on high-volume corridors and commercial districts may differ from such designs in residential and other areas.

4. Possible funding sources would be similar to those being explored by the FITES Committee, including Gas Tax, Parking Fines and other sources.

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ACTION CALENDAR
December 10, 2019

To: Honorable Members of the City Council
From: Councilmembers Sophie Hahn and Kate Harrison
Subject: Bright Streets Initiative

RECOMMENDATION

1. Refer to the City Manager to paint all crosswalks, midlines, bike lanes, and other street markings, clarify and/or improve traffic signage, and paint curbs along collector and arterial streets throughout the City of Berkeley, and within a three-block radius of all Berkeley public schools, to improve safety and support Vision Zero goals. Streets, signage, and curbs that have been redone in the past three years and remain in very good condition need not be repainted and/or replaced.
2. Such work to be completed prior to commencement of the 2020-21 Berkeley Public School Year.

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.

Although funds available for paving and street rehabilitation have increased since 2011, thanks in large part to voter-approved measures, they remain inadequate to maintain the street and road conditions necessary to ensure safety in the City of Berkeley.

In light of the City's limited paving budget, and the urgent need to move forward on the Berkeley Vision Zero Program's strategy to eliminate traffic fatalities and injuries, while increasing safe, healthy, equitable mobility for all, this item provides a rapid and less expensive, relatively easy-to-implement, measure to improve visibility of street markings and signage to guide vehicles, bicyclists, and pedestrians to promote orderliness and safety.

ENVIRONMENTAL SUSTAINABILITY

Improved street markings and signage leads to better fuel efficiency, and encourages people to walk or ride a bicycle rather than drive, and therefore will result in less greenhouse gas emissions from vehicles.

FISCAL IMPACTS
Funding for painting of crosswalks and curbs, and posting of signage, has already been allocated.

CONTACT INFORMATION
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05

Cheryl Davila
Councilmember
District 2

REVISED AGENDA MATERIAL

Meeting Date: September 16, 2020

Item Description: Initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency

Submitted by: Councilmember Cheryl Davila

Revisions: 1. Changed the capitalization of certain terms; 2. Added the date 2025 by which the city will exclusively sell sustainable products and directed the city staff to develop a set of ordinances to make this so. 3. The City Adopts a Just Transition to a Regenerative Economy as an orienting framework for climate action; 4. City will create a trans-national task force among governments who have declared a climate emergency; 5. City will create a regional and California based task force to address the climate emergency; 6. Both task forces will have the purpose of co-executing a just transition to a regenerative economy and will function until 2050; 7. added more names of ecosystems to be recognized and afforded rights as examples; 8. The language community engaged was added to emphasize that a citywide just transition in Berkeley requires a profound cultural shift in that citizen participation is required for success. 9. Numerous edits to clarify the original intent of the resolution.

Item Subject updated to: 1. The terms Just Transition and Regenerative Economy refer to specific frameworks and definitions and are thus capitalized; 2. The city hosts a variety of businesses and services which sell products which contribute to environmental degradation and negative health impacts. Directing the city manager to develop a series of ordinances to remove such products from the city by a certain date allows the originally intended language of accelerating a transition to a circular economy more concrete; 3. Ideally a transition to sustainability is a given, unfortunately we cannot take this for granted. Further there are many transition scenarios that are not explicitly just by design. Only a just transition which explicitly and intentionally reverses existing inequities will improve the living conditions of marginalized people, ecosystems and wildlife to the maximal extent possible; 4. There are thousands of governments who have formally declared a climate emergency, in total these governments which include whole countries cover a significant portion of the world's population, a significant portion of the world's economy, and cumulatively can have a profoundly positive impact. Because 2050 is the conventional date by which sustainability is to be achieved in many governments this date was selected as the length of time this trans-national network will be sustained; 5. The revision that the City of Berkeley will create a regional/statewide task force to be sustained by 2050 is for the purpose of organizing 25 cities and counties who have explicitly declared a climate emergency and responded to Berkeley's call for regional collaboration in the Bay Area. A regional/statewide task force will be necessary for navigating the shift to a more sophisticated ecosystem-resilience management of governance called bio-regional governance in the resolution; 6. The City of Berkeley will put forth to the trans-national and statewide task forces the framework of a Just Transition as an orienting ethos and a Regenerative Economy as a framework for the collective aim of the task forces; 7. Affording critical ecosystems in and around the Bay Area with rights will ensure their protection, thus a couple examples were added; 8. was added to emphasize that a citywide just transition in Berkeley requires a profound cultural shift in that citizen participation is required for success; 9. Numerous content edits were provided to clarify the original intent of the resolution.

Cheryl Davila
Councilmember
District 2

CONSENT CALENDAR
July 28, 2020

To: Honorable Mayor and Members of the City Council

From: Councilmember Cheryl Davila

Subject: Initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency

RECOMMENDATION
Adopt a resolution to initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency, and taking the following actions:

1. The City of Berkeley recognizes that attempting to be sustainable is not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, and resource allocation to be socially and environmentally positive and will invest in a regenerative whole city infrastructure, policy, development and design process.
2. The City of Berkeley following the lead of Amsterdam and other cities will join in an attempt to embrace doughnut economics, which, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay area bioregion.
3. The City of Berkeley will accelerate the transition to a zero-waste cradle to cradle circular economy.
4. All City of Berkeley commissions shall propose city policies, procedures and programs to enact a just transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction of Berkeley and Bay Area residents.
5. The City of Berkeley will create a city commission responsible for planning and implementing a just transition to a regenerative economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses.
6. The City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, social inequality, public health risks, and global warming.
7. The City of Berkeley calls for a regional collaborative effort to begin as soon as possible and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a just transition plan to the regenerative economy here in the Greater Bay Area through a regional green new deal.
8. The City of Berkeley urges all neighboring governmental agencies (including local, state and federal) to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, public health risks, and global warming.
9. The City of Berkeley calls on governments who have declared a climate emergency and who broadly recognize the immense challenge facing humanity to join together in

collaborative exchange and begin a shared transitional peace effort in moving their immediate societies and economies toward ethical and regenerative trajectories.

10. The City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary and local environmental and social boundaries, focuses on human and ecological flourishing, furthers a regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and achieves sustainable transition to avert climate catastrophe in the near and long term.
11. The City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts.
12. The City of Berkeley recognizes the importance of Indigenous leadership in designing and implementing a regenerative economy in Berkeley, the Greater Bay Area, and the World, and shall invite delegates from Indigenous communities to all stages of the planning and implementation process.

BACKGROUND

In addition to the massive worldwide health crisis, COVID-19 also caused a slow down to the global economy. Governments around the world have begun to and are planning to spend trillions to invest in economic recoveries. There is a time-sensitive need to prevent a carbon rebound and prevent a return to extractive overconsumption in order to avert climate catastrophe and secure a just future for humankind and wildlife. Berkeley as the third city to recognize we face a climate emergency has an opportunity and responsibility to lead and collaborate effort with over 1772 cities, counties, and countries who have formally recognized and declared a climate emergency. Over 102 municipalities in the United States, Bay Area have declared a climate emergency and called for a regional collaborative effort that has not yet begun. For the Bay Area to do its part for the world it must have a regional plan to achieve regeneration and sustainability, the City of Berkeley has a role and responsibility in leading this effort.

In leading this effort, Berkeley must recognize and address the following issues: (1) Climate change and its connection to public health (i.e., resurgence of diseases and pandemics, compounded effects on low income, people of color, and other groups systematically disenfranchised), (2) Injustice of the pre-COVID-19 economic and political system, and (3) a just transition to a sustainable and regenerative economy.

Climate change and harmful public health issues have a positive correlation. Even if reasonably curbed, global warming effects in the near future include increased danger from record breaking wildfires, increased oceanic storms potentially causing $1 billion worth of damage to public infrastructure and coastal real estate in the U.S.[1], forced migration for up to a billion climate refugees by 2050[2], increased exposure to diseases, loss of arable farm land, increased death related to heat stress[3], scarcity of freshwater, and further extinction of wildlife and biodiversity threatening the entire population of the world. More specific to the greater Bay area, the increased air pollution results in higher vulnerability to infectious viral respiratory illnesses, and

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[1] https://www.ucsusa.org/resources/underwater

[2] https://unu.edu/media-relations/media-coverage/climate-migrants-might-reach-one-billion-by-2050.html

[3] https://www.nature.com/articles/nclimate3322.epdf?sharing_token=MuYgnDiD-ztxrwuEdc-3xtRgN0jAjWel9jnR3ZoTv0P1ZmqVLxKfxqQX-KqJzVRLBBVboAWW8gu7iH3qRbNOymWZ_WLKYDK4-9wUkfwjoVC5-B45GtJEP2hxXrl49lGj-ukRYlR0z5H0Ps9kJtFARSUhBqgg4Q3sT1BsLgpXbQUGDQWRvtvQBvQRmVVAfq-OHUCsqHStoFZ0JZRaGO91BHNhojMkyy0ysY-TI9zjISCKsuIlA9wdl3ohvm8mQMdWbyqk-9ol7o9g_2CJmFBeCsrualCAY-UnopfvSUmuidWbuAYOxifLoTWRbj2rCF_YwNh_INWWYrNDLcsrQoHUOyyPwf02XWGva7D8jQiREZU%3D&tracking_referrer=www.theguardian.com

low income neighborhoods systematically located close to oil refineries are disproportionately and compactedly affected[4].

Due to a history of imperial dominance the United States has forcibly positioned itself to consume an unsustainable and inequitable portion of the world's resources. We must recognize that San Francisco Bay Area, California, and the United States are historic beneficiaries of hundreds of years of enslavement of African people, genocide of Indigenous peoples, economic exploitation of the Global South and numerous unjust wars which has afforded it the ability to consume an unsustainable and inequitable portion of the world's resourcesat the expense of people of color worldwide, the earth and American people.

A Just Transition to a Regenerative Economy as championed by Movement Generation and GrassRoots Global Justice is a framework for achieving a regenerative economy that: focuses on Indigenous and Tribal Sovereignty, Justice for Black and Immigrant Communities, Just Transitions for Workers and communities impacted by extractive industries; reinvests in environmental sacrifice zones and communities and healthcare for all; ensures a home guarantee, further democracy in energy, food and land sovereignty, equitable clean energy and emissions free transit, a just recovery in the face of diverse forms of disasters; and advances feminist economies and regenerative finance.

The City of Berkeley should become a model post-COVID-19 city by creating a regenerative economy that reverses a history of colonization, wealth extraction and globalization, de-incarcerates and de-militarizes community life, makes reparative investments in marginalized communities, makes reparations for the descendants of enslaved persons for providing generations of free labor, supports Indigenous peoples and tribal nations in land reclamation and governance of their rightful lands, organizes workplaces and communities to collectively self govern, shifts means of production to works and communities, divests from fossil fuels and other extractive economies, invests in common access to energy, food, housing, and advances public dollars to build community wealth toward reversing inequality.

FINANCIAL IMPLICATIONS
To be determined.

ENVIRONMENTAL SUSTAINABILITY
Go beyond sustainability to embrace regenerative and restorative practices as necessary to achieve sustainability. Do a whole city community participatory design on how to shift the City into a net regenerative ecological and social impact.

CONTACT PERSONS
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Councilmember District 2
510.981.7120
cdavila@cityofberkeley.info

ATTACHMENTS:
1. Resolution

[4] John Loike and Robert Pollack, "*What We Can Do to Preserve Our Clean Air;"* Bo Peiter Johannes Andree, "Incidence of Covid-19 Connections with Air Pollution Exposure: Evidence from the Netherlands." 4-7.

RESOLUTION NO. XXXX

A RESOLUTION OF THE CITY COUNCIL FOR THE CITY OF BERKELEY TO INITIATE A CITYWIDE, REGIONAL AND INTERNATIONAL JUST TRANSITION TO A REGENERATIVE ECONOMY TO ADDRESS THE CLIMATE EMERGENCY

WHEREAS, the City of Berkeley was the third city in the world to have declared a climate emergency in June 2018, calling for a just transition and regional collaborative effort in the San Francisco Bay Area as well as a statewide, national and global effort to immediately end greenhouse gas emissions; and

WHEREAS, the University of California[5] and cities of Richmond, Oakland, Hayward, El Cerrito, Fairfax, Sebastopol, San Jose, Petaluma, Cupertino, Alameda, San Anselmo, Benicia, Cloverdale, Cotati, Healdsburg, Santa Rosa, Windsor, Menlo Park, Santa Cruz and the counties of San Francisco, Santa Cruz, San Mateo, Santa Clara and Sonoma have responded by declaring we face a climate emergency and joining the call for a regional collaborative effort in the San Francisco Bay Area; and

WHEREAS, there is not a focused collaborative implementation plan in sight regionally or internationally amongst the thousands of universities and governments across the globe that have declared a climate emergency; and

WHEREAS, emissions need to intentionally fall between 2020 - 2030 are a critical frame wherein emissions must sharply and permanently fall to minimize climate catastrophe and meet internationally agreed upon targets which are insufficient to protect people from climate impacts; and

WHEREAS, governments are already spending or planning to spend $9 trillion or more globally in the next few months on rescuing their economies,[6] during the same timeframe that addressing the root causes of global warming is required for meaningful action; and

WHEREAS, returning to a pre-COVID-19 global economic system, which is designed for unlimited growth on a finite planet requiring more extraction, production and consumption of materials and labor than the earth or people can handle, is a recipe for destruction; and

WHEREAS, a transformative economic intervention specifically designed to address the climate emergency and deal with the COVID-19 economic impacts is fully justified by the imminent and time-sensitive existential threat both crises pose; and

WHEREAS, the traditional land management and stewardship methods of Chochenyo, Muwekma, Karkin, Lisjan, Ohlone and other neighboring Indigenous peoples serve as the original design for a regenerative economy on the lands now occupied by the nine counties of the SF Bay Area; and

WHEREAS, legally recognizing the inherent rights of nature such as the Bay, is necessary to establish precautionary and restrictive measures to prevent human activities from causing additional harms to water, air, soil, species, ecosystems or ecological cycles on both local and global scales; and

WHEREAS, for the Greater Bay Area to fulfill its responsibility to address global warming without exacerbating a history of racial violence, wealth inequality, and ecological degradation, it must: Implement a Just Transition to a Regenerative Economy; Embrace a doughnut

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[5] https://www.universityofcalifornia.edu/news/university-california-declares-climate-emergency

[6] https://www.theguardian.com/environment/2020/jun/18/world-has-six-months-to-avert-climate-crisis-says-energy-expert

economics[7] wherein the Bay Area brings its overall footprint well within the earth's carrying capacity while meeting the social needs of its residents; phase out the refining, transport, and consumption of fossil fuels and other polluting industries, energies, and waste products; and define the bioregional boundaries upon which the Bay Area attempts to be regenerative and sustainable; and be an accelerator for a circular economic strategies such as cradle-to-cradle design wherein the material streams of waste is designed to be feedstock; lead the world by collaboratively initiating a world-saving transitional effort; sustain focus and unity of purpose in successfully executing a just transition to a regenerative economy until such an economy is fully functioning; and

WHEREAS, a Regenerative Economy as defined by Movement Generation[8] and GrassRoots Global Justice[9] as a framework for achieving a regenerative economy that focuses on: Indigenous and Tribal Sovereignty, Justice for Black and Immigrant Communities, Just Transitions for Workers and communities impacted by extractive industries; Reinvestment in environmental sacrifice zones and communities; Healthcare for all; Ensures a home guarantee; Energy democracy; Food and land sovereignty; Equitable clean energy; Emissions-free transit; Bioregional governance; A just recovery in the face of diverse forms of disasters; and Advances feminist economies; and

WHEREAS, a just transition to a regenerative economy should in practice: Reverse a history of colonization, wealth extraction and imperialistic globalization; Reverse patterns of mass incarceration and demilitarize community life; Make reparative investments in marginalized communities; Make reparations for the descendants of enslaved persons; Support Indigenous peoples and tribal nations in land reclamation and governance of their rightful lands; Organize workplaces and communities to be democratic, equitable and collectively self governing; Shift to cooperative and public ownership of businesses; Divest from fossil fuels and other extractive economic activities; Invest in common access to renewable energy, food, and housing; Advance public dollars to build community wealth reversing inequality; and

WHEREAS, for any transition plan to be successful, it must include: reducing consumption and production of the remaining GHG budget in order to extend our transition timeline; investing in research and innovation to transform major industries; creating an optimal psychological and cultural climate wherein the work of transition can be carried out free from the compounded stress of racism, climate change impacts, income and wealth inequality, jobs loss, COVID-19, and political polarization are relieved; and training and preparation of our workforces for all the skilled labor required for a just transition; enacting regenerative and sustainable constraints for whole societies that are in balance with humans needs, ecosystems and wildlife; and

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Berkeley will initiate a Citywide Just Transition to a Regenerative Economy because this moment in history is our best and minimize climate catastrophe in an attempt to at least meet agreed upon international targets; and

BE IT FURTHER RESOLVED, the City of Berkeley will invest city funds, staff time, and To create a transnational task force focused on coordinating among on governments who have declared a climate emergency to be sustained until 2050;

BE IT FURTHER RESOLVED, the City of Berkeley within the first 90 days will invite all the cities, counties, and institutions such as the UC system to form a regional and statewide task force to oversee a justice oriented evidence based transition to a regenerative economy to be sustained until 2050.

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[7] https://www.amsterdam.nl/en/policy/sustainability/circular-economy/
· https://www.theguardian.com/world/2020/apr/08/amsterdam-doughnut-model-mend-post-coronavirus-economy

[8] https://movementgeneration.org/wp-content/uploads/2016/11/JT_booklet_English_SPREADs_web.pdf

[9] https://ggjalliance.org/programs/a-pathway-to-a-regenerative-economy/

BE IT FURTHER RESOLVED, the City of Berkeley recognizes that attempting to be sustainable is not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, and resource allocation to be socially and environmentally positive and will invest in a regenerative whole city infrastructure, policy, development and design process; and

BE IT FURTHER RESOLVED, the City of Berkeley will join the early adoption of doughnut economics methodology, which, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay area bioregion; and

BE IT FURTHER RESOLVED, the City of Berkeley will accelerate the transition to a zero-waste cradle to cradle circular economy; and

BE IT FURTHER RESOLVED, all city commissions shall propose city policies, procedures and programs to enact a just transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction of Berkeley and Bay Area residents; and

BE IT FURTHER RESOLVED, the City of Berkeley will create a city commission responsible for planning and implementing a just transition to a regenerative economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses; and

BE IT FURTHER RESOLVED, the City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, social inequality, public health risks, and global warming; and

BE IT FURTHER RESOLVED, the City of Berkeley commits to the formation of a co-funded regional collaborative effort to begin as soon as possible and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a just transition plan to the regenerative economy here in the Greater Bay Area through a regional green new deal; and

BE IT FURTHER RESOLVED, the City of Berkeley calls for a regional agencies, cities, and counties to agree on a shared definition of the Bay Area's bioregion, to define the shared limits of our bio-region's carrying capacity and to organize our governance to be bio-regionally regenerative, sustainable, and to define a developmental trajectory that maximizes the health and vitality of the ecosystems, wildlife, and people for generations to come; and

BE IT FURTHER RESOLVED, the City of Berkeley urges all neighboring governmental agencies (including local, state and federal) to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, public health risks, and global warming; and

BE IT FURTHER RESOLVED, the City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary and local environmental and social boundaries of wellbeing and furthers human and ecological flourishing, furthers a regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and achieves sustainability just a just and regenerative transition to bring emissions to zero and adapt to further warming in the near and long term; and

BE IT FURTHER RESOLVED, the City of Berkeley commits to enacting a deep decent emissions scenario radically reducing its environmental footprint aiming for zero in the next 10 years through a real time decadal city wide response network.

BE IT FURTHER RESOLVED, the City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts; and

BE IT FURTHER RESOLVED, the City of Berkeley recognizes the importance of Indigenous leadership in designing and implementing a regenerative economy in Berkeley, the Greater Bay Area, and the World, and shall invite delegates from Indigenous communities to all stages of the planning and implementation process.

Cheryl Davila
Councilmember
District 2

CONSENT CALENDAR
July 28, 2020

To: Honorable Mayor and Members of the City Council

From: Councilmember Cheryl Davila

Subject: Initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency

RECOMMENDATION

Adopt a resolution to initiate a citywide, regional and international Just Transition to a Regenerative Economy to address the Climate Emergency, and taking the following actions:

1. The City of Berkeley recognizes sustainabilityis not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, and resource allocation to be socially and environmentally positive and will invest in a regenerative whole city infrastructure, policy, development and design process.
2. The City of Berkeley following the lead of Amsterdam and other cities will join in an attempt to embrace Doughnut Economics, which, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay Area bioregion.
3. The City of Berkeley will accelerate the transition to a zero-waste cradle to cradle, circular economy by a developing a series of ordinances ensuring only earth friendly products are sold within city limits by 2025
4. All City of Berkeley commissions shall propose city policies, procedures and programs to enact a just transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction from Berkeley and Bay Area residents.
5. The City of Berkeley will create a city commission responsible for planning and implementing a Just Transition to a Regenerative Economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses.
6. The City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the Earth and people from further environmental degradation, social inequality, public health risks, and global warming and urges all neighboring agencies, statewide, national, and international, to do the same.
7. The City of Berkeley will create a regional and statewide collaborative to ensure the maximal climate mitigation and adaptation scenarios to begin as soon as possible and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a Just Transition plan to the Regenerative Economy here in the greater Bay Area through a regional Green New Deal.

8. \
9. The City of Berkeley calls on governments who have declared a climate emergency and who broadly recognize the immense challenge facing humanity to form a transnational task force to be sustained until 2050 to co-execute a shared transitional peace effort in moving their immediate societies and economies toward ethical and regenerative trajectories.
10. The City of Berkeley within the first 90 days will invite all the cities, counties, and institutions such as the UC system to form a regional and statewide task force to oversee a justice- oriented evidence- based transition to a regenerative economy to be sustained until 2050;
11. The City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary and local environmental and social boundaries, focuses on human and ecological flourishing, furthers a regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and fosters an immediate transition to avert climate catastrophe in the near and long term.
12. The City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts.
13. The City of Berkeley recognizes the importance of indigenous leadership in designing and implementing a Regenerative Economy in Berkeley, the greater Bay Area, and the world, and shall invite delegates from indigenous communities to all stages of the planning and implementation process.

BACKGROUND

In addition to the massive worldwide health crisis, COVID-19 also caused a slow down to the global economy. Governments around the world have begun, and are planning, to invest trillions of dollars in economic recoveries. There is a time-sensitive need to prevent a carbon rebound and prevent a return to extractive overconsumption in order to avert climate catastrophe and secure a just future for humankind and wildlife.As the sixth city in the world to recognize that we face a Climate Emergency, Berkeley has an opportunity and responsibility to lead and collaborate the effort with over 1772 cities, counties, and countries that have formally recognized and declared a Climate Emergency. Over 102 municipalities in the United States, 25 of those within the Bay Area and more across the state of California have declared a Climate Emergency and called for a regional collaborative effort that has not yet begun. For the Bay Area to do its part for the world, it must have a regional plan to achieve regeneration and sustainability, the City of Berkeley has a role and responsibility in leading this effort.

In leading this effort, Berkeley must recognize and address the following issues: (1) Climate change and its connection to public health (i.e., resurgence of diseases and pandemics, compounded effects on low income, people of color, and other groups systematically disenfranchised), (2) Injustice of the pre-COVID-19 economic and political system, and (3) a Just Transition to a sustainable and Regenerative Economy.

Climate change and harmful public health issues have a positive correlation. Even if reasonably curbed, global warming effects in the near future include increased danger from record breaking wildfires, increased oceanic storms potentially causing at least $1 billion worth of damage to public infrastructure and coastal real estate in the U.S.,[1] forced migration for up to a billion climate refugees by 2050[2], increased exposure to diseases, loss of arable farm land, increased

[1] https://www.ucsusa.org/resources/underwater

[2] https://unu.edu/media-relations/media-coverage/climate-migrants-might-reach-one-billion-by-2050.html

deaths related to heat stress[3], scarcity of freshwater, and further extinction of wildlife and biodiversity threatening the entire population of the world. More specific to the greater Bay Area, the increased air pollution results in higher vulnerability to infectious viral respiratory illnesses, and low income neighborhoods systematically located close to oil refineries are disproportionately and compactedly affected.[4]

Due to a history of imperial dominance the United States has forcibly positioned itself to consume an unsustainable and inequitable portion of the world's resources. We must recognize that the San Francisco Bay Area, California, and the United States are historic beneficiaries of hundreds of years of enslavement of African people, genocide of Indigenous peoples, economic exploitation of the Global South and numerous unjust wars which has afforded it the ability to consume an unsustainable and inequitable portion of the world's resources at the expense of people of color worldwide, the earth and the American people.

A Just Transition to a Regenerative Economy as championed by Movement Generation and GrassRoots Global Justice is a framework for achieving a Regenerative Economy that: focuses on Indigenous and Tribal Sovereignty, Justice for Black and Immigrant Communities, Just Transitions for workers and communities impacted by extractive industries; reinvests in environmental sacrifice zones and communities and healthcare for all; ensures a home guarantee, greater democracy in energy, food and land sovereignty, equitable clean energy and emissions free transit, a just recovery in the face of diverse forms of disasters; and advances feminist economies,regenerative finance with an emphasis on bio-regional governance.

The City of Berkeley should become a model post-COVID-19 city by creating a regenerative economy that reverses a history of colonization, wealth extraction and globalization, de-incarcerates and de-militarizes community life, makes reparative investments in marginalized communities, makes reparations for the descendants of enslaved persons for providing generations of free labor, supports Indigenous peoples and Tribal Nations in land reclamation and governance of their rightful lands, organizes workplaces and communities to collectively self govern, shifts means of production to works and communities, divests from fossil fuels and other extractive economies, invests in common access to energy, food, housing, and advances public dollars to build community wealth toward reversing inequality.

FINANCIAL IMPLICATIONS
To be determined.

ENVIRONMENTAL SUSTAINABILITY
Go beyond sustainability to embrace regenerative and restorative practices as necessary to achieve sustainability. Do a whole city community participatory design on how to shift the City into a net regenerative ecological and social impact.

CONTACT PERSONS
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ATTACHMENTS:

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[3] https://www.nature.com/articles/nclimate3322.epdf?sharing_token=MuYgnDiD-ztxrwuEdc-3xtRgN0jAjWel9jnR3ZoTv0P1ZmqVLxKfxqQX-KqJzVRLBBVboAWW8gu7iH3qRbNOymWZ_WLKYDK4-9wUkfwjoVC5-B45GtJEP2hxXrl49lGj-ukRYlR0z5H0Ps9kJtFARSUhBqgg4Q3sT1BsLgpXbQUGDQWRvtvQBvQRmVVAfq-OHUCsqHStoFZ0JZRaGO91BHNhojMkyy0ysY-TI9zjISCKsuIlA9wdl3ohvm8mQMdWbyqk-9ol7o9g_2CJmFBeCsrualCAY-UnopfvSUmuidWbuAYOxifLoTWRbj2rCF_YwNh_INWWYrNDLcsrQoHUOyyPwf02XWGva7D8jQiREZU%3D&tracking_referrer=www.theguardian.com

[4] John Loike and Robert Pollack, "*What We Can Do to Preserve Our Clean Air;"* Bo Peiter Johannes Andree, "Incidence of Covid-19 Connections with Air Pollution Exposure: Evidence from the Netherlands." 4-7.

1. Resolution

RESOLUTION NO. XXXX

A RESOLUTION OF THE CITY COUNCIL FOR THE CITY OF BERKELEY TO INITIATE A CITYWIDE, REGIONAL AND INTERNATIONAL JUST TRANSITION TO A REGENERATIVE ECONOMY TO ADDRESS THE CLIMATE EMERGENCY

WHEREAS, the City of Berkeley was the sixth city in the world to have declared a Climate Emergency in June 2018, calling for a just transition and regional collaborative effort in the San Francisco Bay Area as well as a statewide, national and global effort to immediately end greenhouse gas emissions; and

WHEREAS, the University of California[5] and cities of Richmond, Oakland, Hayward, El Cerrito, Fairfax, Sebastopol, San Jose, Petaluma, Cupertino, Alameda, San Anselmo, Benicia, Cloverdale, Cotati, Healdsburg, Santa Rosa, Windsor, Menlo Park, Santa Cruz and the counties of San Francisco, Santa Cruz, Alameda, San Mateo, Santa Clara and Sonoma have responded by declaring that we face a climate emergency and by joining the call for a regional collaborative effort in the San Francisco Bay Area; and

WHEREAS, there is not a focused collaborative implementation plan in sight, regionally or internationally, amongst the thousands of universities and governments across the globe that have declared a climate emergency; and

WHEREAS, 2020 - 2030 is a critical timeframe wherein emissions must sharply and permanently fall to minimize climate catastrophe and meet internationally agreed upon targets which are insufficient to protect people from climate impacts; and

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[5] https://www.universityofcalifornia.edu/news/university-california-declares-climate-emergency

WHEREAS, governments are already spending or planning to spend $9 trillion or more globally in the next few months on rescuing their economies,[6] during the same timeframe that addressing the root causes of global warming is required for meaningful impact; and

WHEREAS, returning to a pre-COVID-19 global economic system, which is designed for unlimited growth on a finite planet requiring more extraction, production and consumption of materials and labor than the earth or people can handle, is a recipe for destruction; and

WHEREAS, a transformative economic intervention specifically designed to address the climate emergency in all of it's dimensions and deal with the COVID-19 economic impacts is fully justified by the imminent and time-sensitive existential threat both crises pose; and

WHEREAS, the traditional land management and stewardship methods of Chochenyo, Muwekma, Karkin, Lisjan, Ohlone and other neighboring Indigenous peoples serve as the original design for a regenerative economy on the lands now occupied by the nine counties of the SF Bay Area; and

WHEREAS, legally recognizing the inherent rights of nature such as the Bay, the Pacific Ocean, Strawberry Creek, the Wetlands, Tilden, and other ecosystems,is necessary to establish precautionary and restrictive measures to prevent human activities from causing additional harms to water, air, soil, species, ecosystems or ecological cycles on both local and global scales; and

WHEREAS, for the greater Bay Area to fulfill its responsibility to address global warming without exacerbating a history of racial violence, wealth inequality, and ecological degradation, it must: implement a Just Transition to a Regenerative Economy; embrace a doughnut economics[7] wherein the Bay Area brings its overall footprint well within the earth's carrying capacity while meeting the social needs of its residents; phase out the refining, transport, and consumption of fossil fuels and other polluting industries, energies, and waste products; and define the bioregional boundaries upon which the Bay Area attempts to be regenerative and sustainable; and be an accelerator for a circular economic strategies such as cradle-to-cradle design[8] wherein the material streams of waste are designed to be nutrients for further ecological reproduction; lead a trans-national task force amongst the 1700+ cities, counties, states and countries who recognize we face a Climate Emergency; sustain focus and unity of purpose in successfully executing a Just Transition to a Regenerative Economy until such an economy is fully functioning; and

WHEREAS, a Regenerative Economy as defined by Movement Generation[9] and GrassRoots Global Justice[10] as a framework for achieving a regenerative economy that focuses on: Indigenous and Tribal Sovereignty, Justice for Black and Immigrant Communities, Just Transitions for Workers and communities impacted by extractive industries; reinvestment in environmental sacrifice zones and communities; Healthcare for All; ensures a home guarantee, energy democracy, food and land sovereignty; equitable clean energy; emissions-free transit; bioregional governance; a just recovery in the face of diverse forms of disasters; and advances feminist economies; and

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6 https://www.theguardian.com/environment/2020/jun/18/world-has-six-months-to-avert-climate-crisis-says-energy-expert

7 https://www.amsterdam.nl/en/policy/sustainability/circular-economy/
· https://www.theguardian.com/world/2020/apr/08/amsterdam-doughnut-model-mend-post-coronavirus-economy

8 https://mcdonough.com/cradle-to-cradle/

9 https://movementgeneration.org/wp-content/uploads/2016/11/JT_booklet_English_SPREADs_web.pdf

10 https://ggjalliance.org/programs/a-pathway-to-a-regenerative-economy/

WHEREAS, a Just Transition to a Regenerative Economy should, in practice: Transform a history of colonization, wealth extraction and imperialistic globalization; Transform patterns of mass incarceration and demilitarize community life; make reparative investments in marginalized communities; make reparations for the descendants of enslaved persons; support Indigenous peoples and Tribal Nations in land reclamation and governance of their rightful lands; organize workplaces and communities to be democratic, equitable and collectively self governing; shift to cooperative and public ownership of businesses; divest from fossil fuels and other extractive economic activities; invest in common access to renewable energy, food, and housing; advance public dollars to build community wealth reversing inequality; and

WHEREAS, for any transition plan to be successful, it must include: reducing consumption and production of the remaining GHG budget in order to extend our transition timeline; investing in research and innovation to transform major industries; creating an optimal psychological and cultural climate wherein the work of transition can be carried out free from the compounded stress of racism, climate change impacts, income and wealth inequality, jobs loss, COVID-19, and political polarization are relieved; and training and preparation of our workforces for all the skilled labor required for a just transition; enacting regenerative and sustainable constraints for whole societies that are in balance with humans needs, ecosystems and wildlife; and

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Berkeley will a citywide community engaged Just Transition to a Regenerative Economy because this moment in history is our best and last opportunity to minimize climate catastrophies in an attempt to at least meet agreed upon international targets; and

BE IT FURTHER RESOLVED, the City of Berkeley within the first 90 days will create a city commission responsible for planning and implementing a Just Transition to a regenerative economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses; and

BE IT FURTHER RESOLVED, the City of Berkeley will invest city funds, staff time, to create a trans-national task force focused on coordinating with governments who have declared a climate emergency to be sustained until 2050;

BE IT FURTHER RESOLVED, the City of Berkeley within the first 90 days will invite all the cities, counties, and institutions such as the UC system to form a regional and statewide task force to oversee a justice-oriented evidence-based transition to a regenerative economy to be sustained until 2050; and

BE IT FURTHER RESOLVED, the City of Berkeley recognizes that attempting to be sustainable is not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, governance culture, and resource allocation to be socially and environmentally positive, participatory and will invest in a centuries long regenerative whole city culture, infrastructure, policy, development and design process; and

BE IT FURTHER RESOLVED, the City of Berkeley will join the early adoption of the doughnut economics methodology to assess its sustainabilitywhich, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay Area bioregion; and

BE IT FURTHER RESOLVED, The City Council directs the City manager to develop a set of ordinances to ensuring only zero-waste, cradle to cradle, non-toxic, earth friendly products are sold within city limits by 2025;

BE IT FURTHER RESOLVED, all city commissions shall propose city policies, procedures and programs to enact a Just Transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction of Berkeley and Bay Area residents; and

BE IT FURTHER RESOLVED, the City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, social inequality, public health risks, and global warming; and

BE IT FURTHER RESOLVED, the City of Berkeley commits to the formation of a co-funded regional collaborative effort to begin and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a just transition plan to the regenerative economy here in the Greater Bay Area through a regional green new deal; and

BE IT FURTHER RESOLVED, the City of Berkeley calls for a bio-regional governance wherein agencies and municipalities define a shared recognition of our bio-region, define its carrying capacity and bring the Bay Area as a whole within the regenerative zone of our local bio-region in order to prioritize the long term resilience and adaptive capacity to coming environmental changes; and

BE IT FURTHER RESOLVED, the City of Berkeley calls for a regional agencies, cities, and counties to agree on a shared definition of the Bay Area's bioregion, to define the shared limits of our bio-region's carrying capacity and to organize our governance to be bio-regionally regenerative, sustainable, and to define a developmental trajectory that maximizes the health and vitality of the ecosystems, wildlife, and people for generations to come; and

BE IT FURTHER RESOLVED, the City of Berkeley urges all neighboring governmental agencies (including local, state and federal) to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, public health risks, and global warming; and

BE IT FURTHER RESOLVED, the City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary and local environmental and social boundaries of wellbeing and furthers human and ecological flourishing, furthers a regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and achieves sustainability through a just and regenerative transition to restore a safe climate and adapt to further warming in the near and long term; and

BE IT FURTHER RESOLVED, the City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts; and

BE IT FURTHER RESOLVED, the City of Berkeley recognizes the importance of Indigenous leadership in designing and implementing a regenerative economy in Berkeley, the greater Bay Area, and the World, and shall invite delegates from Indigenous communities to all stages of the planning and implementation process.

Cheryl Davila
Councilmember
District 2

CONSENT CALENDAR
July 28, 2020

To: Honorable Mayor and Members of the City Council

From: Councilmember Cheryl Davila

Subject: Initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency

RECOMMENDATION
Adopt a resolution to initiate a Citywide, Regional and International Just Transition to a Regenerative Economy to Address the Climate Emergency, and taking the following actions:

1. The City of Berkeley recognizes that attempting to be sustainable is not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, and resource allocation to be socially and environmentally positive and will invest in a regenerative whole city infrastructure, policy, development and design process.
2. The City of Berkeley embraces doughnut economics, which, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay area bioregion.
3. The City of Berkeley will accelerate the transition to a zero-waste cradle to cradle circular economy.
4. All City of Berkeley commissions shall propose city policies, procedures and programs to enact a just transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction of Berkeley and Bay Area residents.
5. The City of Berkeley will create a city commission responsible for planning and implementing a just transition to a regenerative economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses.
6. The City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, social inequality, public health risks, and global warming.
7. The City of Berkeley calls for a regional collaborative effort to begin as soon as possible and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a just transition plan to the regenerative economy here in the Greater Bay Area through a regional green new deal.

8. The City of Berkeley urges all neighboring governmental agencies (including local, state and federal) to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, public health risks, and global warming.
9. The City of Berkeley calls on governments who have declared a climate emergency and who broadly recognize the immense challenge facing humanity to join together in collaborative exchange and begin a shared transitional peace effort in moving their immediate societies and economies toward ethical and regenerative trajectories.
10. The City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary and local environmental and social boundaries, focuses on human and ecological flourishing, furthers a regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and achieves sustainable transition to avert climate catastrophe in the near and long term.
11. The City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts.
12. The City of Berkeley recognizes the importance of Indigenous leadership in designing and implementing a regenerative economy in Berkeley, the Greater Bay Area, and the World, and shall invite delegates from Indigenous communities to all stages of the planning and implementation process.

BACKGROUND

In addition to the massive worldwide health crisis, COVID-19 also caused a slow down to the global economy. Governments around the world have begun to and are planning to spend trillions to invest in economic recoveries. There is a time-sensitive need to prevent a carbon rebound and prevent a return to extractive overconsumption in order to avert climate catastrophe and secure a just future for humankind and wildlife. Berkeley as the third city to recognize we face a climate emergency has an opportunity and responsibility to lead and collaborate effort with over 1700 cities, counties, and countries who have formally recognized and declared a climate emergency. Over 20 municipalities in the Bay Area have declared a climate emergency and called for a regional collaborative effort that has not yet begun. For the Bay Area to do its part for the world it must have a regional plan to achieve regeneration and sustainability, the City of Berkeley has a role and responsibility in leading this effort.

In leading this effort, Berkeley must recognize and address the following issues: (1) Climate change and its connection to public health (i.e., resurgence of diseases and pandemics, compounded effects on low income, people of color, and other groups systematically disenfranchised), (2) Injustice of the pre-COVID-19 economic and political system, and (3) a just transition to a sustainable and regenerative economy.

Climate change and harmful public health issues have a positive correlation. Even if reasonably curbed, global warming effects in the near future include increased danger from record breaking wildfires, increased oceanic storms potentially causing $1 billion worth of damage to public infrastructure and coastal real estate in the U.S.[1], forced migration for up to a billion climate

[1] https://www.ucsusa.org/resources/underwater

refugees by 2050[2], increased exposure to diseases, loss of arable farm land, increased death related to heat stress[3], scarcity of freshwater, and further extinction of wildlife and biodiversity threatening the entire population of the world. More specific to the greater Bay area, the increased air pollution results in higher vulnerability to infectious viral respiratory illnesses, and low income neighborhoods systematically located close to oil refineries are disproportionately and compactedly affected[4].

Due to a history of imperial dominance, the United States has forcibly positioned itself to consume an unsustainable and inequitable portion of the world's resources. We must recognize that San Francisco Bay Area, California, and the United States are historic beneficiaries of hundreds of years of enslavement of African people, genocide of Indigenous peoples, economic exploitation of the Global South and numerous unjust wars which has afforded it the ability to consume an unsustainable and inequitable portion of the world's resources and at the expense of people of color worldwide.

A Just Transition to a Regenerative Economy as championed by Movement Generation and GrassRoots Global Justice is a framework for achieving a regenerative economy that: focuses on Indigenous and Tribal Sovereignty, Justice for Black and Immigrant Communities, Just Transitions for Workers and communities impacted by extractive industries; reinvests in environmental sacrifice zones and communities and healthcare for all; ensures a home guarantee, further democracy in energy, food and land sovereignty, equitable clean energy and emissions free transit, a just recovery in the face of diverse forms of disasters; and advances feminist economies and regenerative finance.

The City of Berkeley should become a model post-COVID-19 city by creating a regenerative economy that reverses a history of colonization, wealth extraction and globalization, de-incarcerates and de-militarizes community life, makes reparative investments in marginalized communities, makes reparations for the descendants of enslaved persons for providing generations of free labor, supports Indigenous peoples and tribal nations in land reclamation and governance of their rightful lands, organizes workplaces and communities to collectively self govern, shifts means of production to works and communities, divests from fossil fuels and other extractive economies, invests in common access to energy, food, housing, and advances public dollars to build community wealth toward reversing inequality.

FINANCIAL IMPLICATIONS
To be determined.

ENVIRONMENTAL SUSTAINABILITY
Go beyond sustainability to embrace regenerative and restorative practices as necessary to achieve sustainability. Do a whole city community participatory design on how to shift the City into a net regenerative ecological and social impact.

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[2] https://unu.edu/media-relations/media-coverage/climate-migrants-might-reach-one-billion-by-2050.html

[3] https://www.nature.com/articles/nclimate3322.epdf?sharing_token=MuYgnDiD-ztxrwuEdc-3xtRgN0jAjWel9jnR3ZoTv0P1ZmqVLxKfxqQX-KqJzVRLBBVboAWW8gu7iH3qRbNOymWZ_WLKYDK4-9wUkfwjoVC5-B45GtJEP2hxXrl49lGj-ukRYlR0z5H0Ps9kJtFARSUhBqgg4Q3sT1BsLgpXbQUGDQWRvtvQBvQRmVVAfq-OHUCsqHStoFZ0JZRaGO91BHNhojMkyy0ysY-TI9zjISCKsuIIA9wdl3ohvm8mQMdWbyqk-9ol7o9g_2CJmFBeCsrualCAY-UnopfvSUmuidWbuAYOxifLoTWRbj2rCF_YwNh_INWWYrNDLcsrQoHUOyyPwf02XWGva7D8jQiREZU%3D&tracking_referrer=www.theguardian.com

[4] John Loike and Robert Pollack, "*What We Can Do to Preserve Our Clean Air;"* Bo Peiter Johannes Andree, "Incidence of Covid-19 Connections with Air Pollution Exposure: Evidence from the Netherlands." 4-7.

CONTACT PERSONS
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ATTACHMENTS:
1. Resolution

RESOLUTION NO. XXXX

A RESOLUTION OF THE CITY COUNCIL FOR THE CITY OF BERKELEY TO INITIATE A CITYWIDE, REGIONAL AND INTERNATIONAL JUST TRANSITION TO A REGENERATIVE ECONOMY TO ADDRESS THE CLIMATE EMERGENCY

WHEREAS, the City of Berkeley was the third city in the world to have declared a climate emergency in June 2018, calling for a just transition and regional collaborative effort in the San Francisco Bay Area as well as a statewide, national and global effort to immediately end greenhouse gas emissions; and

WHEREAS, the University of California[5] and cities of Richmond, Oakland, Hayward, El Cerrito, Fairfax, Sebastopol, San Jose, Petaluma, Cupertino, Alameda, San Anselmo, Benicia, Cloverdale, Cotati, Healdsburg, Santa Rosa, Windsor, Menlo Park, Santa Cruz and the counties of San Francisco, Santa Cruz, San Mateo, Santa Clara and Sonoma have responded by declaring we face a climate emergency and joining the call for a regional collaborative effort in the San Francisco Bay Area; and

WHEREAS, there is not a focused collaborative implementation plan in sight regionally or internationally amongst the thousands of universities and governments across the globe that have declared a climate emergency; and

WHEREAS, emissions need to intentionally fall between 2020 - 2030 are a critical frame wherein emissions must sharply and permanently fall to minimize climate catastrophe and meet internationally agreed upon targets which are insufficient to protect people from climate impacts; and

WHEREAS, governments are already spending or planning to spend $9 trillion or more globally in the next few months on rescuing their economies,[6] during the same timeframe that addressing the root causes of global warming is required for meaningful action; and

WHEREAS, returning to a pre-COVID-19 global economic system, which is designed for unlimited growth on a finite planet requiring more extraction, production and consumption of materials and labor than the earth or people can handle, is a recipe for destruction; and

WHEREAS, a transformative economic intervention specifically designed to address the climate emergency and deal with the COVID-19 economic impacts is fully justified by the imminent and time-sensitive existential threat both crises pose; and

WHEREAS, the traditional land management and stewardship methods of Chochenyo, Muwekma, Karkin, Lisjan, Ohlone and other neighboring Indigenous peoples serve as the original design for a regenerative economy on the lands now occupied by the nine counties of the SF Bay Area; and

WHEREAS, legally recognizing the inherent rights of nature such as the Bay, is necessary to establish precautionary and restrictive measures to prevent human activities from causing additional harms to water, air, soil, species, ecosystems or ecological cycles on both local and global scales; and

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[5] https://www.universityofcalifornia.edu/news/university-california-declares-climate-emergency

[6] https://www.theguardian.com/environment/2020/jun/18/world-has-six-months-to-avert-climate-crisis-says-energy-expert

WHEREAS, for the Greater Bay Area to fulfill its responsibility to address global warming without exacerbating a history of racial violence, wealth inequality, and ecological degradation, it must: Implement a Just Transition to a Regenerative Economy; Embrace a doughnut economics[7] wherein the Bay Area brings its overall footprint well within the earth's carrying capacity while meeting the social needs of its residents; phase out the refining, transport, and consumption of fossil fuels and other polluting industries, energies, and waste products; and define the bioregional boundaries upon which the Bay Area attempts to be regenerative and sustainable; and be an accelerator for a circular economic strategies such as cradle-to-cradle design wherein the material streams of waste is designed to be feedstock; lead the world by collaboratively initiating a world-saving transitional effort; sustain focus and unity of purpose in successfully executing a just transition to a regenerative economy until such an economy is fully functioning; and

WHEREAS, a Regenerative Economy as defined by Movement Generation[8] and GrassRoots Global Justice[9] as a framework for achieving a regenerative economy that focuses on: Indigenous and Tribal Sovereignty, Justice for Black and Immigrant Communities, Just Transitions for Workers and communities impacted by extractive industries; Reinvestment in environmental sacrifice zones and communities; Healthcare for all; Ensures a home guarantee; Energy democracy; Food and land sovereignty; Equitable clean energy; Emissions-free transit; Bioregional governance; A just recovery in the face of diverse forms of disasters; and Advances feminist economies; and

WHEREAS, a just transition to a regenerative economy should in practice: Reverse a history of colonization, wealth extraction and imperialistic globalization; Reverse patterns of mass incarceration and demilitarize community life; Make reparative investments in marginalized communities; Make reparations for the descendants of enslaved persons; Support Indigenous peoples and tribal nations in land reclamation and governance of their rightful lands; Organize workplaces and communities to be democratic, equitable and collectively self governing; Shift to cooperative and public ownership of businesses; Divest from fossil fuels and other extractive economic activities; Invest in common access to renewable energy, food, and housing; Advance public dollars to build community wealth reversing inequality; and

WHEREAS, for any transition plan to be successful, it must include: reducing consumption and production of the remaining GHG budget in order to extend our transition timeline; investing in research and innovation to transform major industries; creating an optimal psychological and cultural climate wherein the work of transition can be carried out free from the compounded stress of racism, climate change impacts, income and wealth inequality, jobs loss, COVID-19, and political polarization are relieved; and training and preparation of our workforces for all the skilled labor required for a just transition; enacting regenerative and sustainable constraints for whole societies that are in balance with humans needs, ecosystems and wildlife; and

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Berkeley will initiate a Citywide Just Transition to a Regenerative Economy because this moment in history as our best and last chance to avert climate catastrophe in an attempt to at least meet agreed upon international targets; and

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[7] https://www.amsterdam.nl/en/policy/sustainability/circular-economy/
· https://www.theguardian.com/world/2020/apr/08/amsterdam-doughnut-model-mend-post-coronavirus-economy

[8] https://movementgeneration.org/wp-content/uploads/2016/11/JT_booklet_English_SPREADs_web.pdf

[9] https://ggjalliance.org/programs/a-pathway-to-a-regenerative-economy/

BE IT FURTHER RESOLVED, the City of Berkeley recognizes that attempting to be sustainable is not enough to protect residents from cumulative impacts of centuries of environmental and social degradation and instead will reorient its city planning, policy, and resource allocation to be socially and environmentally positive and will invest in a regenerative whole city infrastructure, policy, development and design process; and

BE IT FURTHER RESOLVED, the City of Berkeley embraces doughnut economics, which, by definition, recognizes the necessity of meeting the needs of residents within the carrying capacity of our planet Earth and the greater Bay area bioregion; and

BE IT FURTHER RESOLVED, the City of Berkeley will accelerate the transition to a zero-waste cradle to cradle circular economy; and

BE IT FURTHER RESOLVED, all city commissions shall propose city policies, procedures and programs to enact a just transition that is socially, economically and ecologically regenerative by securing racial justice, bioregional restoration and sustainability, maximally reduces greenhouse gas emissions, increases public health, increases disaster preparedness and community resilience and reverses inequality and wealth extraction of Berkeley and Bay Area residents; and

BE IT FURTHER RESOLVED, the City of Berkeley will create a city commission responsible for planning and implementing a just transition to a regenerative economy that is anti-racist, provides reparations and transformative support for those who are black, Indigenous, people of color, low income, and those struggling with mental health challenges, is community-driven and democratically-funded, environmentally-regenerative, and prioritizes local and independent businesses; and

BE IT FURTHER RESOLVED, the City of Berkeley commits to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, social inequality, public health risks, and global warming; and

BE IT FURTHER RESOLVED, the City of Berkeley calls for a regional collaborative effort to begin as soon as possible and formally requests all regional agencies, cities, and counties to a shared table to devise and execute a just transition plan to the regenerative economy here in the Greater Bay Area through a regional green new deal; and

BE IT FURTHER RESOLVED, the City of Berkeley urges all neighboring governmental agencies (including local, state and federal) to suspend any and all projects and policies that are incompatible with protecting the earth and people from further environmental degradation, public health risks, and global warming; and

BE IT FURTHER RESOLVED, the City of Berkeley calls on governments who have declared a climate emergency and who broadly recognize the immense challenge facing humanity to join together in collaborative exchange and begin a shared transitional peace effort in moving their immediate societies and economies toward ethical and regenerative trajectories; and

BE IT FURTHER RESOLVED, the City of Berkeley identifies our current economy with its focus on near-term perpetual growth requiring resource extraction and wealth enclosure as defunct and incompatible with the needs of sustainability, human thriving, and dignity, and calls for a new economic system which in its design meets human needs within planetary and local environmental and social boundaries, focuses on human and ecological flourishing, furthers a

regenerative human presence on earth, achieves equitable distribution of resources throughout the planet, and achieves sustainable transition to avert climate catastrophe in the near and long term; and

BE IT FURTHER RESOLVED, the City of Berkeley endorses the intention and vision behind a global Green New Deal that reverses centuries of colonization, and post-colonial imbalances of power, health, wealth, sovereignty, addresses the climate emergency at the speed and scale necessary, and protects the world from impending climate impacts; and

BE IT FURTHER RESOLVED, the City of Berkeley recognizes the importance of Indigenous leadership in designing and implementing a regenerative economy in Berkeley, the Greater Bay Area, and the World, and shall invite delegates from Indigenous communities to all stages of the planning and implementation process.

06

Kate Harrison
Councilmember District 4

ACTION CALENDAR
December 10, 2019

To: Honorable Mayor and Members of the City Council

From: Councilmembers Harrison and Hahn

Subject: Adopt an Ordinance Adding a Chapter 11.62 to the Berkeley Municipal Code to Regulate Plastic Bags at Retail and Food Service Establishments

RECOMMENDATION
Adopt an ordinance adding a Chapter 11.62 to the Berkeley Municipal Code to regulate plastic bags at retail and food service establishments.

BACKGROUND
Californians throw away 123,000 tons of plastic bags each year, and much of it finds its way into regional and international waterways.[1] The situation is only getting worse with 18 billion more pounds of plastic added to the already colossal amount in our seas.[2] Today, there are 100 million tons of trash in the North Pacific Subtropical Gyre;[3] in some parts, plastic outweighs plankton 6 to 1.[4]

Legislative action at the state level has been successful in achieving reductions in plastic bag pollution. According to the 2018 Change the Tide report, restrictions on plastic bags such as that in effect in California have resulted in a “steady drop” in plastic grocery bags found on California beaches. Berkeley has also recently made substantial progress on its restriction of plastic litter in the city through the Single Use Foodware and Litter Reduction ordinance (BMC Chapter 11.64).[5] The ordinance restricts food providers from offering take-out and dine-in food in single-use disposable ware. These items include “containers, bowls, plates, trays, cartons, boxes, pizza boxes, cups, utensils, straws, lids, sleeves, condiment containers, spill plugs, paper or foil wrappers, liners and any

[1] Environment California, “Keep Plastic Out of the Pacific,” https://environmentcalifornia.org/programs/cae/keep-plastic-out-pacific.
[2] Division of Boating and Waterways, “The Changing Tide,” http://dbw.parks.ca.gov/pages/28702/files/Changing%20Tide%20Summer%202018%20HQ%20(1).pdf.
[3] The North Pacific Gyre, also known as the North Pacific Subtropical Gyre, is a system of ocean currents that covers much of the northern Pacific Ocean. It stretches from California to Japan and contains the Great Pacific Trash Patch, or Pacific trash vortex. National Geographic, “Great Pacific Garbage Patch,” https://www.nationalgeographic.org/encyclopedia/great-pacific-garbage-patch/.
[4] Environment California, “Keep Plastic Out of the Pacific,” https://environmentcalifornia.org/programs/cae/keep-plastic-out-pacific.
[5] Berkeley Municipal Code, Chapter 11.64 Single Use Foodware and Litter Reduction.

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other items used to hold, serve, eat, or drink Prepared Food."[6] Notably, plastic bags do not fall within the purview of the Single Use Foodware and Litter Reduction ordinance.

In order to take a further step in protecting the environment and reaching our zero waste goal, Berkeley must consider more aggressive action to close critical loopholes in state law with regard to plastic bags.

California currently prohibits the sale of plastic bags that fall into several categories, based on composition, intended use and business size and type. The statewide Single-Use Carryout Bag Ban prevents the sale of single-use plastic carryout bags in most large grocery stores, retail stores with a pharmacy, convenience stores, food marts, and liquor stores. Affected stores may offer reusable or recycled paper bags to a customer at the point of sale. Despite these restrictions, the law provides for the sale of plastic bags that are more than 2.25 mils thick in these stores, and exempts a number of key commercial establishments such as restaurants, general retailers, farmers markets, and other smaller businesses. State law also fully exempts plastic bags in grocery stores used for carrying produce from the shelf to the check stand.[7]

This proposed ordinance intends to expand the scope of existing regulation to further reduce plastic waste across these exempt categories, avoiding further destruction of the local, regional and global environment.

State Restrictions on Plastic Bags

California's legislature decided in 2014 to take a step to limit single-use plastic bag waste. Senate Bill 270 mandates that stores of a certain size and type offer only reusable bags at checkout and sets a minimum price of at least $0.10.[8] As a result, thin film bags, known as t-shirt bags, are no longer available at larger retail and grocery stores.

The scope of state regulation includes minimum percentage of post-consumer recycled plastics the bag most include and banning plastic bags deemed adequate for only one use. The state defines single-use plastic bags as thin film bags—bags made out of flexible sheets of plastic usually of polyethylene resin. Legislation often distinguishes between single-use film bags and reusable ones based on their thickness, measured in mils—1 thousandth of an inch.

The ban however does not apply to other types of plastic bags deemed reusable or to smaller retailers and restaurants. Many plastic film bags, in particular, are still permitted under SB 270. They are permitted for sale as long as: the bags contain more than 20%

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[6] Berkeley Municipal Code Section 11.64.020D.

[7] Ban on Single-Use Carryout Bags (SB 270 / Proposition 67) Frequently Asked Questions, Office of the Attorney General and CalRecycle, April 2017, https://www.calrecycle.ca.gov/Plastics/CarryOutBags/FAQ/.

[8] California Legislature, Senate Bill 270, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201320140SB270

post-consumer recycled material[9]; are recyclable in the state of California; are properly labeled as containing post-consumer recycled material; can carry over 22lb for a minimum of 175ft for at least 125 uses; and are at least 2.25 mils thick.

Despite the assumption of reusability, there is limited evidence to suggest that plastic bags are being repurposed to the degree accounted for by SB 270. Some studies suggest that fewer than 1% of people actually reuse the thicker and thus technically-reusable film bags.[10] This erroneous legislative assumption can be addressed at the local level.

Aside from SB 270, the only other legislation governing plastic bag usage in Berkeley is an Alameda County ordinance implementing SB 270 and local ordinances regulating the type of plastic allowed in food packaging.[11] By not addressing plastic produce bags and defining reusable bags as any film bag exceeding 2.25 mils, current regional and local law shares many of the shortcomings of state legislation.[12][13]

Local Restrictions on Plastic Bags

Contested but upheld in a 2016 ballot measure,[14] SB 270 set a statewide code that has been built upon by numerous local governments, including many in the Bay Area.

Palo Alto is one of the most recent cities to amend its municipal code and take the extra step in limiting the distribution of film bags. By splitting plastic bags into three categories by use—produce bags, checkout bags, and product bags—the city is able to differentiate regulation for each purpose. Its ordinance[15] bans grocery stores and farmers markets from packaging food in film bags, requiring instead the use of compostable plastics. For checkout, Palo Alto mandates that all stores only offer their customers recycled paper bags or reusable bags, a term it defines in accordance with California law as a bag thicker than 2.25 mils.

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[9] In 2020, the percentage required will increase to 40% post-consumer recycled material.
[10] Save Our Shores, "Help Ban Plastic Bags," https://saveourshores.org/help-ban-plastic-bags/
[11] Alameda County Waste Management Authority, "Ordinance Regulating the use of carryout bags and promoting the use of reusable bags," http://reusablebagsac.org/acwma-ordinance-2012-2-amended-ordinance-2016-2.
[12] Berkeley Municipal Code Chapter 11.58 Prohibition of Chlorofluorocarbon-Processed Food Packaging, https://www.codepublishing.com/CA/Berkeley/cgi/NewSmartCompile.pl?path=Berkeley11/Berkeley1158/Berkeley1158.html.
[13] Berkeley Municipal Code Chapter 11.60 Polystyrene Foam, Degradable and Recyclable Food Packaging, https://www.codepublishing.com/CA/Berkeley/cgi/NewSmartCompile.pl?path=Berkeley11/Berkeley1160/Berkeley1160.html.
[14] Ballotpedia, "California Proposition 67, Plastic Bag Ban Veto Referendum (2016)," https://ballotpedia.org/California_Proposition_67,_Plastic_Bag_Ban_Veto_Referendum_(2016)
[15] Palo Alto Municipal Code, "Chapter 5.35 Retail and Food Service Establishment Checkout Bag Requirements," https://www.cityofpaloalto.org/civicax/filebank/documents/63550.

San Francisco has similar provisions.[16] It decided in July 2019[17] to both increase the amount of money charged for checkout bags from $0.10 to $0.25 and ban what it calls "pre-checkout bags"—defined as a "bag provided to a customer before the customer reaches the point of sale," nearly identical in definition to Palo Alto's produce bag language. San Francisco drew inspiration from Monterey, Pacifica, Santa Cruz and Los Altos, all of which charge more than SB270 requires for plastic bags.[18] The ordinance also specifically referenced an Irish law, which increased the price of plastic checkout bags from 15 cents to 22 cents, reducing plastic checkout usage by more than 95 percent, as precedent.[19]

Yet there are some cities that have gone even farther in their restriction of single-use plastics. Although Capitola does not ban produce/pre-checkout bags, it notably redefined the thickness of a reusable bag as equal or exceeding 4 mils, instead of 2.25 mils.[20] This means that any carryout bag provided by a retailer in the city is more durable than those considered multi-use by the state of California.

New York State recently introduced a plastic bag reduction ordinance that provides a number of precedents for a potential Berkeley ordinance. It bans "the provision of plastic carryout bags at any point of sale."[21] It exempts compostable bag and *non*-film plastic bags and does away with any distinction between reusable and non-reusable film bags based on their thickness. Where the New York ban falls short is in its regulation of non-checkout bags: bags for produce, meat, newspapers, take-out food and garments remain legal.

Given the progress many cities and states have made in regulating plastic bags, Berkeley has many examples to emulate.

Past Efforts in Berkeley

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[16] San Francisco Municipal Code Chapter 17: Plastic Bag Reduction Ordinance, http://library.amlegal.com/nxt/gateway.dll/California/environment/chapter17plasticbagreductionordinance?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca.

[17] San Francisco Municipal Code, "Ordinance amending the Environment Code," https://sfbos.org/sites/default/files/o0172-19.pdf.

[18] Isabela Agnus, "San Francisco bumps bag fee up to 25 cents," https://www.sfgate.com/news/article/SF-bumps-bag-fee-25-cents-plastic-produce-ban-14102908.php.

[19] Republic of Ireland Department of Communications, Climate Action & Environment, "Plastic Bags," https://www.dccae.gov.ie/en-ie/environment/topics/waste/litter/plastic-bags/Pages/default.aspx.

[20] Capitola Municipal Code Chapter 8.07: Single-use Plastic and Paper Carryout Bag Reduction, https://www.codepublishing.com/CA/Capitola/#!/Capitola08/Capitola0807.html#8.07.

[21] New York State Governor's Office, "An act to amend the environmental conservation law, in relation to prohibiting plastic carryout bags," https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/PlasticBagBan.pdf.

Berkeley attempted to pass its own plastic bag ban in 2010.[22] In the years following councilmembers have pushed for reform, calling for an ordinance to improve upon county and state legislation.[23] Yet the threat of lawsuits[24] and movement on the state and county level appear to have delayed local reform.

The Proposed Ordinance

This proposed ordinance picks up where prior attempts failed, bringing Berkeley on par with many of its neighbors in tightening restrictions on plastic bag sales. On some points, this ordinance ensures that the City again becomes a leader in environmental regulation. The following details the key changes that close loopholes in state and local law:

- Plastic bag regulations would now apply to a number of retail service establishments previously omitted from the state ban. Restaurants and food vendors would no longer be able to distribute single-use plastic carryout bags. Grocery stores and other retailers selling prepared food would be required to move away from single-use plastic produce bags.

- Retail service establishments of all sizes would be included, closing exemptions for smaller stores.

- Reusable plastic bags would be redefined as non-film plastic bags, adjusting the criteria to more accurately reflect common perceptions of reusability and the tendency for consumers treat all film bags as disposable, regardless of thickness.

- The price per non-plastic bag increases from $0.10 to $.25, to avoid a substitution effect.

The most common concern in reducing plastic bag waste is that the alternatives are even less sustainable. Substituting paper bags for plastic could be equally, if not more, hazardous for the environment because of the energy, transport and disposal processes required.[25] Cloth bags are also imperfect options, because of the large amount of energy and water necessary to produce them.[26] The California ban on bags thinner than 2.25

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[22] Berkeley City Council, "Berkeley Bag Reduction Ordinance," https://www.cityofberkeley.info/uploadedFiles/Public_Works/Level_3_-_Solid_Waste/BagReductionDraftOrdinance.100316.pdf.

[23] Kriss Worthington, "Adopt Expanded Single Use Plastic Bag Ban/Paper Bag Fee Ordinance," https://www.cityofberkeley.info/uploadedFiles/Clerk/Level_3_-_City_Council/2012/01Jan/2012-01-31_Item_25_Adopt_Expanded_Single_Use_Plastic_Bag.pdf.

[24] Doug Oakley, "Berkeley's plan for plastic bag ban part of larger movement," https://www.mercurynews.com/2009/12/23/berkeleys-plan-for-plastic-bag-ban-part-of-larger-movement/.

[25] The Environmental Literacy Council, "Paper or Plastic?" https://enviroliteracy.org/environment-society/life-cycle-analysis/paper-or-plastic/.

[26] Patrick Barkham, "Paper bags or plastic bags: which are best?" https://www.theguardian.com/environment/shortcuts/2011/dec/20/paper-plastic-bags-which-best.

mils may also have resulted in a substitution toward thicker and less sustainable film bags.[27] Moreover, international studies confirm that even single-use bags are reused to a limited degree for other household functions, such as garbage disposal or to pick up dog feces.[28] A University of Sydney economist found that garbage bag consumption increased when California placed restrictions on single-use plastic bags, likely because consumers no longer had as many free single-use film bags at hand in which to dispose their waste. Yet that same study also concluded that the benefits of the ban were still significant: Californians consumed 28 million pounds fewer plastic than they did before.[29]

Still, eliminating plastic bags cannot be the only approach to combat the cycle of consumer waste. It must come, as this ordinance would ensure, in combination with higher prices and greater requirements for the percentage of recycled content in paper bags. Any paper bags sold in Berkeley must per this resolution contain no old growth fiber, be 100% recyclable overall and contain a minimum of 40% post-consumer recycled content.

Data from Alameda County as a whole seems to indicate that when the cost of single-use paper bags was set at $0.10, consumption *decreased* by approximately 40% within three years.[30] The same report revealed that "plastic bags found in storm drains decreased by 44 percent, indicating that the ordinance has been successful in reducing single use plastic bag litter." Further price increases have been shown to realize even larger benefits.

FISCAL IMPLICATIONS

Staff or contractor costs for the launch, for outreach and education, enforcement, administration and analysis.

ENVIRONMENTAL SUSTAINABILITY

Reducing the amount of discarded plastic bags—previously classified as multi-use—in the city of Berkeley will result in less over all waste and fewer plastic that makes it into local and regional waterways.

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[27] Christian Britschgi, "California Plastic Bag Bans Spur 120 Percent Increase in Sales of Thicker Plastic Garbage Bags," https://reason.com/2019/04/11/california-plastic-bag-bans-spur-120-per/.

[28] NPR Planet Money, "Are Plastic Bag Bans Garbage?" https://www.npr.org/sections/money/2019/04/09/711181385/are-plastic-bag-bans-garbage.

[29] Rebecca L.C. Taylor, "Bag leakage: The effect of disposable carryout bag regulations on unregulated bags," https://www.sciencedirect.com/science/article/pii/S0095069618305291.

[30] Alamda County Waste Management Authority, "Addendum to the Final Environmental Impact Report Mandatory Recycling and Single Use Bag Reduction Ordinances," http://reusablebagsac.org/resources/addendum-final-environmental-impact-report-2016.

Furthermore, a switch toward bags made from polyester or plastics like polypropylene, which are more sustainable than film bags and sold at many grocery stores will lead to greater environmental sustainability.[31]

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

[31] Claire Thompson, "Paper, Plastic or Reusable?" https://stanfordmag.org/contents/paper-plastic-or-reusable?utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews.

ORDINANCE NO. –N.S.

ADDING CHAPTER 11.62 TO THE BERKELEY MUNICIPAL CODE TO REGULATE PLASTIC BAGS AT RETAIL AND FOOD SERVICE ESTABLISHMENTS

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

Section 1. That Chapter 11.62 of the Berkeley Municipal Code is added to read as follows:

Chapter 11.62

PLASTIC BAGS - RETAIL AND FOOD SERVICE ESTABLISHMENTS

Sections:

11.62.010 Findings and Purpose.

The Council of the City of Berkeley finds and declares as follows:

A. Single-use plastic bags, plastic produce bags, and plastic product bags are a major contributor to street litter, ocean pollution, marine and other wildlife harm and greenhouse gas emissions.
B. The production, consumption and disposal of plastic based bags contribute significantly to the depletion of natural resources. Plastics in waterways and oceans break down into smaller pieces that are not biodegradable, and present a great harm to global environment.
C. Among other hazards, plastic debris attracts and concentrates ambient pollutants in seawater and freshwater, which can transfer to fish, other seafood and salt that is eventually sold for human consumption. Certain plastic bags can also contain microplastics that present a great harm to our seawater and freshwater life, which implicitly presents a threat to human life.
D. It is in the interest of the health, safety and welfare of all who live, work and do business in the City that the amount of litter on public streets, parks and in other public places be reduced.
E. The City of Berkeley must eliminate solid waste at its source and maximize recycling and composting in accordance with its Zero Waste Goals. Reduction of plastic bag waste furthers this goal.
F. The State of California regulates single-use carryout bags as directed under Senate Bill 270, but numerous local governments, including San Francisco and Palo Alto, have imposed more stringent regulations to reduce the toll plastic bags inflict upon the environment.
G. Stores often provide customers with plastic pre-checkout bags to package fruits, vegetables, and other loose or bulky items while shopping, before reaching the checkout area. They share many of the same physical qualities as single-use plastic carryout bags no longer permitted in California, and are difficult to recycle or reuse.
H. SB 270 permits local governments to increase the price of bags provided at the point of sale and leaves open any regulation on pre-checkout bags, such as at meat or vegetable stands within grocery stores.
I. The City of Berkeley regulates a number of disposable plastic items through the Single-Use Foodware and Litter Reduction Ordinance (Ord. 7639-NS § 1 (part), 2019), but does not impose regulations on bags.
J. This Chapter is consistent with the City of Berkeley's 2009 Climate Action Plan, the County of Alameda Integrated Waste Management Plan, as amended, and the CalRecycle recycling and waste disposal regulations contained in Titles 14 and 27 of the California Code of Regulations.

11.62.20 Definitions.

"Checkout Bag" means a bag provided by a Retail Service Establishment at the checkstand, cash register, point of sale or other point of departure for the purpose of transporting food or merchandise out of the establishment. Checkout Bags do not include Produce Bags or Product Bags.

"Recyclable Paper Checkout Bag" means a paper bag that meets the following criteria:

1. Contains no old growth fiber;
2. Is 100% recyclable overall and contains a minimum of 40% post-consumer recycled content;
3. Displays the word "Recyclable" on the outside of the bag along with the manufacturer, the location (country) where manufactured and the percentage of post-consumer recycled content in an easy-to-read size font;

4. Or is made from alternative material or meets alternative standards approved by the City Manager or their designee.

“Reusable Checkout Bag” means all Checkout Bags defined as reusable under Cal. PRC §42280-42288, such as cloth or other washable woven bags, but do not include film bags considered reusable under Cal. PRC §42280-42288.

"Produce Bag" means a bag provided to a customer to carry produce, meats, bulk food, or other food items to the point of sale inside a store and protects food or merchandise from being damaged or contaminated by other food or merchandise when items are placed together in a Reusable Checkout Bag or Recyclable Paper Checkout Bag.

"Compostable Produce Bags" means paper bags and bags made of plastic-like material if the material meets the ASTM Standard Specifications for compostability D6400 or D6868, or the product is Biodegradable Products Institute (BPI) certified, or is considered acceptable within the City’s compost collection program.

"Product Bag” means a bag provided to a customer to protect merchandise from being damaged or contaminated by other merchandise when items are placed together in a Reusable Checkout Bag or Recyclable Paper Checkout Bag; a bag to hold prescription medication dispensed from a pharmacy; or a bag without handles that is designed to be placed over articles of clothing on a hanger.

“Retail Food Establishment” means any establishment, located or providing food within the City, which provides prepared and ready-to-consume food or beverages, for public consumption including but not limited to any Retail Service Establishment, eating and drinking service, takeout service, supermarket, delicatessen, restaurant, food vendor, sales outlet, shop, cafeteria, catering truck or vehicle, cart or other sidewalk or outdoor vendor or caterer which provides prepared and ready-to-consume food or beverages, for public consumption, whether open to the general public or limited to certain members of the public (e.g., company cafeteria for employees).

“Retail Service Establishment” means a for-profit or not-for-profit business that where goods, wares or merchandise or services are sold for any purpose other than resale in the regular course of business (BMC Chapter 9.04.135).

11.62.030 Types of Checkout Bags permitted at Retail Service and Food Service Establishments.

A. Retail Service Establishments and Food Service Establishments shall provide or make available to a customer only Reusable Checkout Bags, Compostable Produce Bags, or Recyclable Paper Checkout Bags for the purpose of carrying away goods or other materials from the point of sale, subject to the terms of this Chapter.

    1. Exception: Single-use plastic bags exempt from the Chapter include those integral to the packaging of the product, Product Bags, or bags sold in packages containing multiple bags intended for use as garbage, pet waste or yard waste bags.

B. Effective [ ], 2020, farmers markets shall only provide Compostable Produce Bags to hold produce, meats, bulk food or other food items. Single-use Plastic Checkout Bags, Produce Bags or Product Bags shall not be provided by farmers markets for produce or meat.

C. Nothing in this Chapter prohibits customers from using bags of any type that they bring to the establishment themselves or from carrying away goods that are not placed in a bag at point of sale, in lieu of using bags provided by the establishment.

11.62.040 Checkout Bag charge for paper or Reusable Checkout Bags at Retail Service Establishments.

A. Effective [ ], 2020, no Retail Service Establishment shall provide a Compostable Produce Bag, Recyclable Paper Checkout Bag or Reusable Checkout Bag to a customer at the point of sale, unless the store charges the customer a Checkout Bag charge of at least twenty-five cents ($0.25) per bag to cover the costs of compliance with the Chapter, the actual costs of providing Recyclable Paper Checkout Bags, educational materials or other costs of promoting the use of Reusable Checkout Bags.

B. Retail Service Establishments shall establish a system for informing the customer of the charge required under this section prior to completing the transaction. This system can include store clerks inquiring whether customers who do not present their own Reusable Checkout Bag at point of checkout want to purchase a Checkout Bag.

C. The Checkout Bag charge shall be separately stated on the receipt provided to the customer at the time of sale and shall be identified as the Checkout Bag charge. Any other transaction fee charged by the Retail Service Establishment in relation to providing a Checkout Bag shall be identified separately from the checkout bag charge. The Checkout Bag charge may be completely retained by the Retail Service Establishment and used for public education and administrative enforcement costs.

D. Retail services establishments shall keep complete and accurate records of the number and dollar amount collected from Recyclable Paper Checkout Bags and Reusable Checkout Bags sold each month and provide specifications demonstrating that paper and reusable bags meet the standards set forth in Section 11.62.030 using either the electronic or paper reporting format required by the city. This information is required to be made available to city staff upon request up to three times annually and must be provided within seven days of request. Reporting false information, including information derived from incomplete or inaccurate records or documents, shall be a violation of the Chapter. Records submitted to the city must be signed by a responsible agent or officer of the establishment attesting that the information provided on the form is accurate and complete.

11.62.050 Use of Compostable Produce Bags at Retail Service Establishments.

Effective [ ], 2020, Retail Service Establishments shall only provide Compostable Produce Bags to carry produce, meats, bulk food, or other food items to point of sale within the store.

11.62.060 Hardship Exemption.

A. Undue hardship. The City Manager, or their designee, may exempt a retail service or food service establishment from the requirements of this Chapter for a period of up to one year, upon sufficient evidence by the applicant that the provisions of this Chapter would cause undue hardship. An undue hardship request must be submitted in writing to the city. The phrase "undue hardship" may include, but is not limited to, the following:

    1. Situations where there are no acceptable alternatives to single-use plastic Checkout Bags for reasons which are unique to the Retail Service Establishment or Food Service Establishment.

2. Situations where compliance with the requirements of this Chapter would deprive a person of a legally protected right.

B. Retail Service Establishments shall not enforce the ten cent ($0.25) store charge for customers participating in the California Special Supplemental Food Program for Women, Infants, and Children, or in CalFresh, or in the Supplemental Nutrition Assistance Program (SNAP).

11.62.070 Duties, responsibilities and authority of the City of Berkeley.
The City Manager or their designee shall prescribe, adopt, and enforce rules and regulations relating to the administration and enforcement of this Chapter and is hereby authorized to take any and all actions reasonable and necessary to enforce this Chapter including, but not limited to, inspecting any Retail Service Establishment's premises to verify compliance.

11.62.080 City of Berkeley—purchases prohibited.
The City of Berkeley shall not purchase any Foodware or Bag that is not Compostable, Recyclable or Reusable under Disposable Foodware and Bag Standards in Section 11.64.080, nor shall any City-sponsored event utilize non-compliant Disposable Foodware and Bag.

11.62.090 Liability and Enforcement.
A. Anyone violating or failing to comply with any requirement of this Chapter may be subject to an Administrative Citation pursuant to Chapter 1.28 or charged with an infraction as set forth in Chapter 1.20 of the Berkeley Municipal Code; however, no administrative citation may be issued or infraction charged for violation of a requirement of this Chapter until one year after the effective date of such requirement.
B. Enforcement shall include written notice of noncompliance and a reasonable opportunity to correct or to demonstrate initiation of a request for a waiver or waivers pursuant to Section 11.64.090.
C. The City Attorney may seek legal, injunctive, or other equitable relief to enforce this Chapter.
D. The remedies and penalties provided in this section are cumulative and not exclusive.

11.62.100 Severability.
If any word, phrase, sentence, part, section, subsection, or other portion of this Chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the prescribed application thereof, shall be severable, and the remaining provisions of this Chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The City Council hereby declares that it would have passed this title, and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases had been declared invalid or unconstitutional.

11.62.110 Construction.
This Chapter is intended to be a proper exercise of the City's police power, to operate only upon its own officers, agents, employees and facilities and other persons acting within its boundaries, and not to regulate inter-city or interstate commerce. It shall be construed in accordance with that intent.

11.62.120 Chapter supersedes existing laws and regulations.
The provisions of this Chapter shall supersede any conflicting law or regulations.

11.62.130 Effective Date.
The provisions in this ordinance are effective [ ], 2020.

Section 2. 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.

07

Community Environmental
Advisory Commission

ACTION CALENDAR
April 14, 2020

To: Honorable Mayor and Members of the City Council

From: Community Environmental Advisory Commission

Submitted by: Ben Gould, Chairperson, Community Environmental Advisory Commission

Subject: Prohibition on the Resale of Used Combustion Vehicles in 2040

RECOMMENDATION
Review and refer to the City Attorney for finalization the attached ordinance prohibiting the resale of used, existing combustion-powered vehicles beginning in 2040.

SUMMARY
Prohibiting the resale of used combustion vehicles is likely to increase the availability of non-combustion alternatives. This policy is important to help address environmental inequities, reduce greenhouse gas emissions, and improve public health; however, it may also raise the price of used vehicles and programs will be required to ensure that low-income and disadvantaged communities are able to benefit. This is an application of local police power which is not preempted by state or federal law.

FISCAL IMPACTS OF RECOMMENDATION
Some staff time for review and finalization of the ordinance. Adoption of the ordinance itself may expose the City to potential fiscal impacts, including risk of a lawsuit and, if ultimately enforced, additional fiscal impacts from impacts to sales, property, and other tax or fee revenues.

CURRENT SITUATION AND ITS EFFECTS
On June 12, 2018, Berkeley City Council unanimously declared a Climate Emergency, which called for “a just citywide emergency mobilization effort to end citywide greenhouse gas emissions as quickly as possible.” Berkeley also set a goal of being a Fossil Fuel Free city and becoming a net carbon sink, as well as becoming carbon neutral by 2045.

Berkeley’s Climate Action Plan also sets the goal of an 80% reduction in greenhouse gas emissions by 2050, and Berkeley’s Strategic Plan sets the goal of being a global leader in addressing climate change, advancing environmental justice, and protecting the environment.

Citywide, transportation powered by internal combustion engines makes up 60% of the city's greenhouse gas emissions. Unfortunately, this share – and total level of emissions – is only expected to grow. In order to achieve its emission reduction goals, Berkeley needs a strategy that will phase out the use of combustion vehicles, including ensuring a wide availability of used non-combustion vehicles for the broader market which cannot afford new vehicles, while ensuring compliance with all applicable state and federal laws.

At a regular meeting on Thursday, November 14, 2019, the Community Environmental Advisory Commission approved a motion to send the *Prohibition of resale of Used Combustion Vehicles on city streets by 2040* recommendation to City Council. (M/S/C) Gould, Hetzel. Ayes: Simmons, Varnhargen, Hetzel, Goldhaber, Gould. Abstained: De Leon. Absent: Ticconi.

BACKGROUND

Berkeley is home to, and a route for, tens of thousands of combustion-powered automobiles, trucks, and other vehicles which annually emit roughly 360,000 metric tons of greenhouse gases (GHGs). There are an estimated 46,000 vehicles registered within the City of Berkeley, of which only about 1,400 (3%) are electric or plug-in hybrid vehicles.

Berkeley has declared a Climate Emergency, set the goal of becoming a fossil-fuel free city, and aims to achieve carbon neutrality by 2045. City staff are working aggressively to develop a comprehensive action-based Electric Vehicle (EV) roadmap to find opportunities to increase equitable access to EV's within Berkeley's diverse community.

Most local, regional, and state efforts around expanding EV uptake is focused on increasing and enabling purchases of new EVs, whether through incentives and support for consumers (such as tax deductions or public chargers) or state- and federal-level mandates for manufacturers to sell clean vehicles.

Since most vehicles eventually break down and reach a point where it is not economic to continue maintaining them, targeting new vehicles can be expected to ultimately drive an eventual transition to non-combustion vehicles. However, even if no new combustion vehicles were sold in California, it would take roughly 15 years[1] to transition all remaining, existing vehicles to non-combustion alternatives – likely longer.

Regulations on new vehicle emission and fuel economy standards are set by the federal (and state) government under existing federal law, such as the Clean Air Act (CAA) and the Energy Policy Conservation Act (EPCA). The CAA and EPCA expressly preempt

[1] Based upon DMV data on roughly 30 million registered automobiles and light trucks (https://www.dmv.ca.gov/portal/wcm/connect/5aa16cd3-39a5-402f-9453-0d353706cc9a/official.pdf?MOD=AJPERES), and CNCDA data on roughly 2 million new vehicle sales annually (above), the time to replace every vehicle in California is roughly 15 years.

local authorities from enacting regulations on new vehicles. However, they deliberately omit any imposition of regulations on existing vehicles, thereby leaving that application of police power to the states and local jurisdictions.

In California, roughly two-thirds of all vehicle sales are used, existing vehicles[2]. The state has not extensively regulated in this market – used vehicles, as all vehicles, are required to meet smog checks certifying the vehicle meets the emission standards it was manufactured to, but no more. As the Legislature appears to have no intent or interest in further regulating used vehicles, it falls to local governments to address used combustion vehicle sales.

In the face of federal inaction on zero-emission mandates, local jurisdictions can and should act to incentivize a timely, equitable, and just transition to zero-emission transportation. This is a matter of municipal concern, because the continued availability of used combustion vehicles adversely effects city's ability to achieve carbon neutrality and meet its greenhouse gas reduction goals.

Prohibiting the resale of used combustion vehicles creates two incentives that support non-combustion alternatives. Firstly, by making it more difficult for consumers to get rid of an unwanted, used combustion vehicle, individuals will be encouraged to choose non-combustion vehicles when purchasing new vehicles. Consumers often plan to keep vehicles for 5, 10, or even 15 years or longer, enacting this policy as soon as possible will ensure it has the greatest possible impact. Because this acts as an indirect incentive on the purchase of new vehicles, and not as any standard or mandate (consumers can still purchase and use combustion vehicles, sell them before January 1st, 2040, resell them outside of Berkeley after January 1st, 2040, or scrap them), it complies with the Clean Air Act.

Secondly, removing combustion vehicles from the resale market effectively constrains the supply of used vehicles, and can be expected to drive up the price of the remaining used vehicles – all non-combustion. This would therefore incentivize existing non-combustion vehicle owners to sell their vehicles, expanding the supply of available used non-combustion vehicles.

Unfortunately, this latter incentive acts as a double-edged sword from an equity perspective. While expanding the availability of non-combustion vehicles helps ensure low-income and disadvantaged consumers find alternatives to purchase, which may be particularly necessary if other policies (such as a combustion vehicle operation ban) are enacted, raising the price simultaneously makes it more difficult for these consumers to afford the vehicles they need. In addition, low-income and disadvantaged consumers are most likely to still own or be using combustion vehicles by the time any ban or

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[2] *California Auto Outlook Covering Second Quarter 2019*, California New Car Dealers Association https://www.cncda.org/wp-content/uploads/Cal-Covering-2Q-19.pdf. Accessed September 2019.

restrictions would take effect, and would therefore be faced with the greatest burden in getting rid of any such vehicle when they chose to do so.

Local, regional, and state governments will likely need to address this equity issue through non-combustion vehicle purchase incentives and subsidies, and potentially combustion vehicle buyback programs, targeted for low-income households. These programs are already beginning to be enacted for low-income individuals to purchase new EVs, and so it is likely they will continue to be further developed and in place in the time frame proposed in this policy.

While these financial inequities are important and must be planned for and addressed, the proposed policy still addresses several other equity issues which cannot be addressed through any means but with technological change. For decades, our low-income communities have disproportionately borne the brunt of air pollution and noise from the operation of combustion vehicles; the fact that these communities have simultaneously relied upon the oldest, cheapest, and therefore dirtiest vehicles only compounds the issue. In the long run, these communities are also the communities most vulnerable to, and threatened by, climate change. Driving an aggressive transition to non-combustion vehicles may create some short-term economic issues that can and must be planned for and addressed. These issues should not obstruct resolving the greater injustice of air pollution and climate change.

ENVIRONMENTAL SUSTAINABILITY
Banning the resale of used combustion vehicles will ensure they are phased out and will incentivize businesses to further promote the sale of electric vehicles.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
The proposed policy is categorically exempt from CEQA under CEQA Guidelines Sections 15307 and 15308.

RATIONALE FOR RECOMMENDATION
Berkeley is extremely unlikely to meet its carbon reduction and fossil-free goals without aggressive action on transportation decarbonization. While working to drive EV uptake helps, CEAC believes that setting dates beyond which combustion vehicles will not be supported under City policy will help further.

Prohibiting the resale of used combustion vehicles will doubly incentivize consumers to choose non-combustion alternatives – for those looking to purchase new vehicles, knowing they must go outside of city limits to resell their vehicle adds an additional barrier and is an incentive to choose a non-combustion alternative. For those purchasing used vehicles, removing combustion vehicles from the used market ensures greater availability and choice of non-combustion alternatives. This may, however, drive up prices for used vehicles, and this must be addressed through additional programs as the police comes into force.

The federal government currently lacks the jurisdiction to prohibit the resale of used combustion vehicles, and there is no evidence the state government will choose to do so. As a result, if the sale of used combustion vehicles is to be restricted, Berkeley must take action.

Setting 2040 as a phase-out date for the sale of used combustion vehicles will help ensure vehicle owners in Berkeley can more readily transition to non-combustion alternatives by 2045, when Berkeley aims to be carbon-neutral.

ALTERNATIVE ACTIONS CONSIDERED

CEAC considered taking no action, but determined that was not an effective approach to addressing Berkeley's declared Climate Emergency, becoming a fossil fuel free city, or achieving carbon neutrality.

CEAC considered an earlier phase-out date, such as 2030 or 2035, but determined it was unclear that there would be adequate availability of used vehicles by that time. While there may still not be enough in 2040, CEAC determined that there needed to be some transition time to support any 2045 phase-out policies in place.

CEAC considered providing an expanded exemption to allow vehicles which are newer than a certain number of years to be resold. CEAC decided there did not appear to be any compelling reason to do so, and that any potential benefits were likely not to accrue to disadvantaged communities.

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission's Report.

CONTACT PERSON

Ben Gould, Chair, Community Environmental Advisory Commission, 510-725-9176

Attachments:
1: Ordinance

ORDINANCE NO. -N.S.

AMENDING BERKELEY MUNICIPAL CODE TITLE 9 TO PROHIBIT THE SALE OF COMBUSTION VEHICLES.

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

Section 1. That the Berkeley Municipal Code Chapter 9.97 is added to read as follows:

Chapter 9.97
RESALE OF USED COMBUSTION VEHICLES

Sections:

9.97.010 Findings

A. Berkeley aims to become carbon neutral by 2045, reduce greenhouse gas emissions by 80%, and become a fossil fuel free city.

B. Over 60% of greenhouse gas emissions in Berkeley result from transportation.

C. Transitioning 100% of new vehicle sales to non-combustion vehicles by 2030 would dramatically improve Berkeley's ability to achieve carbon neutrality by 2045.

D. The Clean Air Act and the Energy Policy Conservation Act prohibit states and cities from setting emission or fuel economy standards for new vehicles, without restricting their authority to set regulations for used vehicles.

E. Roughly two-thirds of all vehicle sales in California are in the used car market.

F. Disadvantaged and low-income communities disproportionately rely upon the used car market and are disproportionately impacted by air pollution and climate change driven by used combustion vehicles.

G. Berkeley can support availability of used non-combustion vehicles and nourish a used car market for non-combustion vehicles through restricting the resale of used combustion vehicles and developing programs to support low-income residents in transitioning to non-combustion alternatives.

9.97.020 Purpose

The purpose of this chapter is to promote the health and safety of Berkeley residents and visitors, to address environmental impacts, and to address environmental justice.

9.97.030 Definitions

For the purposes of this chapter, the following words and phrases shall have the meaning respectively ascribed to them by this section:

A. “Combustion vehicle” shall mean any on-road land motor vehicle which uses the combustion or oxidation of any carbon-based fuel to provide power or propulsion.

B. “New motor vehicle” shall have the same definition as set forth under the Clean Air Act, 42 US Code § 7550(3).

9.97.040 Prohibition

Beginning January 1st, 2040, it shall be unlawful to sell, resell, trade, or distribute any combustion vehicle with a model year of more than three (3) years old by any means anywhere within the City of Berkeley.

9.97.050 Exemption

This prohibition shall not apply to the sale of new motor vehicles which are subject to regulation under the Clean Air Act.

Previous version and track changes:

08

Cheryl Davila
Councilmember
District 2

RECEIVED AT
COUNCIL MEETING OF:

DEC 05 2019

OFFICE OF THE CITY CLERK
CITY OF BERKELEY

CONSENT CALENDAR
December 3, 2019

To: Honorable Mayor and Members of the City Council

From: Councilmember Cheryl Davila

Subject: Introduce an Ordinance terminating the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025

RECOMMENDATION
Adopt a resolution with the following actions:

1. Direct the City Attorney to prepare any draft ordinances to terminate the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025; this shall include the termination of purchasing these vehicles to support City fleets and, for the general public, a staged phase out such as cars over $28K by 2023, cars over $22K by 2024, and all cars by 2025, so as to actively create a used electric vehicle market for lower income customers that allows them to acquire electric vehicles at a cost equal to or below that of comparable gasoline, diesel, or natural gas vehicles.

2. Short term referral to the City Manager and/or designee(s) to report to the City Council in 90 days, in consultation with other City Departments with the following information: (A) Feasibility of terminating the sale of gasoline, diesel and natural gas passenger vehicles; (B) ways to promote and facilitate the sale of all-electric vehicles in the City, particularly among low income communities, including the provision of local tax incentives and rebates, as large as is necessary to cover any cost difference between an electric car and a comparable gas car; the simplification of building code requirements for chargers; and the establishment of charging stations and related infrastructure to support all-electric vehicles; (C) any "just transition" elements related to the above action, including the impact upon and opportunities for auto mechanics.

BACKGROUND
Humanity can no longer safely emit greenhouse gases if it wishes to avoid reaching irreversible climate tipping points. The nation and the world is in a climate emergency.

Emissions from vehicles powered by fossil fuels and from production and refinement of fossil fuels contribute substantially to health problems for frontline communities living near freeways, oil drill sites, and refineries. The burden of dirty fuel energy is disproportionately borne by low-income communities of color. Environmental justice requires that we acknowledge how communities of color, low-income ~~folx~~folks, and indigenous populations continue to suffer the most extreme impacts of climate disasters. Rates of asthma and respiratory disease are also extremely high in minority neighborhoods due to pollution and the concentration of coal refineries and transportation thoroughfares in low socioeconomic status census tracts.

Previous version and track changes:

Beyond this, extreme storm damage to refineries in Florida, Texas, and along the Gulf Coast have caused price spikes in gasoline prices across the country. The volatility of fossil fuel prices will continue to disproportionately impact low income residents in a climate-disrupted future. As a result, it is essential that we support low-income communities of color in particular as we make the necessary transitions to a more carbon-neutral economy.

To drastically reduce greenhouse gas emissions, the United Kingdom, India, China and Germany have already set an end date on the sales of gasoline and diesel powered passenger vehicles.

Automobile manufacturers such as Audi and Volvo are moving toward all-electric vehicle (EV) sales, and General Motors, Ford, Land Rover and BMW are introducing new lines as well. A healthy secondary electric vehicle market is already making EVs more affordable than ever.

If the City is to continue to thrive and play a role as an international leader in climate action, all efforts must be made to reduce greenhouse gas emissions in every sector, including transportation, as soon as possible. In order to protect and promote the health of its residents, the City should make all efforts to reduce exposure to toxic emissions from freeways, oil drill sites and refineries.

FISCAL IMPACTS OF RECOMMENDATION
To be determined.

ENVIRONMENTAL SUSTAINABILITY
The Berkeley City Council unanimously passed the Climate Emergency Declaration in June 2018, and has a record of passing legislation to protect our climate. It is important, now more than ever to take the next step to ensure that we are prepared and ready for the climate crisis we will face.

CONTACT PERSON
Cheryl Davila
Councilmember, District 2
510.981.7120
cdavila@cityofberkeley.info

ATTACHMENTS:
1. Resolution

Previous version and track changes:

RESOLUTION NO. XXXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BERKELEY IN SUPPORT OF INTRODUCING AN ORDINANCE TERMINATING THE SALE OF GASOLINE, DIESEL, AND NATURAL GAS VEHICLES THROUGHOUT THE CITY OF BERKELEY BY 2025

WHEREAS, The Berkeley City Council unanimously passed the Climate Emergency Declaration on June 12, 2018; and

WHEREAS, the cities of Richmond, Oakland, Hayward, Alameda, El Cerrito, Chico, Fairfax, Healdsburg, Davis, Arcata, Cloverdale, Malibu, Petaluma, San Jose, San Mateo County, Santa Cruz City & County, Sonoma County and Windsor have also passed Climate Emergency Declarations; and

WHEREAS, There are over ~~48~~ 59 cities throughout the United States who have declared a Climate Emergency, and over ~~1180~~ 1217 governments and 23 countries throughout the world are also in agreement about the urgency of our climate crisis; and

WHEREAS, Unprecedented winter wildfires have destroyed parts of our region and a climate emergency mobilization of our City has never been more fiercely urgent, but the declaration is only the first step; and

WHEREAS, To act too late, or to be too cautious in our vision, carries the risk of condemning the City and its residents to an increasingly uninhabitable climate and potentially catastrophic economic losses caused by worsening disasters; and

WHEREAS, The extraction and burning of coal and gas for ~~fossil fuel~~ energy is a sunsetting economy, predicted to decline over the next several decades[1]; and

WHEREAS, the renewable energy sector is predicted to widely increase and create greater economic opportunities, and currently energy efficiency provides for 10-30 times more jobs than coal or gas[2]; and

WHEREAS, The California State Assembly has established a goal of increasing 5 million Zero Emission Vehicles on the roads by 2030 and 250,000 electric vehicle charging stations by 2025[3]; and

WHEREAS, The State has also established the CA Clean Vehicle Rebate Project to assist in the affordability of purchasing new emission-reducing vehicles[4]; and

WHEREAS, A just transition to a sustainable economy is cognizant of the impacts of electrification initiatives on workers involved in the fossil fuel industry, including automobile mechanics, and seeks to be inclusive of all members of our community, and fortify economic success for all people; and

NOW, THEREFORE IT BE RESOLVED, that the Berkeley City Council directs the City Attorney to prepare any draft ordinances necessary to terminate the sale of gasoline, diesel and natural gas passenger vehicles~~-~~ by 2025; this shall include the termination of purchasing these vehicles

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[1] https://siepr.stanford.edu/research/publications/what-killing-us-coal-industry
[2] https://www.nrdc.org/resources/nrdc-and-energy-efficiency-building-clean-energy-future
[3] https://www.cpuc.ca.gov/zev/
[4] https://cleanvehiclerebate.org/eng

Previous version and track changes:

to support City fleets and, for the general public, a staged phase out such as cars over $28K by 2023, cars over $22K by 2024, and all cars by 2025, so as to actively create a used electric vehicle market for lower income customers that allows them to acquire electric vehicles at a cost equal to or below that of comparable gasoline, diesel, or natural gas vehicles; and

BE IT FURTHER RESOLVED, that the City Council directs the City Manager and/or Designee to report on ways to promote and facilitate the sale of all-electric vehicles in the City, particularly among low income communities, including the provision of local tax incentives and rebates; the simplification of building code requirements for chargers; and the establishment of charging stations and related infrastructure to support all-electric vehicles; and

BE IT FURTHER RESOLVED, that the City Council directs the City Manager and Staff to be instructed to report to the Council in 90 days, in consultation with other City Departments on the feasibility of terminating the sale of gasoline, diesel and natural gas passenger vehicles throughout the city by 2025; and

BE IT FURTHER RESOLVED, that the City Council directs all City Departments and proprietaries to report back on maximum emergency reductions in greenhouse gas emissions from their operations feasible by the end of 2025, with the highest priority on an equitable and just transition in all sectors; and

BE IT FINALLY RESOLVED, that the City Council directs the City Manager and/or Designee, in consultation with the Economic Development Department, to report to Council in 90 days on any "just transition" elements related to the above action, including the impact and opportunities upon auto mechanics and used car dealerships.

Cheryl Davila
Councilmember
District 2

CONSENT CALENDAR
December 3, 2019

To: Honorable Mayor and Members of the City Council

From: Councilmember Cheryl Davila

Subject: Introduce an Ordinance terminating the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025

RECOMMENDATION

Adopt a resolution with the following actions:

1. Direct the City Attorney to prepare any draft ordinances to terminate the sale of gasoline, diesel and natural gas passenger vehicles throughout the City of Berkeley by 2025; this shall include the termination of purchasing these vehicles to support City fleets and, for the general public, a staged phase out such as cars over $28K by 2023, cars over $22K by 2024, and all cars by 2025, so as to actively create a used electric vehicle market for lower income customers.

2. Short term referral to the City Manager and/or designee(s) to report to the City Council in 90 days, in consultation with other City Departments with the following information: (A) Feasibility of terminating the sale of gasoline, diesel and natural gas passenger vehicles; (B) ways to promote and facilitate the sale of all-electric vehicles in the City, particularly among low income communities, including the provision of local tax incentives and rebates; the simplification of building code requirements for chargers; and the establishment of charging stations and related infrastructure to support all-electric vehicles; (C) any “just transition” elements related to the above action, including the impact upon and opportunities for auto mechanics.

BACKGROUND

The earth is already too hot for safety. Humanity can no longer safely emit greenhouse gases if it wishes to avoid reaching irreversible climate tipping points.

Only one degree Celsius of global warming is already causing excessive and unnecessary damage worldwide. Together, Hurricanes Harvey and Irma are estimated to have cost upwards of $290 billion dollars. Hurricane Maria has cost Puerto Rico up to $90 billion. Hurricane Dorian was the most costly disaster in Bahamian history, estimated at $7 billion in property damage. The combined death tolls from these hurricanes are unprecedented.

Closer to home, the devastating wildfires in California have killed dozens of people, burned thousands of homes and other structures, caused the evacuation of hundreds of thousands of people, and are estimated to cost the state upwards of $80 billion a year.

Low income communities of color continue to suffer the most extreme impacts of climate disasters, underlying the environmental justice component of inaction. The nation and the world is in a climate emergency.

Extreme storm damage to refineries in Florida, Texas and along the Gulf Coast have caused price spikes in gasoline prices across the country. The volatility of fossil fuel prices will continue in a climate-disrupted future and will particularly impact low income residents.

Additionally, emissions from vehicles powered by fossil fuels and from production and refinement of fossil fuels contribute substantially to health problems for frontline communities living near freeways, oil drill sites and refineries. Disproportionately, the burden of dirty fuel energy is borne by low-income communities of color, while reductions in fossil fuel burning would have a measurable impact on asthma-induced emergency room visits across.

To drastically reduce greenhouse gas emissions, countries such as Great Britain, India, China and Germany have already set an end date on the sales of gasoline and diesel powered passenger vehicles. Due to the short-term climate emission dangers posed by methane leaks associated with natural gas extraction, the sale of natural gas vehicles should be included in any ban.

Furthermore, automobile manufacturers such as Audi and Volvo are moving toward all-electric vehicle (EV) sales and General Motors, Ford, Land Rover and BMW are introducing new lines as well. A healthy secondary electric vehicle market is already making EVs more affordable than ever.

If the City is to continue to thrive and play a role as an international leader in climate action, all efforts must be made to reduce greenhouse gas emissions in every sector, including transportation, as soon as possible. In order to protect and promote the health of its residents, the City should make all efforts to reduce exposure to toxic emissions from freeways, oil drill sites and refineries.

FISCAL IMPACTS OF RECOMMENDATION
To be determined.

ENVIRONMENTAL SUSTAINABILITY
The Berkeley City Council unanimously passed the Climate Emergency Declaration in June 2018, and has a record of passing legislation to protect our climate. It is important, now more than ever to take the next step to insure that we are prepared and ready for the climate crisis we will face.

CONTACT PERSON
Cheryl Davila
Councilmember, District 2
510.981.7120
cdavila@cityofberkeley.info

ATTACHMENTS:

1. Resolution

RESOLUTION NO. XXXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BERKELEY IN SUPPORT OF INTRODUCING AN ORDINANCE TERMINATING THE SALE OF GASOLINE, DIESEL, NATURAL GAS VEHICLES THROUGHOUT THE CITY OF BERKELEY BY 2025

WHEREAS, The Berkeley City Council unanimously passed the Climate Emergency Declaration on June 12, 2018; and

WHEREAS, the cities of Richmond, Oakland, Hayward, Alameda, El Cerrito, Chico, Fairfax, Healdsburg, Davis, Arcata, Cloverdale, Malibu, Petaluma, San Jose, San Mateo County, Santa Cruz City & County, Sonoma County and Windsor have also passed Climate Emergency Declarations; and

WHEREAS, There are over 48 cities throughout the United States who have declared, as well as over 1180 governments and 23 countries throughout the world. The declaration is the first step; and

WHEREAS, As unprecedented winter wildfires and ensuing mudslides destroyed parts of our City and region, a climate emergency mobilization of our City has never been more fiercely urgent; and

WHEREAS, Such an effort must end to the maximum extent technically feasible city-wide greenhouse gas emissions in every sector by 2025 and begin a large-scale effort to safely and justly remove carbon from the atmosphere; and

WHEREAS, Without an immediate and drastic change from the status quo, humans will cause irreversible and ever-worsening damage to the Earth's climate; and

WHEREAS, To act too late, or to be too cautious in our vision and do too little, carries the risk of condemning the City and its residents to an increasingly uninhabitable climate and potentially catastrophic economic losses caused by worsening disasters; and

WHEREAS, Abnormal wildfires, mudslides and other demonstrate that the climate emergency threatens everyone, the disasters wrought by an abruptly destabilizing climate have so far most devastatingly impacted lower-income communities of color first and worst. Drought, famine, and instability have devastated countries in the Global South; and

WHEREAS, Millions of climate refugees have already left their homes in search of a safe place to live. In the United States, we have seen after Hurricanes Katrina, Sandy, Harvey, Irma, Maria and Dorian how environmentally and economically vulnerable have been generally left to fend for themselves; and

WHEREAS, The City must therefore aggressively move to reduce and remove greenhouse gas emissions and adapt and restore ecosystems by rapidly adopting legislation to mandate such efforts Citywide and by doing so in such a way that lower-income and frontline communities of color benefit first from mitigation and adaptation funds. The City can thereby create a model for other cities to follow and use its global climate leadership standing to lead the way. By doing so, Berkeley can trigger a global mobilization to restore a safe climate, thereby creating the conditions for a future, not of chaos and misery, but of community and dignity; and

NOW, THEREFORE IT BE RESOLVED, that the Berkeley City Council directs the City Attorney be to prepare any draft ordinances to terminating the sale of gasoline, diesel and natural gas passenger vehicles by 2025; this shall include the termination of purchasing these vehicles to support City fleets and, for the general public, a staged phase out such as cars over $28K by

2023, cars over $22K by 2024, and all cars by 2025, so as to actively create a used electric vehicle market for lower income customers.

BE IT FURTHER RESOLVED, that the City Council directs the City Manager and Staff to be instructed to report to the Council in 90 days, in consultation with other City Departments on the feasibility of terminating the sale of gasoline, diesel and natural gas passenger vehicles throughout the city by 2025; this review should also include the termination of purchasing these vehicles to support City fleets and, for the general public, a staged phase out such as cars over $28K by 2023, cars over $22K by 2024, and all cars by 2025, so as to actively create a used electric vehicle market for lower income customers.

BE IT FURTHER RESOLVED, that the City Council directs all City Departments and proprietaries to report back on maximum emergency reductions in greenhouse gas emissions from their operations feasible by the end of 2025, with the highest priority on an equitable and just transition in all sectors; and

BE IT FURTHER RESOLVED, that the City Council directs the City Manager and/or Designee to report on ways to promote and facilitate the sale of all-electric vehicles in the City, particularly among low income communities, including the provision of local tax incentives and rebates; the simplification of building code requirements for chargers; and the establishment of charging stations and related infrastructure to support all-electric vehicles.

BE IT FURTHER RESOLVED, that the City Council directs the City Manager and/or Designee, in consultation with the Economic Development Department, be directed to report to Council in 90 days on any “just transition” elements related to the above action, including the impact and opportunities upon auto mechanics.

Community Environmental
Advisory Commission

09

ACTION CALENDAR
April 14, 2020

To: Honorable Mayor and Members of the City Council

From: Community Environmental Advisory Commission

Submitted by: Ben Gould, Chairperson, Community Environmental Advisory Commission

Subject: Prohibition on the Use of City Streets for Operating, Parking, or Idling Combustion Vehicles by 2045

RECOMMENDATION

Review and refer to the City Attorney for finalization the attached ordinance prohibiting the use of City-owned streets for the operation, parking, or idling of combustion vehicles beginning in 2045, and establishing an offset-driven fee-based enforcement mechanism.

SUMMARY

Achieving carbon neutrality by 2045 and an 80% reduction in greenhouse gas emissions by 2050 will require aggressive policies to phase out the use of fossil fuels for transportation. This proposed ordinance would prohibit vehicles which rely on burning fossil fuels (or other carbon-based fuels) from operating, parking, or idling on local City-owned streets. Enforcement is proposed to be through a fee structure similar to a congestion pricing zone, with pricing set to cover the cost of enforcement and of purchasing carbon offsets in order to achieve carbon neutrality.

FISCAL IMPACTS OF RECOMMENDATION

Some staff time for review. Additional staff time may be required leading up to 2045 to develop and establish a carbon offset program for combustion vehicles, though any such program would also be required for offsetting any residual emissions present in the city at such time. No ongoing net fiscal impacts, as any fiscal impacts associated with enforcement or program management are to be offset by levied fees.

Adoption of the ordinance may expose the City to other potential direct or indirect fiscal impacts, including a potential lawsuit, or impacts to sales, property, and other tax or fee revenues resulting from public behavior changes.

CURRENT SITUATION AND ITS EFFECTS

Citywide, transportation is the single largest source of greenhouse gas (GHG) emissions, contributing 60% of the city's total emissions. The City of Berkeley has adopted goals of being a Fossil Fuel Free city and becoming a net carbon sink by 2030, achieving carbon neutrality by 2045, achieving an 80% reduction in GHG emissions by 2050, and has declared a Climate Emergency, calling for "a just citywide emergency mobilization effort to end citywide greenhouse gas emissions as quickly as possible." However, greenhouse gas emissions from transportation are currently expected to grow.

Berkeley's Strategic Plan sets the goal of being a global leader in addressing climate change, advancing environmental justice, and protecting the environment. In line with this, City staff are working aggressively to develop a comprehensive action-based Electric Vehicle (EV) roadmap to find opportunities to increase equitable access to EV's within Berkeley's diverse community. This roadmap – currently in draft form – identifies the key barriers to electric mobility adoption, analyzes equity challenges and opportunities, and provides a comprehensive set of strategies to expand access to electric mobility choices throughout the city, including approaches which specifically tackle equity concerns in electric mobility, work towards net zero carbon, expand alternatives to driving, and call for city leadership.

In preparing this roadmap, staff has found that in order to reach the goal of carbon neutrality by 2045, given current vehicle turnover rates, the rate of EV uptake would need to accelerate dramatically, reaching 100% of new vehicle registrations by 2030 in order to achieve roughly 100% electrification by 2045. To achieve the City's voter-ratified goal of an 80% reduction in greenhouse gas emissions by 2050, roughly 100% of new vehicle registrations would have to be EVs by 2035.

Berkeley's current rate of EV uptake is not high enough to achieve this without significant policy changes. In 2017, only 16% of new personal vehicle registrations in Berkeley were EVs. This is a significantly higher adoption rate than much of the rest of California, but achieving Berkeley's goals would require this to be accelerated further still. At the current rate of uptake growth, Berkeley's newly registered vehicles would be 100% EVs in 2055. Assuming an average vehicle lifespan of ~15 years[1], there would still be combustion vehicles registered in Berkeley through at least 2070 – 25 years past the target date for carbon neutrality.

Expanding equitable access to electric mobility options for Berkeley residents is critical for driving uptake, including improving alternatives to driving and expanding public

[1] Based upon DMV data on roughly 30 million registered automobiles and light trucks (https://www.dmv.ca.gov/portal/wcm/connect/5aa16cd3-39a5-402f-9453-0d353706cc9a/official.pdf?MOD=AJPERES), and California New Car Dealers Association data on roughly 2 million new vehicle sales annually (https://www.cncda.org/wp-content/uploads/Cal-Covering-2Q-19.pdf), the lifespan of a typical vehicle in California is roughly 15 years.

charging infrastructure. The EV roadmap currently being prepared will be effective in the 5-10 year timeline it considers, and will help to substantially move the needle on Berkeley residents' EV uptake.

While the EV roadmap's efforts are critical, they will still fall short in achieving overall carbon neutrality. Many people who work, shop, or study in Berkeley either cannot afford or choose not to live in Berkeley, and so are less likely to be directly impacted by the EV roadmap's initiatives. Most other Bay Area cities have EV uptake rates even lower than Berkeley's, and are often doing less to accelerate the transition to EVs. In addition, Berkeley is served by numerous freight and delivery trucks bringing goods to Berkeley's businesses and residents, and these trucks are unlikely to be impacted by the EV roadmap.

The limited scope of the EV roadmap means it is unable to address the entire picture of Berkeley's greenhouse gas emissions from transportation, and should not be considered as the only set of approaches Berkeley can take. Other policies which support and align with the EV roadmap can help add to its effectiveness.

Without significant action, including the proposals in the EV Roadmap and more, it is extremely unlikely that Berkeley will be able to achieve the dramatic reduction in greenhouse gas emissions called for by the voters and its carbon neutrality goal.

At a regular meeting on Thursday, November 14, 2019, the Community Environmental Advisory Commission unanimously approved a motion to send the *Prohibition on the Use of City Street for Operating, Parking, or Idling Combustion Vehicles by 2045* recommendation to City Council (M/S/C) Gould, Hetzel. Ayes: Simmons, Varnhargen, Hetzel, Goldhaber, Gould. Abstained: De Leon. Absent: Ticconi.

BACKGROUND

In 2006, Berkeley voters overwhelmingly supported Measure G, calling to reduce greenhouse gas emissions by 80% below 1990 levels by 2050. Berkeley's original award-winning Climate Action Plan was built around this goal.

Following this, on June 12, 2018, Berkeley City Council unanimously declared a Climate Emergency, calling for "a just citywide emergency mobilization effort to end citywide greenhouse gas emissions as quickly as possible." Berkeley also set a goal of being a Fossil Fuel Free city, becoming a net carbon sink by 2030, and achieving carbon neutrality by 2045.

Citywide, transportation is the single largest source of greenhouse gas emissions, contributing 60% of the city's total emissions. Berkeley is home to, and a route for, tens of thousands of combustion-powered automobiles, trucks, and other vehicles which annually emit roughly 360,000 metric tons of carbon dioxide and other greenhouse

gases. Unfortunately, this share – and the total level of emissions – is currently expected to grow.

The generally accepted accounting methodology for greenhouse gas emissions, which was used to generate this estimate, only considers vehicle trips on public roads which either start or end within city limits as affecting the City's overall greenhouse gas emissions. In order to achieve carbon neutrality under that accounting methodology, therefore, the City must ensure that vehicle trips which start or end within city limits, traveling upon City streets, are carbon neutral by 2045.

The proposed policy would prohibit the use of City-owned streets for operating, parking, or idling combustion vehicles[2] beginning in 2045. Under the policy, combustion vehicles found to be operating, parked, or idle would be levied a fee to cover the cost to the City of purchasing a carbon offset to neutralize the emissions (along with an administrative fee to cover the cost of enforcement). In effect, this policy creates a zero-emission zone covering all local surface streets in Berkeley (with exceptions for state and federal highways), similar to congestion pricing zones in other cities.

This would be a novel and unprecedented policy approach which relies upon the principle of local police power over city streets to regulate the operation of certain vehicles. While this policy is novel, it effectively works as a zero-emission pricing zone – similar to a congestion zone, where vehicles are charged for their use of limited streetscape, vehicles are instead charged to offset the impact of their emissions. Vehicle operators who choose to operate a combustion vehicle do *not* face criminal penalties.

This unusual policy raises numerous questions and special considerations, which are elaborated upon in Attachments 2 and 3.

ENVIRONMENTAL SUSTAINABILITY

Prohibiting the use of City streets for the operation, parking, or idling of combustion vehicles within City limits will reduce fossil fuel use and prevent the release of greenhouse gases into the atmosphere. Requiring violators to cover the cost of carbon offsets would, if effective, ultimately bring the overall environmental impacts of combustion transportation down to effectively zero. Driving consumer shifts towards non-combustion vehicles, like electric vehicles, will reduce overall greenhouse gas

[2] A combustion vehicle is defined in the policy as any on-road land motor vehicle which relies upon the combustion or oxidation of any carbon-based fuel (such as gasoline, diesel, or compressed natural gas [CNG]) for power or propulsion. Combusting or oxidizing carbon-based fuels results in the creation of carbon dioxide, regardless of whether it is emitted.

emissions globally: on a life-cycle basis, electric vehicles have significantly lower overall greenhouse gas emissions[3,4].

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
The proposed policy is categorically exempt from CEQA under CEQA Guidelines Sections 15307 and 15308.

RATIONALE FOR RECOMMENDATION
CEAC recommends adopting the attached ordinance to prohibit the use of City streets for the operation, parking, or idling of combustion vehicles beginning in 2045, with certain exemptions, in order to achieve the City's carbon reduction and fossil-fuel-free goals.

In order to reach carbon neutrality without a significant, dramatic, and costly annual expenditure in carbon offsets to neutralize emissions, Berkeley needs a long-term strategy to both drive behavior change among all who work, play, or frequent our city, and to raise any funds that may be required to procure the necessary offsets in 2045. This proposed policy achieves that without encountering insurmountable legal barriers.

Berkeley is extremely unlikely to meet its carbon reduction and fossil-free goals without aggressive action on transportation decarbonization. Expanding efforts to drive EV uptake is critical, and CEAC believes that setting a sunset date for combustion vehicles will dramatically improve the success of EV uptake efforts. It may ultimately be the only way to ensure a full citywide transition to decarbonized transportation.

Structuring enforcement of the prohibition as enforcement of an emissions-free zone throughout most streets in the city, with a fee to enter with a combustion vehicle, aligns the policy with existing domestic and international legal precedent for congestion and low-emission zones, and ensures it is not a de facto mandate or an undue burden. Depositing any excess fees collected into a restricted fund for sustainability projects and programs, and particularly zero-emission transportation initiatives, ensures the fees are used appropriately.

In order to ensure full compliance with all applicable state and federal law and precedents, CEAC recommends a limited set of exemptions to minimize undue burdens to interstate commerce, ensure ongoing public services and public safety, and comply with other state and federal preemptions.

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[3] Cleaner Cars from Cradle to Grave, Union of Concerned Scientists: https://www.ucsusa.org/clean-vehicles/electric-vehicles/life-cycle-ev-emissions (accessed September 2019)
[4] Life Cycle Analysis of Electric Vehicles, University of British Columbia: https://sustain.ubc.ca/sites/default/files/2018-63%20Lifecycle%20Analysis%20of%20Electric%20Vehicles_Kukreja.pdf (accessed September 2019)

ALTERNATIVE ACTIONS CONSIDERED

CEAC considered taking no immediate action and instead waiting to see the impacts of the City's planned EV roadmap. However, upon consideration and recognition of the roadmap's finding that consumers must begin planning for full decarbonization 15-20 years in advance, we determined that waiting 5-10 years to evaluate the impacts of the EV roadmap strategy would not ensure Berkeley is able to meet its carbon neutral target. Instead, CEAC believes that this policy would lend weight and import to the EV roadmap strategy, as it is short- to medium-term plans like the EV roadmap that will make this larger, full decarbonization effort feasible in 25 years – without both working together, neither are likely to be successful.

CEAC considered a gradual, phased approach that would restrict combustion vehicles on a narrower set of streets initially, and over time expand that to include more of the city. While the city can expect a gradual, phased increase in the use of electric vehicles, it is likely to be dispersed throughout the city as residents, apartments, and businesses install chargers or purchase vehicles over time. Other policies, such as those proposed in the EV roadmap, will help encourage and accelerate this gradual uptake; however, phasing certain streets into a combustion-free zone did not provide a clear benefit and could, ultimately, reduce in an *increase* in greenhouse gas emissions as combustion vehicles attempt to route around limited areas which are combustion-free.

CEAC also considered a less stringent enforcement mechanism, but determined that weaker enforcement would dramatically reduce the effectiveness of the policy. CEAC also recognizes the ability of Council to direct the City Manager on enforcement priorities.

CEAC considered leaving excess fees collected as unrestricted revenue, but determined that would potentially hamper the ability of the city to achieve a just citywide zero-emission mobility transition.

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission's Report.

CONTACT PERSON

Ben Gould, Chair, Community Environmental Advisory Commission, 510-725-9176

Attachments:
1: Ordinance
2: Frequently Asked Questions
3: Analysis of Legal Considerations

ORDINANCE NO. -N.S.

AMENDING BERKELEY MUNICIPAL CODE TITLE 14 TO PROHIBIT THE OPERATION OF COMBUSTION-POWERED VEHICLES

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

Section 1. That the Berkeley Municipal Code Chapter 14.94 is added to read as follows:

Chapter 14.94
OPERATION OF COMBUSTION VEHICLES

Sections:

14.94.010 Findings

A. Climate change, caused by the generation of carbon dioxide and other greenhouse gases, is harmful to human health and public safety, acting through increased risks of wildfire, drought, landslides, heat stress, sea level rise, disease, pests, environmental degradation, and other pathways.

B. The City of Berkeley has adopted a goal of carbon neutrality by 2045, becoming a fossil fuel free city, and reducing greenhouse gas emissions by 80% below 1990 levels by 2050.

C. The State of California has adopted the goal of carbon neutrality by 2045, and reducing greenhouse gas emissions by 80% below 1990 levels by 2050.

D. Combustion vehicles are responsible for over 60% of the greenhouse gas emissions attributable to the City of Berkeley.

E. At present, over 95% of all vehicles traveling through the City of Berkeley are combustion vehicles. In 2017, only 17% of new vehicles registered in the City of Berkeley were plug-in vehicles.

F. In order to reach carbon neutrality by 2045, projections show that there must be an aggressive and unprecedented transition to electric vehicles.

G. Berkeley's current rate of uptake is not projected to reach the goal of carbon neutrality before 2045.

H. The California Vehicle Code (CVC § 21101 (c)) grants cities the authority to regulate the use of certain roads by certain vehicles.

I. The City of Berkeley is a charter city with jurisdiction over municipal affairs, including the use of public right of way.

J. Due to improvements in battery technology and declining costs, the prices of electric vehicles are expected to decline, becoming cost-competitive with traditional combustion vehicles in under 10 years and likely subsequently declining further, while the available range continues to further increase.

K. Disadvantaged and low-income communities have traditionally shouldered the brunt of the impacts associated with combustion vehicles.

L. Combustion vehicles, by the mechanics of their engine operation, exacerbate noise and heat issues in already increasingly noisy, hot cities and neighborhoods.

M. Combustion vehicles, by necessity of their design, transport and store hazardous, polluting chemicals as fuel – such as gasoline – which pose risks of contamination to air and water.

N. Combustion vehicles, by necessity of their design, transport and store hazardous polluting chemicals as fuel which pose serious risks of fire and explosion, threatening health, property, and public safety.

O. Advancing the adoption of non-combustion vehicles helps make them more affordable and supports the expansion of supportive infrastructure.

P. The State of California, as well as Bay Area counties, cities, and community choice energy providers are working to increase equitable access to alternatives to combustion vehicles, such as by supporting electric vehicles and charging infrastructure.

Q. Achieving a transportation system which is nearly 100% decarbonized is feasible and viable by 2045.

R. Significant action at the local and state level is required to drive full decarbonization by 2045.

14.94.020 Purpose

The purpose of this chapter is to promote the health and safety of Berkeley residents and visitors, to address environmental impacts and prevent climate change from the emission of greenhouse gases resulting from the combustion of fossil fuels used for transportation, and to fulfill upon the intent of the voters as expressed in Berkeley's 2006 Measure G.

14.94.030 Definitions

For the purposes of this chapter, the following words and phrases shall have the meaning respectively ascribed to them by this section:

A. "Combustion vehicle" shall mean any on-road land motor vehicle which uses the combustion or oxidation of any carbon-based fuel to provide power or propulsion.

B. "Carbon offset" shall mean a competitively procured, third-party verified project or program which, with the funding provided through the purchase of the offset, results in the permanent, indefinite storage or sequestration of carbon dioxide.

C. "Greenhouse gas" shall mean any planet-warming chemical which is a gas at standard temperature and pressure, and for which anthropogenic sources are disproportionately responsible for their presence in the atmosphere including, but not limited to, carbon dioxide, methane, nitrous oxides, hydrocarbons, hydrofluorocarbons, hydrochlorofluorocarbons, and others.

D. "Combustion Vehicle Carbon Offset Program" shall be any program through which the City of Berkeley assesses its attributable share of emissions from any combustion vehicles passing through its city limits using a standard and widely accepted methodology, and acquires and retires carbon offsets equal to the attributable emissions from those combustion vehicles.

E. "Green Initiative Fund" shall be any program through which the City of Berkeley dedicates and allocates funding for programs and projects which improve environmental sustainability, including but not limited to reducing greenhouse gas emissions, improving energy efficiency, reducing or diverting waste, reducing or cleaning up pollution, reducing or cleaning stormwater runoff, improving resiliency, and reducing dependency on automobiles.

14.94.040 Prohibition

Beginning January 1st, 2045, it shall be unlawful to operate any combustion vehicle upon any public streets or highways exclusively under the jurisdiction of the City of Berkeley.

Beginning January 1st, 2045, it shall be unlawful to park or idle any combustion vehicle upon any public street or highway exclusively under the jurisdiction of the City of Berkeley.

14.94.050 Enforcement

A. Beginning January 1st, 2045, any combustion vehicle operating, parked, or idling upon any public street or highway exclusively under the jurisdiction of the City of Berkeley shall pay a fine for each calendar day in which it is found operating, parked, or idling.

B. The City of Berkeley shall set the fine amount annually based upon the cost of operating the Combustion Vehicle Carbon Offset Program and the cost of enforcing and collecting the fine.

C. Fines collected shall be used to pay for the Combustion Vehicle Carbon Offset Program and the staff time required to enforce and collect the fines.

D. At the end of each fiscal year, any fines collected in excess of those needed to cover the full cost of the Combustion Vehicle Carbon Offset Program and the staff time spent enforcing and collecting the fines, shall be deposited into the City's Green Initiative Fund, to support programs and projects which facilitate and encourage the use of zero-emission modes of transportation, including but not limited to pedestrian improvements, bicycle and scooter lanes, public transit infrastructure, public electric vehicle charging, and/or educational programs.

E. Fines shall be levied equally across all combustion vehicles, independent of vehicle make, manufacturer, type, class, model year, date of manufacture, date of sale, operator, place of registration, or other factor.

14.94.060 Exemptions

This Section shall not apply to:

A. Combustion vehicles owned or operated by: government bodies, utilities or telecommunications providers, healthcare providers, emergency services, paratransit services, or passenger stage corporations (as defined in PUC § 1031).

B. Combustion vehicles operating, parked, or idling upon the I-80/I-580 corridor, State Route 123 (San Pablo Ave), State Route 13 (Ashby Ave, and Tunnel Road between Claremont Ave and Hiller Dr.), or other designated state or federal highways at the time of enforcement.

C. New motor vehicles, as defined in the Clean Air Act under 42 U.S. Code § 7550(3), where "the term 'new motor vehicle' means a motor vehicle the equitable or legal title to which has never been transferred to an ultimate purchaser." However, for imported vehicles, the term "new motor vehicle" means "mean a motor vehicle and engine, respectively, manufactured after the effective date of a regulation issued under [42 U.S. Code § 7521]… which is applicable to such vehicle or engine (or which would be

applicable to such vehicle or engine had it been manufactured for importation into the United States).”

14.94.070 Severability

If any section, subsection, sentence, clause or phrase of this chapter is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portions of this chapter. In addition, the City Council hereby declares that it would have passed the ordinance codified in this chapter, and each and every section, subsection, sentence, clause or phrase not declared invalid or unconstitutional without regard to whether any portion of this chapter would be subsequently declared invalid or unconstitutional.

Frequently Asked Questions

Is this even legal?
In developing this approach, several potential legal barriers were considered and evaluated. None were found to expressly prohibit, and several actually reinforce the underlying legal principles behind this approach. See Appendix 2 (Attachment 3) for more information.

Why set policy so far in advance? Why not take a more incremental approach?
Traditional policy approaches have worked on much narrower time horizons, such as 3-5 years. However, traditional policy approaches have never attempted a wholesale transformation as complete and thorough as that which we must achieve within the next 30 years to maintain a habitable planet. Nor have the stakes ever been this high.

Fundamentally, this policy is intended to help reshape public expectations and decision-making at a grand scale – while traditional policies have aimed to achieve incremental, progressive improvements, this one aims to achieve a world in which we truly achieve zero emissions. The types of decisions and planning which must be made to achieve that cannot be affected by implementing this policy one street at a time.

Electric vehicles are expensive. Won't this disproportionately impact low-income and disadvantaged communities?
An additional concern raised by this proposed policy is equity concerns and access to electric vehicles by low-income and disadvantaged communities.

Electric vehicles across all on-road types are expected to be widely available and achieve cost parity, if not savings, within the next decade (by 2030). Both Bloomberg and the International Council for Clean Transportation expect price parity for passenger vehicles to be achieved between 2022[5] and 2028[6], respectively. Bloomberg has already found that electric buses are cheaper today, in 2019, on a total cost of ownership basis across nearly all use cases, and will achieve unsubsidized parity by around 2030[7]. For trucks, McKinsey Energy Insights expects light- and medium-duty trucks running regional and urban trips to reach cost parity by roughly 2028. Long-haul trips and heavy-duty trucks may not achieve cost parity until after 2030, although they have economical use cases much sooner[8].

Because EVs are anticipated to reach parity before 2030, there is almost certain to be a wide variety of options available, both new and used, at a mix of price points, by the

[5] https://about.bnef.com/blog/bullard-electric-car-price-tag-shrinks-along-battery-cost/
[6] https://theicct.org/publications/update-US-2030-electric-vehicle-cost
[7] https://about.bnef.com/blog/electric-buses-cities-driving-towards-cleaner-air-lower-co2/
[8] https://www.mckinseyenergyinsights.com/insights/new-reality-electric-trucks-and-their-implications-on-energy-demand/

time this policy takes effect in 2045. Furthermore, the availability of EVs for low-income communities in 2045 depends heavily on consumer and government choices over the next 25 years; a policy like this would likely only expand the availability of EVs compared to a business-as-usual scenario.

Low-income and disadvantaged communities today are disproportionately impacted by the effects of air pollution and climate change. Implementing this policy will result in significant benefits to these communities.

How will this be enforced? Won't it disproportionately impact low-income and disadvantaged communities?
As 2045 approaches, Berkeley could further ensure the policy will be enforced in an equitable fashion by adding flexibility through amendments or direction to the city Manager on enforcement approaches.

A variety of mechanisms exist for enforcement. Because any combustion vehicle has a tailpipe, it is relatively easy to spot a combustion vehicle during ordinary parking enforcement activities or on standard police patrols, minimizing surveillance concerns. If Berkeley chooses to invest in automated billing systems (such as for a congestion pricing zone), or if vehicle position information is shared on a network (such as for autonomous vehicles), billing could be done automatically.

Equity and affordability challenges could be addressed by setting a cap on fees levied annually based on a certain percentage of household income, or a permitting system could be established to grant exemptions to enforcement. Either of these approaches would work with a variety of enforcement mechanisms. Due to the likelihood of significant technological change in the intervening decades, and the uncertainty around non-combustion vehicle uptake and availability for low-income households, these issues would need to be evaluated at a future date.

Furthermore, low-income and disadvantaged communities today are disproportionately impacted by the effects of air pollution and climate change. Implementing this policy will result in significant benefits to these communities.

Where will all these electric vehicles charge? What about people who can't charge at home?
City staff are in the process of developing an EV Roadmap, which will include recommendations for expanding EV charging citywide, particularly to serve low-income and multi-unit building residents. These approaches will include expanded workplace and public charging (e.g., at grocery stores and parking garages), as well as curbside charging in neighborhoods and commercial districts. Over the next 25 years, Berkeley should have ample time to prepare for a dramatic increase in the usage of electric vehicles.

Have other cities enacted similar policies?
The City of London has enacted a low-emission zone[9] and, within it, an ultra-low emission zone[10]. These zones charge fees to drivers of polluting vehicles on a daily basis to drive within the zone, with a comprehensive program for enforcement across vehicle types and considering needs for discounts and exemptions. Numerous additional cities in Europe have created low-emission zones[11], frequently targeting diesel vehicles (which are more prevalent due to the popularity of diesel automobiles). The city center of Paris prohibits larger and older vehicles[12], while Barcelona is in the process of establishing a similar low-emission zone[13] for older vehicles which do not meet more modern emission standards.

No city has yet enacted a low-emission zone in the United States, though New York has discussed congestion pricing[14] and San Francisco has set forth the goal of achieving 100% of trips taken by sustainable modes by 2040[15]. Berkeley could be the first city in the world to pass a law establishing a future zero-emission zone, and play a leadership role in supporting other cities regionally, nationally, and globally in moving towards a clean and sustainable future for transportation. Berkeley's unique political environment empowers it to advance groundbreaking, socially conscious environmental policy, helping clear the way for other cities to follow suit.

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[9] Transport for London, "Low Emission Zone": https://tfl.gov.uk/modes/driving/low-emission-zone.
[10] Transport for London, "Ultra Low Emission Zone": https://tfl.gov.uk/modes/driving/ultra-low-emission-zone.
[11] Wikipedia, "Low-Emission Zone": https://en.wikipedia.org/wiki/Low-emission_zone.
[12] Environmental Badge, "Ecological zone Paris": https://www.environmentalbadge.com/eco-zone-paris/.
[13] Distintivo-Ambiental.es, "The LEZ Barcelona/City environmental zone": https://www.distintivo-ambiental.es/en/info-menu/die-umweltzonen/barcelonacity-lez.html
[14] The New York Tiems, "Confused about congestion pricing? Here's what we know": https://www.nytimes.com/2019/04/24/nyregion/what-is-congestion-pricing.html
[15] Mayor's Electric Vehicle Working Group Electric Mobility Subcommittee, "Proposed Electric Vehicle Roadmap for San Francisco": https://www.sfmta.com/sites/default/files/reports-and-documents/2019/07/evroadmap_final_june2019.pdf

Analysis of Legal Considerations
In reviewing the potential legal barriers to implementation, CEAC consulted with environmental lawyers with particular expertise in clean air and transportation issues from Coltura, EarthJustice, Sierra Club, and Environmental Defense Fund. The considerations identified are explained below.

Federal Preemption
Federal laws which conflict with state or local laws trump those laws, under the Supremacy Clause of the U.S. Constitution. There are several federal laws which may potentially conflict with this proposed policy. Fortunately, in determining federal preemption, the courts generally start "with the assumption that the historic police powers of the States were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress." *Medtronic, Inc.* v. *Lohr,* 518 U.S. 470, 485 (1996).

In passing the Clean Air Act, Congress found that "air pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary responsibility of States and local governments" (42 USC § 7401(a)(3)). In *Huron Portland Cement Co.* v. *Detroit,* 362 U.S. 440, 442 (1960), the Supreme Court found that "Legislation designed to free from pollution the very air that people breathe clearly falls within the exercise of even the most traditional concept of what is compendiously known as the police power."

As a result, local laws to regulate air pollution, such as the emission of carbon dioxide and other greenhouse gases, fall under the traditional scopes of local authorities. Federal laws which may conflict must demonstrate clear legislative intent to supersede this authority.

Relating To Consideration
When federal laws are intended to preempt local regulations, they frequently prohibit states and cities from implementing laws "related to" the area under federal concern. For example, the Clean Air Act prohibits states and cities from adopting standards "relating to" the control of emissions; the Energy Policy Conservation Act prohibits states and cities from adopting laws "related to" fuel economy standards; and the Federal Aviation Administration Authorization Act (FAAAA) prohibits states and cities from enacting laws "related to" the price, route, or service of any motor carrier.

Under an extremely broad interpretation of "related to", it is possible that just about any policy could be construed as "related to" a preempted area, as it could have indirect effects on that area. For instance, the recent increase in bridge tolls throughout the Bay Area to raise funds for public transportation could be construed as "related to" the price of motor carriers, as higher bridge tolls leads to higher prices, and thus it could be argued that it would be pre-empted under the FAAAA.

However, prior case law indicates that laws and regulations which are not directly related are not preempted. For example, in *Californians for Safe and Competitive Dump Truck Transportation v. AFL CIO*, the Ninth Circuit Court of Appeals found that while California's Prevailing Wage Law has effects on price, routes, and services of motor carriers, it is only an indirect, remote, and tenuous effect and thus not pre-empted by the FAAAA.

More broadly, the Supreme Court decision in *California Division of Labor Standards Enforcement et al. v. Dillingham Construction, N.A., Inc., et al* provides further precedent as to what laws are considered "related to" under federal preemption: the unanimous opinion finds that laws are preempted if they impose requirements by reference to, or a connection with, an area of preemption. In a concurring opinion, Justice Scalia, joined by Justice Ginsburg, wrote that "the 'relate to' clause of the pre emption provision is meant, not to set forth a test for pre emption, but rather to identify the field in which ordinary field pre emption applies."

As a result, "related to" can broadly be understood to apply if the laws under question are within the field identified by the area of preemption, and if the laws also impose requirements by reference to, or in connection with, an area of preemption.

Potential Federal Preemption

Clean Air Act (CAA)

The Clean Air Act grants the federal government authority to set emission standards for new vehicles (and provides California the opportunity to set its own, subject to findings by the EPA). Local jurisdictions are expressly prohibited from setting emission standards for, or otherwise regulating emissions of, new vehicles, as stated in 42 U.S. Code § 7543(a): "No state or any political subdivision thereof shall adopt or enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part."

Two key components of § 7543(a) must be further defined. Firstly, as used in this section, a "standard relating to the control of emissions" means an emission standard, as defined in 42 U.S. Code § 7602(k): "The [term]… 'emission standard' mean[s] a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter."

Secondly, 42 U.S. Code § 7550(3) defines "new motor vehicles" as "…a motor vehicle the equitable or legal title to which has never been transferred to an ultimate purchaser."

Ultimately, this means that states and cities are clearly preempted from setting standards that affect how vehicles are manufactured (with the exception that California may be granted a waiver from this preemption). Case law[16,17] has found that requirements to purchase certain vehicles based upon emissions is similarly subject to preemption.

This policy does not attempt to enforce standards for how vehicles are manufactured or sold based on emissions. Berkeley does not need to, and should not, make any attempt to set or enforce standards for emissions from new vehicles.

To achieve its goal of carbon neutrality under the standard greenhouse gas accounting methodology, Berkeley need only address the use of combustion vehicles for trips which start or end in Berkeley. However, combustion vehicles may be sold in Berkeley and stored or used on private property, or transported outside of the city and operated elsewhere, while having no impact on the city's overall emissions.

As a result, new vehicles (following the definition in § 7550(3)) are explicitly exempted from this policy (14.94.060.C).

As far as state and national emission standards for new motor vehicles are concerned, Berkeley's state and national elected leaders are champions for the environment and public health, and the city can reasonably rely upon them to advocate for the city's best interests in setting state and national policies on new vehicle emission standards.

Under the Clean Air Act, 42 U.S. Code § 7543(d) states that "Nothing in this part shall preclude or deny to any State or political subdivision thereof the right otherwise to control, regulate, or restrict the use, operation, or movement of registered or licensed motor vehicles."

While the Clean Air Act does preempt cities from regulating new vehicles, it largely defines those as unsold vehicles. Otherwise, it reinforces the principle that cities are permitted to use local police power to regulate the operation of vehicles.

<u>Energy Policy and Conservation Act (EPCA)</u>
The EPCA grants the federal government authority to set fuel economy standards for new vehicles, and subsequently prohibits local jurisdictions from "adopt[ing] or enforc[ing] a law or regulation related to fuel economy standards…" (49 U.S. Code § 32919(a)).

Berkeley is unconcerned with fuel economy (distance traveled per unit of energy), and this proposed policy has no relation to fuel economy standards.

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[16] *Engine Manufacturers. Association. v. South Coast Air Quality Management District*, 2004
[17] *Metropolitan Taxicab Board of Trade v. City of New York*, 2009

As with the Clean Air Act, Berkeley is concerned with the emission of greenhouse gases associated with the operation of combustion vehicles. The fuel economy of a new vehicle is not relevant. Furthermore, vehicles sold in Berkeley could be transported and operated outside of the city, or on private property, or pass through without stopping, without affecting the City's greenhouse gas emissions, and so Berkeley does not need to, and should not, make any attempt to regulate fuel economy of new vehicles.

This policy does not attempt to do so.

FAA Authorization Act (FAAAA)
The FAA Authorization Act (49 US Code § 14501) prohibits states and cities from enacting laws related to the price, route, or service of any motor carrier (a person providing motor vehicle transportation for compensation).

As previously discussed, under an extremely broad interpretation of "relating to", it is possible that this policy could be construed as "relating to" price, route, or service, as it could have indirect effects on prices or routes, or service (if the vehicle's method of propulsion is considered an element of a motor carrier's service).

However, this policy does not specifically reference or have a direct connection to motor carriers; nor does it directly affect prices, routes, or services; nor is it within the field of preemption intended under the FAAAA. As a result, under the precedent for areas of "related to" preemption, it is unlikely to be found to be in violation of the FAAAA.

Interstate Commerce
The "dormant commerce clause," derived from inferences of the Commerce Clause of the U.S. Constitution, requires that any local or state law which affects interstate commerce must not discriminate against out-of-state commerce, and must not be unduly burdensome, with exceptions available if there is no other way to achieve an important goal.

This policy may have impacts on interstate commerce, as either individuals or goods may travel across state lines to conduct business in Berkeley using a combustion vehicle. However, Berkeley's voters clearly consider reducing greenhouse gas emissions and achieving carbon neutrality to be an important goal, as evidenced by the overwhelming 82% support from voters for the 2006 Measure G. As Berkeley cannot physically prevent combustion vehicles from entering the city, there is no other way to achieve carbon neutrality without collecting the revenue necessary to offset the emissions associated with combustion vehicle trips.

The burden on interstate commerce is minimized by exempting the state and federal highways passing through Berkeley, and ensuring there are no criminal penalties associated with operating a combustion vehicle. Furthermore, Berkeley is a city well-

served by exceptional local and regional transit services, as well as bicyclist and pedestrian infrastructure, reducing the need to drive into or within the city. It is also in close proximity to ports, freight rail yards, and regional distribution centers, reducing the need for goods to be delivered by long-haul truck directly from the point of origin, and thereby reducing any burden from haulers which choose to switch to a zero-emission vehicle for final delivery within the city to avoid the carbon offset fee.

Potential State Preemption

Municipal Affairs

Generally, local jurisdictions are preempted from regulating in areas which are subject to state control. Charter cities like Berkeley are granted authority over municipal affairs, but what exactly is considered a municipal affair is typically decided by the courts on a case-by-case basis. Frequently, courts will overturn arguments based upon municipal affairs if the state has already issued extensive regulations or legislation on the issue, or if there exists a paramount need for state control over the subject.

To date, the State of California has taken a mixed approach to achieving its statewide emissions reductions goals. In some areas, like energy, the State has taken a highly regulatory approach, setting renewable portfolio standards and implementing cap-and-trade. However, in areas relating to transportation, and in particular the strategies that local governments can deploy to reduce greenhouse gas emissions from transportation, the State has to date treated it as a municipal affair. SB 375, the Sustainable Communities and Climate Protection Act of 2008, has served as the cornerstone of the State's strategy for reducing vehicle miles traveled for over a decade. SB 375 directs the California Air Resources Board to set targets for regional emissions reductions from passenger vehicles, and subsequently wholly recognizes the right of regional and local governments to custom-tailor their approach to reducing VMT and transportation GHGs based upon local conditions and needs. Berkeley has traditionally set policies regulating the use of its local roads to achieve GHG and VMT reductions as though it is a municipal affair.

Berkeley's voters also clearly consider local reductions in greenhouse gas emissions to be a municipal affair. In 2006, an overwhelming 82% of Berkeley's voters supported Measure G, which proposed establishing a goal of 80% reduction in greenhouse gas emissions by 2050 and advising the Mayor to work on a Climate Action Plan. This direct mandate by Berkeley's voters calls for the city to take aggressive action, particularly if it finds the state's actions alone will not achieve the city's goals.

California Vehicle Code

The state's vehicle code generally sets the rules of the road and requirements for vehicles to ensure safety. In addition, CVC § 21101 (c) states "Local authorities, for those highways under their jurisdiction, may adopt rules and regulations by ordinance or resolution on the following matters… Prohibiting the use of particular highways by certain vehicles," except for passenger stage corporations, as provided in the Public

Utilities Code. Passenger stage corporations are granted an exemption from the proposed policy.

Based upon this section, it appears that the State considers regulating the use of local streets to be a municipal affair, and that prohibiting the use of local city streets by combustion vehicles is an application of local police power authorized under both state and federal law.

No other applicable laws, legal principles, examples from case law, or precedents were identified. As such, based upon review of the above considerations, there do not appear to be insurmountable existing federal or state legal barriers to implementing a policy of this type.

Community Environmental
Advisory Commission

10

ACTION CALENDAR
April 14, 2020

To: Honorable Mayor and Members of the City Council

From: Community Environmental Advisory Commission

Submitted by: Ben Gould, Chairperson, Community Environmental Advisory Commission

Subject: Prohibition on the Sale of Gasoline, Diesel, and Other Carbon-Based Transportation Fuels by 2045

RECOMMENDATION

Review and refer to the City Attorney for finalization the attached ordinance prohibiting the sale of gasoline, diesel, and other carbon-based transportation fuels effective January 1st, 2045.

FISCAL IMPACTS OF RECOMMENDATION

Some staff time for review and finalization of the ordinance. Adoption of the ordinance itself may expose the City to potential fiscal impacts, including risk of a lawsuit and, if ultimately enforced, additional fiscal impacts from impacts to sales, property, and other tax or fee revenues.

CURRENT SITUATION AND ITS EFFECTS

Numerous Berkeley businesses are fossil fuel dealers, promoting the sale and use of carbon-based transportation fuels which are known to pollute our air, water, and soil; pose major fire risks; contribute to the risk of cancer; and are either potent greenhouse gases or, upon combustion, leading contributors to climate change.

These carbon-based transportation fuel dealerships – colloquially known as gas stations – are known to cause significant traffic and congestion, generate elevated levels of carcinogenic air pollutants in their local neighborhoods, and are frequently found to have leaked toxic chemicals into the ground, contaminating our soil and groundwater.

In 2018 alone, according to California Energy Commission data, over 20 million gallons of gasoline was sold in Berkeley at roughly 15 gas stations throughout the city. Ten of these gas stations had unresolved CalEPA violations as of October 2019.

The transportation of these fuels is also extremely dangerous. Vehicles transporting or storing fossil fuels regularly collide, leading to fuel spills or leaks – further contaminating water and/or soil and/or air – and posing major risks of fire or explosion, with the

potential for significant damage to property and harm to public safety. Alternatively, even if the vehicles themselves do not themselves have fuel leaks, the firefighting materials that must be used to prevent serious fires or explosions are themselves hazardous and difficult to clean up.

These fuels are typically used to power the operation of roughly 97% of all vehicles registered in the City of Berkeley. However, the City, County, and State are all working to dramatically increase the use and availability of vehicles which do not rely upon these hazardous chemicals. One such alternative – electric vehicles – are expected to reach price parity with traditional combustion-powered vehicles by roughly 2025. In addition, the City of Berkeley has adopted the goal of carbon neutrality by 2045, which – if successful – will require ending the use of these fuels.

There are also numerous other fossil fuel dealerships located outside of Berkeley, ensuring that these fuels are still accessible to anyone who is either unable or chooses not to switch to alternatives.

At a regular meeting on Thursday, November 14, 2019, the Community Environmental Advisory Commission unanimously approved a motion to send the *Prohibition on sales of Carbon-Based Transportation Fuels by* 2045 recommendation to City Council (M/S/C) Gould, Hetzel. Ayes: Simmons, Varnhargen, Hetzel, Goldhaber, Gould. Abstained: De Leon. Absent: Ticconi.

BACKGROUND

Berkeley has permitted and even encouraged the sale of transportation fuels for decades. In recent years the cumulative harmful impacts of these chemicals across environmental, health, and safety impacts has become clear, and recently the City Council adopted a Fossil Fuel Free Berkeley resolution, setting the goal of eliminating fossil fuels – the majority of which are carbon-based transportation fuels – in Berkeley.

Gasoline, diesel, and other carbon-based transportation fuels are known to be harmful chemicals, posing a variety of risks to human health, public safety, and the environment, both of their own virtue and as a result of their combustion or oxidation for powering transportation[1,2,3].

These chemicals have the same health and safety risks and environmental impacts regardless of the source or feedstock – benzene, found in gasoline, is a known

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[1] Material Safety Data Sheet: Gasoline, All Grades, Vermillion County, IL: https://www.vercounty.org/MSDS/EMA/9950allgradesgasoline.pdf (accessed September 2019)
[2] Safety Data Sheet: Diesel Fuels, Valero: https://www.valero.com/en-us/Documents/OSHA_GHS_SDS/SDS%20US%20-%20102-GHS%20DIESEL%20FUELS%20rev2%205-14.pdf (accessed September 2019)
[3] Safety Data Sheet: Natural Gas Odorized, Hess Corporation: https://www.hess.com/docs/us-safety-data-sheets/natural-gas.pdf?sfvrsn=2 (accessed September 2019)

carcinogen whether it is derived from petroleum or from corn, and biodiesel poses the same fire risks as regular diesel. As a result, truly addressing the health and safety impacts of these chemicals requires addressing the chemicals regardless of their origination source.

The hazards of these chemicals are significant and acute, and even if the chemicals themselves do not escape into the environment or catch fire, the risk of them doing so is so severe that efforts to control or prevent them from doing so is similarly damaging.

In one recent instance in Berkeley, the cargo of a recycling truck caught fire. This recycling truck was also carrying compressed natural gas (CNG), a type of carbon-based transportation fuel. In a memo by the city manager, this fire was described as "extremely dangerous," a "highly explosive threat to nearby people and homes," and a "potentially explosive, deadly disaster," due to the risk of the CNG either catching fire or heating up to the point of explosion. According to the memo, a similar garbage truck fire in 2015 created "an explosion that sent shrapnel in 360 degrees, including one compressed natural gas tank that flew a quarter of a mile."

To put out this fire fast enough to prevent this potentially deadly explosion, the firefighting team deployed special foams originally designed to fight wildfires. These foams spilled into a storm drain and polluted Berkeley's natural waterways, leading to the death of 63 threatened Central Coast California Steelhead Trout.

Even if Berkeley's trucks were fueled with a renewable, non-fossil CNG, this near-disaster – and the lesser disaster that resulted from it – would have happened regardless. The health and safety risk derives from the chemical nature and composition of the fuels, not the feedstock used to create them.

ENVIRONMENTAL SUSTAINABILITY

Banning the sale of gasoline, diesel, and other carbon-based transportation fuels will improve local air quality, protect our soil and waterways, and improve public health and safety.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The proposed policy is categorically exempt from CEQA under CEQA Guidelines Sections 15307 and 15308.

RATIONALE FOR RECOMMENDATION

Eliminating the sale of these carbon-based transportation fuels will reduce one of the major environmental, public health, and safety hazards currently prevalent in the City of Berkeley.

Providing a 25-year phaseout period will ensure a smooth transition that businesses and individuals can successfully plan for without unconstitutionally taking or eliminating economic uses of property.

ALTERNATIVE ACTIONS CONSIDERED

CEAC considered taking no action, but determined that continuing to permit the sale of carbon-based transportation fuels would not achieve a fossil fuel free Berkeley, as set forth in the Fossil Fuel Free Berkeley resolution.

CEAC considered providing a carve-out exemption for carbon-based transportation fuels that are derived from non-petroleum / fossil sources. CEAC determined that such an exemption would be prohibitively difficult to enforce, and would not achieve the desired goal of reducing health and safety risks.

CEAC considered prohibiting only certain carbon-based transportation fuels, but did not find substantial health and safety, or environmental reasons which would justify permitting gasoline, diesel, or compressed natural gas but not the others.

CEAC considered a shorter phase-out period (such as 2040 or 2030) or a more extended one (such as 2050 or 2055) but determined that 2045 best aligned with other policies and programs in place, proposed, or likely at the local, regional, state, and national level to ensure that an adequate supply of vehicles and infrastructure to support non-combustion vehicles. However, it is possible that all of Berkeley's fossil fuel dealerships could go out of business sooner than 2045, due to a transition away from combustion fuel usage, in which case this policy would have no significant effect.

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission's Report.

CONTACT PERSON

Ben Gould, Chair, Community Environmental Advisory Commission, 510-725-9176

Attachments:
1: Ordinance

ORDINANCE NO. -N.S.

AMENDING BERKELEY MUNICIPAL CODE TITLE 9 TO PROHIBIT THE SALE AND TRANSPORTATION OF FOSSIL FUELS.

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

Section 1. That the Berkeley Municipal Code Chapter 9.98 is added to read as follows:

Chapter 9.98
SALE OF TRANSPORTATION FOSSIL FUELS

Sections:

9.98.010 Findings

A. Carbon-based transportation fuels, such as gasoline, diesel, and others, are known to be harmful and hazardous chemicals, contributing to cancer, climate change, and known to pollute our local air, water, and soil.

B. Carbon-based transportation fuels pose major fire and explosive hazards, with risk to public health and safety.

C. The transport, storage, and sale of transportation fuels exacerbates all risks associated with these chemicals.

9.98.020 Purpose

The purpose of this chapter is to promote the health and safety of Berkeley residents and visitors, and to address environmental impacts and public health and safety impacts from transportation fuels.

9.98.030 Definitions

For the purposes of this chapter, the following words and phrases shall have the meaning respectively ascribed to them by this section:

A. “Transportation fuel” shall mean any gasoline, diesel, compressed natural gas, or other carbon-based fuel which is intended to provide power or propulsion to any land motor vehicle through its combustion or oxidation.

9.98.040 Prohibition

Beginning January 1st, 2045, it shall be unlawful to sell, trade, or distribute any transportation fuel by any means anywhere within the City of Berkeley.

9.98.050 Severability

If any section, subsection, sentence, clause or phrase of this chapter is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portions of this chapter. In addition, the City Council hereby declares that it would have passed the ordinance codified in this chapter, and each and every section, subsection, sentence, clause or phrase not declared invalid or unconstitutional without regard to whether any portion of this chapter would be subsequently declared invalid or unconstitutional.

11

Draft outcome objectives for the Planning of long-term improvements to Berkeley's streets

Outcome one: **Berkeley's overall street condition shall be at a level that supports safe and efficient use by all users.**

- Multi-modal transportation
- Bike routes
- Pedestrians
- Vision zero
- Implement Complete Streets

Outcome two: **Our streets shall be climate smart and contribute to multiple benefits.**

- Contribute to meeting our climate action goals. Move away from fossil fuel based paving material when doing full street reconstruction.
- Provide multiple benefits
- Go beyond Green Infrastructure with **blue-green infrastructure** providing the "ingredients" for solving urban and climatic challenges by building with nature.

Outcome three: **Our streets shall be durable and incorporate sustainable advanced technologies.**

- Incorporate long lasting materials, such as permeable pavers, concrete and other technologies
- Use life cycle cost analysis that matches the funding time horizon

Outcome four: **Planning for our street improvements shall be integrated with other needs in the public right of way.**

- Coordinate with utility undergrounding, water lines, sewer lines, gas lines, etc.
- Plan for long-term maintenance using an asset management system
- Build flexible infrastructure that can adapt to climate, demographic and technical change

Annual Allocation of Vehicle Registration, State Transportation Tax and SB1 Revenues to Streets

Auto In-lieu (Measure F Vehicle Registration)		State Transportation Tax		SB1	
Total	Average Annual Funding Allocated to Streets (FY 20-24)	Total	Average Annual Funding Allocated to Streets (FY 20-24)	Total	Average Annual Funding Allocated to Streets (FY 20-24)
$12.5 million (FY 2019 actual)	$155,000	$12.9 million (FY 2020 adopted revenue)	$495,303	Included under state transportation tax	$1,780,000

Kate Harrison
Councilmember District 4

REVISED
AGENDA MATERIAL
for Supplemental Packet 2

Meeting Date: **January 21, 2020**

Item Number: **43b**

Item Description: **Companion Report: Public Works Commission Recommendation for the Five-Year Street Rehabilitation Plan**

Submitted by: **Councilmember Harrison**

Recommendation:

1. In order to improve bicyclist and mobility safety and to reduce greenhouse gas emissions, modify the five-year paving plan to utilize a portion of the $1,046,295 in FY 2021 discretionary funds to complete the Channing Way Shattuck to MLK (currently scheduled for 2024) segment in FY 2021:

    a. Channing Way Milvia St. to Shattuck Ave. – cost: $267,640 (PCI of 34)
    b. Channing Way MLK to Milvia St. – cost: $462,920 (PCI of 15)

    In addition, delay the Roosevelt Ave. segment (PCI of 52) 2024, freeing up $172,480 in FY 2021.

    The proposed modification of the five-year plan would utilize **$558,080** (53%) of FY 2021 discretionary funds to complete the Channing segment project in 2021.

2. Refer to the Facilities, Infrastructure, Transportation, Environment, & Sustainability Committee to work with the Public Works Department and

the Commission to explore potential bonding and funding opportunities for improving the PCI of residential streets.

Rationale

1. **Channing Way**

   - The Council recently passed Councilmember Robinson's referral prioritizing paving streets with bicycle routes.

   - Prioritizing bicycle and mobility infrastructure is in line with the City's Vision Zero and Climate Action Plan goals.

   - This route has been identified by bicyclists as a key bicycle boulevard connecting West Berkeley to the Downtown and the Southside. This route also intersects with the key crosstown Milvia bikeway project and provides citywide benefits.

   - Transportation remains the largest sector of GHG emissions and we should be doing everything possible to facilitate people using low-carbon methods of transportation.

   - This route intersects Berkeley High School and leads to the UC Campus and therefore would be utilized by students, who are less likely to drive.

2. **Expanding Funding Sources to Improve Residential PCI**

   - A recent MTC report warns that Berkeley's overall paving condition is "At Risk," meaning on the cusp of falling into "Failing" category.

   - The five-year paving plan is the result of historic deferred maintenance and an underfunded, imperfect and complex balance between arterial, collector and residential streets distributed across Council districts.

   - Residential streets across the entire city are largely categorized as failing.

   - Even though Public Works has agreed to increase the emphasis on residential streets in the latest plan, there is currently not enough funding available to rehabilitate all of our residential streets.

   - Council should consider investing in paving beyond what is already allocated in the 5-year plan.

   - Other neighboring cities in the Bay Area, such as Richmond, El Cerrito, San Francisco et al. have "Excellent/Very Good" to "Fair/Good."

   - Council should consider the recommendation of the Mayor's Vision 2050 report that we explore additional funding opportunities by leveraging our

good credit rating and low interest rates to raise new funding for streets.

- For example, we can bond against various revenue sources to issue new bonds (e.g. Parking Meter revenue and other City Enterprise Funds). The Vision 2050 report estimated the city could carry ~$350 million in revenue bond debt from its funds. The report states that the City currently carries approximately $60 million.