AGENDA

BERKELEY CITY COUNCIL MEETING

Tuesday, March 22, 2022
6:00 PM

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI
DISTRICT 2 – TERRY TAPLIN
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – RIGEL ROBINSON
DISTRICT 8 – LORI DROSTE

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

Pursuant to Government Code Section 54953(e) and the state declared emergency, this meeting of the City Council will be conducted exclusively through teleconference and Zoom videoconference. The COVID-19 state of emergency continues to directly impact the ability of the members to meet safely in person and presents imminent risks to the health of attendees. Therefore, no physical meeting location will be available.

Live audio is available on KPFB Radio 89.3. Live captioned broadcasts of Council Meetings are available on Cable B-TV (Channel 33) and via internet accessible video stream at http://www.cityofberkeley.info/CalendarEventWebcastMain.aspx.

To access the meeting remotely: Join from a PC, Mac, iPad, iPhone, or Android device: Please use this URL https://us02web.zoom.us/j/85474741619. 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 by rolling over the bottom of the screen.

*To join by phone: Dial **1-669-900-9128 or 1-877-853-5257 (Toll Free)** and enter Meeting ID: **854 7474 1619.** If you wish to comment during the public comment portion of the agenda, Press *9 and wait to be recognized by the Chair.*

Please be mindful that the teleconference will be recorded as any Council meeting is recorded, and all other rules of procedure and decorum will apply for Council meetings conducted by teleconference or videoconference.

To submit a written communication for the City Council's consideration and inclusion in the public record, email council@cityofberkeley.info.

This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Mark Numainville, City Clerk, (510) 981-6900. The City Council may take action related to any subject listed on the Agenda. Meetings will adjourn at 11:00 p.m. - any items outstanding at that time will be carried over to a date/time to be specified.

Preliminary Matters

Roll Call:

Ceremonial Matters: *In addition to those items listed on the agenda, the Mayor may add additional ceremonial matters.*

1. Presentation by the Anti-Eviction Mapping Project
2. Presentation on Seismic Retrofits for Civic Center Buildings

City Manager Comments: *The City Manager may make announcements or provide information to the City Council in the form of an oral report. The Council will not take action on such items but may request the City Manager place a report on a future agenda for discussion.*

Public Comment on Non-Agenda Matters: *Persons will be selected to address matters not on the Council agenda. If five or fewer persons wish to speak, each person selected will be allotted two minutes each. If more than five persons wish to speak, up to ten persons will be selected to address matters not on the Council agenda and each person selected will be allotted one minute each. The remainder of the speakers wishing to address the Council on non-agenda items will be heard at the end of the agenda.*

Consent Calendar

The Council will first determine whether to move items on the agenda for "Action" or "Information" to the "Consent Calendar", or move "Consent Calendar" items to "Action." Three members of the City Council must agree to pull an item from the Consent Calendar for it to move to Action. Items that remain on the "Consent Calendar" are voted on in one motion as a group. "Information" items are not discussed or acted upon at the Council meeting unless they are moved to "Action" or "Consent".

No additional items can be moved onto the Consent Calendar once public comment has commenced. At any time during, or immediately after, public comment on Information and Consent items, any Councilmember may move any Information or Consent item to "Action." Following this, the Council will vote on the items remaining on the Consent Calendar in one motion.

For items moved to the Action Calendar from the Consent Calendar or Information Calendar, persons who spoke on the item during the Consent Calendar public comment period may speak again at the time the matter is taken up during the Action Calendar.

Public Comment on Consent Calendar and Information Items Only: *The Council will take public comment on any items that are either on the amended Consent Calendar or the Information Calendar. Speakers will be entitled to two minutes each to speak in opposition to or support of Consent Calendar and Information Items. A speaker may only speak once during the period for public comment on Consent Calendar and Information items.*

Additional information regarding public comment by City of Berkeley employees and interns: Employees and interns of the City of Berkeley, although not required, are encouraged to identify themselves as such, the department in which they work and state whether they are speaking as an individual or in their official capacity when addressing the Council in open session or workshops.

Consent Calendar

1. **Lease Agreement with NFS Unlimited, LLC for Skates-on-the-Bay**
   From: City Manager
   Recommendation: Adopt second reading of Ordinance No. 7,802-N.S. authorizing the City Manager to execute the attached ground lease with NFS Unlimited, LLC, the owner/lessee of Skates-on-the-Bay at the Berkeley Waterfront for a 10-year term with 2 additional options to extend for 5 years each, effective from May 1, 2022.
   First Reading Vote: All Ayes.
   Financial Implications: See report.
   Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700

2. **Resolution Making Required Findings Pursuant to the Government Code and Directing City Legislative Bodies to Continue to Meet Via Videoconference and Teleconference**
   From: City Manager
   Recommendation: Adopt a resolution making the required findings pursuant to Government Code Section 54953(e)(3) and determining that as a result of the continued threat to public health and safety posed by the spread of COVID-19, City legislative bodies shall continue to meet via videoconference and teleconference, initially ratified by the City Council on September 28, 2021, and subsequently reviewed and ratified on October 26, 2021, November 16, 2021, December 14, 2021, January 10, 2022, February 8, 2022, and March 8, 2022.
   Financial Implications: To be determined.
   Contact: Farimah Brown, City Attorney, (510) 981-6950

3. **Resolution Reviewing and Ratifying the Proclamation of Local Emergency Due to the Spread of a Severe Acute Respiratory Illness Caused by a Novel (New) Coronavirus (COVID-19)**
   From: City Manager
   Recommendation: Adopt a Resolution reviewing the need for continuing the local emergency due to the spread of a severe acute respiratory illness caused by a novel (new) coronavirus (COVID-19) and ratifying the Proclamation of Local Emergency issued by the Director of Emergency Services on March 3, 2020, initially ratified by the City Council on March 10, 2020, and subsequently reviewed and ratified by the Council on April 21, 2020, June 16, 2020, July 28, 2020, September 22, 2020, November 17, 2020, December 15, 2020, February 9, 2021, March 30, 2021, May 25, 2021, July 20, 2021, September 14, 2021, November 9, 2021, December 14, 2021, and February 8, 2022.
   Financial Implications: To be determined.
   Contact: Farimah Brown, City Attorney, (510) 981-6950

Consent Calendar

4. **Minutes for Approval**
From: City Manager
Recommendation: Approve the minutes for the Council meetings of February 8 (regular), February 15 (closed and special), February 18 (closed), February 22 (regular) and February 24 (closed).
Financial Implications: None
Contact: Mark Numainville, City Clerk, (510) 981-6900

5. **Amendment to the Berkeley Revolving Loan Fund Administrative Plan to allow management of the COVID-19 Resiliency Loan Program (RLP) by Working Solutions, a certified Community Development Financial Institution; Authorize a $60,000 contract with Working Solutions to provide technical assistance and small business support to Berkeley's RLP participants**
From: City Manager
Recommendation: Adopt two Resolutions:
1. Approving changes to the Administrative Plan of the Berkeley Revolving Loan Fund (RLF) to allow for third party administration of the COVID-19 Resiliency Loan Program (RLP).
2. Authorizing the City Manager to execute a sole source contract and any amendments with Working Solutions, a certified Community Development Financial Institution, not to exceed $60,000 of ARPA funds to provide additional small business support and technical assistance to Berkeley's RLP participants for the period beginning March 31, 2022 through the five-year term of the RLP loan repayments (anticipated ending date December 31, 2027).
Financial Implications: See report.
Contact: Eleanor Hollander, Economic Development, (510) 981-7530

6. **Formal Bid Solicitations and Request for Proposals Scheduled for Possible Issuance After Council Approval on March 22, 2022**
From: City Manager
Recommendation: Formal Bid Solicitations and Request for Proposals Scheduled for Possible Issuance After Council Approval on March 22, 2022
Financial Implications: $12,952,000
Contact: Henry Oyekanmi, Finance, (510) 981-7300

7. **Donation of Fire Apparatus and Equipment**
From: City Manager
Recommendation: Adopt a Resolution donating a surplus fire truck, Auto 910 and equipment, to the Livermore Pleasanton Department.
Financial Implications: See report.
Contact: Abe Roman, Fire, (510) 981-3473

Consent Calendar

8. **Contract: Pinnacle for Occupational Physicals**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to execute a contract and any amendments with Pinnacle Training Systems, LLC (Contractor) for occupational health and pre-employment medical examinations including cancer and cardiac screening for firefighters, paramedics, emergency medical technicians, police officers and other designated staff through March 22, 2026 in an amount not to exceed $325,000 per fiscal year with an option to extend for three additional two-year terms, for a total ten-year potential contract not to exceed $3,250,000.
Financial Implications: See report.
Contact: Abe Roman, Fire, (510) 981-3473

9. **Contract: Interior Motions for HHCS Public Health Division Furniture**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager or her designee to execute a contract, and any amendments or extensions, with Interior Motions for new furniture for the Public Health Division offices. The contract will be in an amount not to exceed $100,000 for the period January 1, 2022 through December 30, 2022.
Financial Implications: See report
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400

10. **Contract No. 32100178 Amendment: California Mental Health Services Authority Help@Hand Participation Agreement**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager or her designee to execute an Amendment to the Help@Hand Participation Agreement with the California Mental Health Services Authority (CalMHSA) (Contract No.32100178) to increase the amount of funding by $140,800 for a total amount not to exceed $541,715 through June 30, 2024, and any amendments.
Financial Implications: See report.
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400

11. **Revenue Contract: Alameda County Behavioral Health Care Services**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager or her designee to execute a revenue contract amendment with Alameda County Behavioral Health Care Services (ACBH) for the provision of mental health services, including Medi-Cal, Medicare, Educationally Related Mental Health Services (ERMHS), and Early Periodic Screening, Diagnosis and Treatment (EPSDT) billing and reimbursement, with an Effective Date of July 1, 2021.
Financial Implications: See report.
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400

Consent Calendar

12. Increase Taxi Scrip Window Daily Cash Redemption Limit
From: City Manager
Recommendation: Adopt a Resolution authorizing Berkeley Rides for Seniors & the Disabled (BRSD) to increase the Taxi Scrip Window daily cash redemption limit from $800 to $1,000, one day per week.
Financial Implications: See report.
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400

13. Amending Berkeley Municipal Code (BMC) Chapter 12.70 Sections 12.70.031 and 12.70.050A.1 to align with State and Local Laws
From: City Manager
Recommendation: Staff recommends the City Council adopt the reading of an Ordinance amending Berkeley Municipal Code (BMC) Chapter 12.70 Smoking Pollution Control to incorporate two changes:
1) Amending BMC 12.70.030 to replace the outdated term “Dispensary” with “Cannabis Retailer” in order to align with the State’s Medicinal and Adult-Use of Cannabis Safety and Regulation Act (MAUCSRA); and
2) Revise BMC Chapter 12.70.050.A.1 to clarify that smoking tobacco is allowed at a tobacco retailer, and smoking cannabis is allowable at a Cannabis Retailer, subject to Council-approved BMC Sections 23.320.020.F.2, 12.21.020.U, V, and Y, and 12.22.040.F.2 allowing “Cannabis Lounges”.
Financial Implications: None
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400

14. Amendments to On-Call Architectural Services Contract No. 31900137 (ELS Architecture and Urban Design), Contract No. 31900155 (Siegel & Strain Architects), and Contract No. 31900131 (Noll & Tam Architects)
From: City Manager
Recommendation: Adopt Resolutions authorizing the City Manager to:
1. Execute an amendment to Contract No. 31900137 for ELS Architecture and Urban Design increasing the contract amount by $900,000; and
2. Execute amendments to Contract No. 31900155 for Siegel & Strain Architects, and Contract No. 31900131 for Noll & Tam Architects by increasing the contract amount by $900,000 each and duration by 9 months each, from June 30, 2022 to March 31, 2023.
Financial Implications: See report.
Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700

Consent Calendar

15. **Purchase Order: Nicholas K Corp dba the Ford Store San Leandro for Fifteen Ford Interceptor Utility Hybrid Vehicles**
From: City Manager
Recommendation: Adopt a Resolution satisfying requirements of City Charter Article XI Section 67.2 allowing the City Manager to participate in Alameda County bid procedures and authorize the City Manager to execute a purchase order for fifteen (15) Ford Interceptor Utility Hybrid vehicles with Nicholas K Corp dba the Ford Store San Leandro in an amount not to exceed $765,000.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

16. **Purchase Order: Nicholas K Corp dba the Ford Store San Leandro for Three Electric Vehicle Ford Pickup Trucks**
From: City Manager
Recommendation: Adopt a Resolution satisfying requirements of City Charter Article XI Section 67.2 allowing the City Manager to participate in Alameda County bid procedures and authorize the City Manager to execute a purchase order for three (3) Electric Vehicle Ford Pickup Trucks with Nicholas K Corp dba the Ford Store San Leandro in an amount not to exceed $135,000.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

17. **Contract No. 112725-1 Du-All Safety, LLC for Safety Consulting and Training Services**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to execute an amendment to Contract No. 112725-1 with Du-All Safety, LLC for continued safety training and consulting services up to $100,000 for a total contract amount not to exceed $400,000, and to extend the contract term through December 31, 2025.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

18. **Contract No. 32100122 Amendment: Silao General Engineering for Site Improvements Project at 125/127 University Avenue**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to amend Contract No. 32100122 with Silao General Engineering, Inc. to complete the parking lot site improvements at 125/127 University Avenue increasing the current contract amount of $192,946.60 by $85,000.00 for a total amount not-to-exceed of $277,947.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

Consent Calendar

19. Contract No. 31900106 Amendment: Coastland Civil Engineering for On-Call Civil Engineering Services for the Sanitary Sewer Program
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to amend Contract No. 31900106 with Coastland Civil Engineering (Coastland) for On-Call Civil Engineering Services for the Sanitary Sewer Program, increasing the contract by $500,000, for a total amount not to exceed $1,400,000, and extending the term of the contract to June 30, 2023.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

20. Contract No. 31900094 Amendment: West Yost for On-Call Civil Engineering Services for the Sanitary Sewer Program
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to amend Contract No. 31900094 with West Yost Associates (West Yost) for On-Call Civil Engineering Services for the Sanitary Sewer Program, increasing the contract by $500,000, for a total amount not to exceed $1,200,000, and extending the term of the contract to June 30, 2023.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

21. Contract No. 090342-1 Amendment: Waste Management of Alameda County for Landfill Disposal Services
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to amend the City's existing Contract No. 090342-1 with Waste Management, Inc. of Alameda County for Landfill Disposal Services through December 31, 2026 by increasing the Not to Exceed amount from $32,740,168 to $45,545,780.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

22. Fiscal Year 2023 Street Lighting Assessments – Initiating Proceedings
From: City Manager
Recommendation: Adopt two Resolutions describing proposed improvements to be used to determine the annual assessments levied for Berkeley Street Lighting Assessment District No. 1982-1 and Street Lighting Assessment District No. 2018, and order the preparation of Engineer's Reports.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300

Consent Calendar

23. Vacancies on Commission on Disability
From: Commission on Disability
Recommendation: Appoint new members to fill vacancies on the Commission on Disability from District 3, District 4, District 5, District 6, District 7, and Mayor Jesse Arreguin
Financial Implications: None
Contact: Dominika Bednarska, Commission Secretary, (510) 981-6300

Consent Calendar

24. Recommendation to Identify High Risk Safety Areas that are Exempt from State Imposed Housing Increases Due to Public Safety Considerations
From: Disaster and Fire Safety Commission
Recommendation: The Disaster and Fire Safety Commission (DFSC) recommends that the City Council define the location of those areas in Berkeley in which residents are at high risk due to public safety considerations and use this information to help guide the Housing Element process so that greater density and development in those areas is avoided to the extent reasonably possible. These areas include:
1. Fire Zones 2 and 3 with narrow (26 feet or less in width), winding streets, or those with "pinch-points' that do not allow emergency vehicle access and safe evacuation routes for residents in the event of a wildfire; and
2. Locations within the Alquist-Priolo (Hayward Fault) Earthquake Zone identified by the California Geological Survey; and
3. Locations within the Liquefaction or Landslide Zones identified by the California Geological Survey and areas associated with creeks, above and underground and subject to the impacts of Sea Level Rise. A. Establish a Priority: The DFSC requests that the identification process begin with items 1 and 2 listed above. State legislation mandating increased development in these areas is effective January 1, 2022, and the identification of the boundaries of areas where residents are at high risk in Berkeley should be completed prior to that date. Item 3 is also important, but as a practical matter, it may take longer to review. Therefore, completing identification may have to be done in steps over time. An additional consideration in giving priority at this time to areas affected by fire is that we are now in the "traditional" wildfire season with the clear statewide warning that today's wildfires are both more frequent and intense and are being fueled by the State's continued severe drought with no relief in the foreseeable future. B. Establish an Easy-to-Understand Map Format: The DFSC requests that the identification information presented be in an easy-to-understand map format that is available to the public and kept in an up-to-date format as the process progresses. This format should; within technical capability, clearly identify streets that are boundaries to the public safety areas. The California Geological Survey already maintains property-specific maps that address Items 1 and 2 above. The DFSC requests that the City produce similar maps for the other hazardous areas as they are identified. C. Need for Timely Action: The Council has recently taken action to indicate their intent to begin a process to complete the Sate required new Housing Element for the City's General Plan. Establishing high-risk public safety areas is a foundational tool in the work that needs to be done to complete a new Housing Element. D. Provides an Opportunity to Inform the Public: Defining high-risk public safety zones not only informs residents about the nature of the risks but encourages individuals and groups to be part of the effort to reduce those risks.
Financial Implications: See report.
Contact: Keith May, Commission Secretary, (510) 981-3473

Consent Calendar

25. **Letter of Support for Budget Referral: South Sailing Basin Dredging**
    From: Parks and Waterfront Commission
    Recommendation: Send the attached Letter of Support for Budget Referral: South Sailing Basin Dredging to be added to the scope of the project for the study of dredging the main channel.
    Financial Implications: See report.
    Contact: Roger Miller, Commission Secretary, (510) 981-6700

26. **Letter of Support for Infrastructure Improvement Projects in the Berkeley Waterfront from the Parks, Recreation, and Waterfront Commission to State Senate Budget Chair Skinner and Assembly Budget Chair Ting**
    From: Parks and Waterfront Commission
    Recommendation: Send the attached Letter of Support for Infrastructure Improvement Projects in the Berkeley Waterfront from the Parks, Recreation, and Waterfront Commission to State Senate Budget Chair Skinner and Assembly Budget Chair Ting.
    Financial Implications: See report.
    Contact: Roger Miller, Commission Secretary, (510) 981-6700

27. **Berkeley Police: Improvements Needed to Manage Overtime and Security Work for Outside Entities**
    From: Auditor
    Recommendation: We recommend City Council request that the City Manager report back by September 29, 2022, and every six months thereafter, regarding the status of our audit recommendations until reported fully implemented by the Berkeley Police Department (BPD). They have agreed to our findings and recommendations. Please see our report for their complete response.
    Financial Implications: None
    Contact: Jenny Wong, Auditor, (510) 981-6750

Council Consent Items

28. **Support for AB-2053 (Social Housing Act)**
    From: Councilmember Taplin (Author)
    Recommendation: Send a letter in support of Assembly Bill 2053 to the state legislature.
    Financial Implications: None
    Contact: Terry Taplin, Councilmember, District 2, (510) 981-7120

29. **Support for AB-2336**
    From: Councilmember Taplin (Author), Councilmember Wengraf (Co-Sponsor), Mayor Arreguin (Co-Sponsor), Councilmember Robinson (Co-Sponsor)
    Recommendation: Send a letter of support for Assembly Bill 2336: Speed Safety System Pilot Program.
    Financial Implications: None
    Contact: Terry Taplin, Councilmember, District 2, (510) 981-7120

Council Consent Items

30. **Support for AB-2713**
From: Councilmember Taplin (Author), Councilmember Bartlett (Co-Sponsor)
Recommendation: Send a letter of Support for Assembly Bill 2713: Rent caps
Financial Implications: None
Contact: Terry Taplin, Councilmember, District 2, (510) 981-7120

31. **Budget Referral: West Berkeley Transportation Plan**
From: Councilmember Taplin (Author)
Recommendation: That the City Council refer $300,000 to the FY23-24 budget process for the hiring of a consultant to conduct a study and draft a comprehensive plan for transportation in West Berkeley through 2050.
Financial Implications: $300,000
Contact: Terry Taplin, Councilmember, District 2, (510) 981-7120

Council Consent Items

32. **Budget Referral: Berkeley Reparations – Funding for a Consultant to Facilitate Community Process to Design and Implement a Local Reparations Plan**
From: Councilmember Bartlett (Author), Councilmember Hahn (Co-Sponsor), Councilmember Taplin (Co-Sponsor), Mayor Arreguin (Co-Sponsor)
Recommendation: Refer to the Fiscal Year 2022/2023 Budget Process, an allocation of $350,000 to fund a Consultant to develop policy recommendations for reparations in Berkeley. These recommendations will address the economic injury and intergenerational trauma experienced by Berkeley's descendants of slavery and the ongoing harm caused to all African Americans by systems that uphold the legacy of segregation. The Consultant will design a process to develop short, medium, and long-term recommendations for reparation policies in Berkeley designed to promote the creation of generational wealth and boost economic mobility, and opportunity in Berkeley's African American community. 1. Inform. The Consultant should hold a series of educational events, truth-telling symposiums, sessions, and community gatherings on Berkeley's history. The Consultant should engage a myriad of Berkeley stakeholders, including residents who have experienced harm with economists and historians to provide context. Subject matter experts will employ financial and historical data to illuminate the generational wealth gap, describe barriers to economic mobility, and detail the systemic racism against Berkeley's African American community. 2. Interact. The Consultant should aim to foster an interactive dialogue centered on the community's historical experiences and legacy of racism. These group settings should be between persons of diverse vantage points and opinions. The Consultant's facilitation of these emotive conversations should aspire to enable learning and deep listening, connection, and ultimately trust, healing, and the desire to repair the community. 3. Recommend. Draw from the community dialogues to issue short, medium, and long-term recommendations, for reparations policies. The policy recommendations should focus on creating significant, sustainable progress towards repairing the damage caused by public and private systemic racism; and mitigate racial disparities in wealth, education, employment, homeownership, health, criminal justice, and more. The recommendations should include a portfolio of policies aligned under the following framework: i. Reckoning ii. Acknowledgment iii. Accountability iv. Redress
Financial Implications: See report.
Contact: Ben Bartlett, Councilmember, District 3, (510) 981-7130

33. **Supporting Ranked Choice Voting -- Opposing AB 2808 (O'Donnell)**
From: Councilmember Hahn (Author), Mayor Arreguin (Author), Councilmember Robinson (Author)
Recommendation: Adopt a resolution opposing AB 2808 (O'Donnell), which would ban rank choice voting in California, including in those charter cities where the system is already in use. Send a letter to the bill author stating opposition. Send a copy of the Resolution to Assemblymember Buffy Wicks, State Senator Nancy Skinner, and Governor Gavin Newsom.
Financial Implications: None
Contact: Sophie Hahn, Councilmember, District 5, (510) 981-7150

Council Consent Items

34. **Support for AB 1755 (Levine)**
From: Councilmember Wengraf (Author), Councilmember Harrison (Co-Sponsor), Councilmember Hahn (Co-Sponsor)
Recommendation: Adopt a Resolution in Support of AB-1755: Homeowners Insurance: Home Hardening (Levine). AB-1755 will require, beginning in 2025, an insurance provider licensed in California to issue an insurance policy to a homeowner that has taken science-based actions to harden their property from wildfire risk. This legislation would also create the Wildfire Protection Grant Program under the Department of Insurance that would administer grants to residential property owners of up to $10,000 to help pay for costs associated with home hardening and wildfire mitigation improvements. Send copies of the Resolution to Assembly Member Levine, Assembly Member Wicks, Senator Skinner, Governor Newsom and Insurance Commissioner Lara.
Financial Implications: None
Contact: Susan Wengraf, Councilmember, District 6, (510) 981-7160

35. **Support for AB-1594 Firearms: Civil Suits**
From: Councilmember Wengraf (Author), Councilmember Taplin (Co-Sponsor), Councilmember Bartlett (Co-Sponsor), Councilmember Hahn (Co-Sponsor)
Recommendation: Adopt a Resolution in support of AB-1594 (Assembly Member Ting) which would allow gun manufacturers to be sued for creating a public nuisance if their failure to follow federal, state or local law caused injury or death or if the gun industry member engaged in unfair business practices.
Send the Resolution to Assembly Members Ting, Gipson, Ward and Wicks along with Senator Skinner and Governor Newsom.
Financial Implications: None
Contact: Susan Wengraf, Councilmember, District 6, (510) 981-7160

36. **2022 Virtual Holocaust Remembrance Day Program: Relinquishment of Council Office Budget Funds from General Funds and Grant of Such Funds**
From: Councilmember Wengraf (Author), Councilmember Hahn (Author), Councilmember Bartlett (Co-Sponsor), Mayor Arreguin (Co-Sponsor)
Recommendation: Adopt a Resolution approving the expenditure of an amount not to exceed $500 per Councilmember, including $500 each from Councilmember Wengraf and Councilmember Hahn to support the City's Annual Holocaust Remembrance Day program with funds relinquished to the City's general fund. The relinquishment of funds from Councilmember Wengraf's, Hahn's, Bartlett's, and Mayor Arreguin's discretionary Council Office Budgets and all other Councilmembers who would like to contribute, allows the City of Berkeley to invite the community to the City's 19th Annual Holocaust Remembrance Day virtual program, created by the community with City Council support. In light of the vulnerability of many of the attendees, and the continuing threat of the COVID pandemic, this year's program will be held virtually on April 28, 2022.
Financial Implications: See report.
Contact: Susan Wengraf, Councilmember, District 6, (510) 981-7160

Council Consent Items

37. Budget Referral: Telegraph-Channing Garage Elevator Repairs
From: Councilmember Robinson (Author), Councilmember Hahn (Co-Sponsor)
Recommendation: Refer $3.6M to the June 2022 budget process for urgent repairs to the Telegraph-Channing Garage elevators. Additionally, refer to the City Manager to pursue all available funding opportunities for this project, including American Rescue Plan Act funds.
Financial Implications: See report.
Contact: Rigel Robinson, Councilmember, District 7, (510) 981-7170

Action Calendar

The public may comment on each item listed on the agenda for action as the item is taken up. For items moved to the Action Calendar from the Consent Calendar or Information Calendar, persons who spoke on the item during the Consent Calendar public comment period may speak again at the time the matter is taken up during the Action Calendar.

The Presiding Officer will request that persons wishing to speak use the "raise hand" function to determine the number of persons interested in speaking at that time. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Presiding Officer 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. The Presiding Officer may, with the consent of persons representing both sides of an issue, allocate a block of time to each side to present their issue.

Action items may be reordered at the discretion of the Chair with the consent of Council.

Action Calendar – New Business

38. Berkeley Economic Dashboards Update
From: City Manager
Contact: Eleanor Hollander, Economic Development, (510) 981-7530

Action Calendar – Public Hearings

Staff shall introduce the public hearing item and present their comments. This is followed by five-minute presentations each by the appellant and applicant. The Presiding Officer will request that persons wishing to speak use the "raise hand" function to be recognized and to determine the number of persons interested in speaking at that time.

Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Presiding Officer may limit the public comment for all speakers to one minute per speaker. The Presiding Officer may with the consent of persons representing both sides of an issue allocate a block of time to each side to present their issue.

Each member of the City Council shall verbally disclose all ex parte contacts concerning the subject of the hearing. Councilmembers shall also submit a report of such contacts in writing prior to the commencement of the hearing. Written reports shall be available for public review in the office of the City Clerk.

Action Calendar – Public Hearings

39. Referral Response: Research and Development (R&D) Definition
From: City Manager
Recommendation: Conduct a public hearing and, upon conclusion, adopt the first reading of a Zoning Ordinance amendment that modifies the land use definition of Research and Development (R&D) [Berkeley Municipal Code (BMC) Division 5: Glossary – Defined Terms 23.502.020].
Financial Implications: None
Contact: Jordan Klein, Planning and Development, (510) 981-7400

Action Calendar – Old Business

40. Resolution Accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code
(Continued from January 25, 2022. Item contains supplemental materials.)
From: City Manager
Recommendation: Adopt a Resolution Accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code.
Financial Implications: None
Contact: Jennifer Louis, Police, (510) 981-5900, LaTanya Bellow, City Manager's Office, (510) 981-7000

Information Reports

41. FY 2022 First Quarter Investment Report: Ended September 30, 2021
From: City Manager
Contact: Henry Oyekanmi, Finance, (510) 981-7300

Public Comment – Items Not Listed on the Agenda

Adjournment

NOTICE CONCERNING YOUR LEGAL RIGHTS*: If you object to a decision by the City Council to approve or deny a use permit or variance for a project the following requirements and restrictions apply: 1) No lawsuit challenging a City decision to deny (Code Civ. Proc. §1094.6(b)) or approve (Gov. Code 65009(c)(5)) a use permit or variance may be filed more than 90 days after the date the Notice of Decision of the action of the City Council is mailed. Any lawsuit not filed within that 90-day period will be barred. 2) In any lawsuit that may be filed against a City Council decision to approve or deny a use permit or variance, the issues and evidence will be limited to those raised by you or someone else, orally or in writing, at a public hearing or prior to the close of the last public hearing on the project.*

Live captioned broadcasts of Council Meetings are available on Cable B-TV (Channel 33),
via internet accessible video stream at http://www.cityofberkeley.info/CalendarEventWebcastMain.aspx
and KPFB Radio 89.3.
Archived indexed video streams are available at http://www.cityofberkeley.info/citycouncil.
Channel 33 rebroadcasts the following Wednesday at 9:00 a.m. and Sunday at 9:00 a.m.

Communications to the City Council are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to the City Council, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service to the City Clerk Department at 2180 Milvia Street. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the City Clerk Department for further information.

Any writings or documents provided to a majority of the City Council regarding any item on this agenda will be posted on the City's website at http://www.cityofberkeley.info.

Agendas and agenda reports may be accessed via the Internet at
http://www.cityofberkeley.info/citycouncil

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.

Captioning services are provided at the meeting, on B-TV, and on the Internet.
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I hereby certify that the agenda for this meeting of the Berkeley City Council was posted at the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way, as well as on the City's website, on March 10, 2022.

Mark Numainville, City Clerk

Communications

Council rules limit action on Communications to referral to the City Manager and/or Boards and Commissions for investigation and/or recommendations. All communications submitted to Council are public record. Copies of individual communications are available for viewing through Records Online.

Item #27: Berkeley Police: Improvements Needed to Manage Overtime and Security Work for Outside Entities

1. Aimee Baldwin

Item #40: Resolution Accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code

2. Jennifer Head

Street Paving Adding $9,000,000 to General Fund

3. Alex Benn
4. David Lerman
~~~~~~

UC Berkeley – Student Housing
5. Rachel Doughty
6. Margot Smith
7. Mary Zernicke

Hopkins Corridor
8. Susan Schwartz

Support the Plastic Bag Ordinance
9. Sofia Pavlova
10. Peter DiMaria

Keeping Berkeley Residents Housed
11. Drew Finke
12. Negeene Mosaed
13. Elana Auerbach
14. cooperlb@

Grocery vs Market Berkeley Redlines
15. Aimee Baldwin

Amending His Brown Act Complaint
16. Thomas Lord

Tenants Opportunity to Purchase Act (TOPA)
17. Kiran Shenoy, on behalf of the Bridge Association of Realtors
18. Erin Markham
19. Eduardo Madrigal

Covid Dashboard
20. Thomas Lord (2)
21. Councilmember Harrison

Berkeley Drop-In Center and the Berkeley Police Department
22. Boona Cheema
23. Diana Bohn
24. Katrina Killian
25. Interim Police Chief Louis

Community Policing: Flex Team for Problem-Oriented Policing
26. Josh Buswell-Charkow
27. Minda Berbeco
28. Jane Ellis
29. Jennifer Head
30. John Caner, on behalf of the Downtown Berkeley Association

Legal Protection for My Daughter Who Was Abused
31. Mandisa Leacheman

Ongoing Violations of ADA and IDEA
32. Gail Burke

Emergency Greenhouse Gas (GHA) Limits Ordinance
33. Nilang Gor, on behalf of Sierra Club SF Bay Sustainable Food & Agriculture Committee

Parking Garage at 2215 4th Street
34. Jack Litewka (3)
35. Anne Burns

Masks – Covid - Vaccinations
36. Val Cipollone
37. David Freeling
38. George Torgun

BART Redistricting 2022
39. April Quintanilla

East Bay Community Energy Finance, Administration, Procurement
40. East Bay Community Energy

Supplemental Communications and Reports
Items received by the deadlines for submission will be compiled and distributed as follows. If no items are received by the deadline, no supplemental packet will be compiled for said deadline.

- **Supplemental Communications and Reports 1**
  Available by 5:00 p.m. five days prior to the meeting.

- **Supplemental Communications and Reports 2**
  Available by 5:00 p.m. the day before the meeting.

- **Supplemental Communications and Reports 3**
  Available by 5:00 p.m. two days following the meeting.

ORDINANCE NO. 7,802–N.S.

LEASE AGREEMENT WITH NFS UNLIMITED, LLC FOR SKATES-ON-THE-BAY

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

Section 1. The City Manager is hereby authorized to execute a ten-year ground lease agreement and any amendments with NFS Unlimited, LLC for the Skates-on-the-Bay restaurant and premises at the Berkeley Waterfront. Such lease shall be on substantially the terms set forth in Exhibit A.

Section 2. The base rent will be $24,000/month, and will add a percentage rent of 3.5% of gross revenue above $1.5 million. In exchange for capital improvements, including to the roof and adjacent parking lot, the tenant will receive up to $100,000/year credit against annual rent during the initial term only. Base rent will escalate every 5 years by the lesser of 10% or 4 x the CPI increase over the prior 5 years. The lease includes 2 options to extend for an addition 5-year period each; if exercised, monthly rent will increase by the lesser of 10% or 4 x the CPI increase over the prior 5 years. Lease revenue will be deposited in the Marina Fund Budget Code 608-52-544-592-0000-000-000-461120. In addition, the new lease provides a delayed rent payment agreement for the tenant to repay $313,000 in deferred rent during the Covid pandemic. This will be paid in 10 equal annual payments of $31,300, and will not be eligible for any credits. No interest will be charged on this amount, consistent with the terms of the Covid-19 Emergency Response Ordinance, (Ordinance 7,743-N.S.)

Section 3. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of Council Chambers, 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.

At a regular meeting of the Council of the City of Berkeley held on March 8, 2022, this Ordinance was passed to print and ordered published by posting by the following vote:

Ayes: Bartlett, Droste, Hahn, Harrison, Kesarwani, Robinson, Taplin, Wengraf, and Arreguin.

Noes: None.

Absent: None.

GROUND LEASE

by and between

CITY OF BERKELEY
(“**Landlord**”)

and

NFS UNLIMITED, LLC
(“**Tenant**”)

Doing Business As (DBA) Skates on the Bay

Dated ____________________, 2022

TABLE OF CONTENTS
(Ground Lease)

Page

TABLE OF CONTENTS
(Ground Lease)

Page

TABLE OF CONTENTS
(Ground Lease)

Page

TABLE OF CONTENTS
(Ground Lease)

Page

TABLE OF CONTENTS
(Ground Lease)

Page

LIST OF EXHIBITS

BASIC LEASE INFORMATION
(Ground Lease)

1. **"Landlord"**	CITY OF BERKELEY, a public body corporate and politic Notice Address: City of Berkeley 2180 Milvia Street Berkeley, California 94704 Attention: City Manager Telephone: (510) 981-7000 Facsimile: (510) 981-7099 With a copy to: City of Berkeley 2180 Milvia Street Berkeley, California 94704 Attention: City Attorney Telephone: (510) 981-6991 Facsimile: (510) 981-6960
2. **"Tenant"**	NFS UNLIMITED, LLC, a Texas limited liability company Notice Address: NFS Unlimited, LLC 1510 West Loop South Houston, TX 77027 Attention: General Counsel Telephone: (713) 386-7002 Email: sscheinthal@ldry.com; vwilliams@ldry.com With a copy to: NFS Unlimited, LLC 1510 West Loop South Houston, TX 77027 Attention: Rodney Lerner, VP - Real Estate Telephone: (713) 386-7082 Email: rlerner@ldry.com
3. **"Effective Date"**	The later of (i) the date of last execution and (ii) the date that is 30 days after the Landlord's City Council's adoption of the Ordinance by which this Ground Lease is approved.
4. **"Premises" and "Facility"**	The **"Premises"** are the approximately 0.77 acre area of land and assocated vehicular drive aisle, walkways, western-facing parking stalls, garbage enclosure, and landscaping areas, commonly known and referred to as 100 Seawall Drive on the Berkeley Marina, Berkeley, California (being a portion of APN 60-2445-1), shown on the Site Map attached hereto as Exhibit A (**"Site Map"**). The **"Facility"** including without limitation the approximately 12,000

BASIC LEASE INFORMATION
(Ground Lease)

	rentable square feet free standing restaurant building located on the Premises, together with the building's support pilings, canopies and decking, as generally depicted in Exhibit A attached hereto, and all other improvements of any type constructed in accordance with the terms of this Ground Lease (together, the **"Facility"**).
5. "Non-Exclusive Use"	Tenant shall have non-exclusive use of the parking lot adjacent to the Premises, as depicted in Exhibit A. Tenant is responsible for improvements and maintenance of the parking lot, as described in Exhibit C and section 5.6.
6. **"Permitted Use"**	To maintain and operate on the Premises a first-class restaurant and cocktail lounge serving alcoholic beverages for the convenience and promotion of commerce, navigation and fishery in the Berkeley Marina and for no other purpose.
7. **"Commencement Date"**	The Effective Date.
8. **"Term"**	10 years commencing on the Commencement Date, plus the first partial month if the Commencement Date is other than the first day of the month (**"Initial Term"**). Tenant has 2 options to extend the Initial Term for an additional 5 years each (each, an **"Extension Term"**), subject to Section 2.3 (Tenant's Option(s) to Extend). **"Lease Year"** shall be the 12-month period commencing with the Commencement Date and each anniversary thereof. The **"Expiration Date"** is the date the Term expires.

BASIC LEASE INFORMATION
(Ground Lease)

9. **"Annual Rent"**	A. Generally. Payable as provided in Section 3 below, both: B. "**Base Rent"** in the amount of Twenty Four Thousand and no/100th Dollars ($24,000) per month (Two Hundred Eighty-eight Thousand and no/100th Dollars [$288,000.00] per year); and C. **"Percentage Rent"** equal to 3.5% of Gross Receipts (as defined in Section 3.4 below) in excess of $1,500,000 per Lease Year. Except as otherwise expressly provided in this Ground Lease, Percentage Rent shall be calculated (and paid) on a annual basis by May 1st of each year. D. "**Base Rent Adjustment"**. Base rent will increase every 5 years by the lesser of 10% or 4 x average CPI over the prior 5 years, as provided in section 3.3 below. E. "**Tenant Improvement Allowance"** up to $100,000 / year credit against annual rent during the Initial Term, with proof of receipts and Landlord prior written approval. Tenant Improvement expenses exceeding $100,000 may be rolled over to subsequent years in the Initial Term.
10. **"Gross Receipts"**	See Section 3.4.
11. **"Payment of Deferred Rent"**	As provided in Section 3.7, parties agree that $313,000 in deferred rent that was unpaid during the prior lease due to Covid will be repaid in 10 annual equal payments of $31,300.
12. **"Improvements"**	See Section 7.1 and Exhibit C.
13. **"Ground Lease Security"**	None

____

The Basic Lease Information set forth above and the Exhibits attached hereto are incorporated into and made a part of the following Ground Lease. In the event of any conflict between the Basic Lease Information and terms of the Ground Lease, the terms of the Ground Lease shall control.

LANDLORD'S INITIALS_______ **TENANT'S INITIALS_______**

GROUND LEASE

THIS GROUND LEASE ("**Ground Lease**") is made and entered into this ___ day of ______, 2022, to be effective on the **"Effective Date"** (as defined in the Basic Lease Information), by and between the Landlord and Tenant identified in the Basic Lease Information, who agree as follows:

ARTICLE 1.
PROPERTY AND BACKGROUND

1.1 Overview. Tenant has succeeded to the interests of Mannings, Inc. as "Lessee" under that certain Ground Lease between the Landlord as "Lessor" and Manning's Inc. as "Lessee," dated March 23, 1967, as subsequently amended, assigned and subleased (together, the **"Prior Ground Lease"**). The term under the Prior Ground Lease expired on December 31, 2018 and since that date Tenant has continued to lease and occupy the Premises on a holdover basis as provided in the Prior Ground Lease. The term of the Prior Ground Lease will terminate immediately prior to the Commencement Date, and the parties desire to enter into a new ground lease for the Premises on the terms set forth herein. From and after the Commencement Date, neither party shall have any further rights or obligations under the Prior Ground Lease other than those obligations which survive expiration or termination thereof.

A. Premises. Landlord owns the Premises (as defined in the Basic Lease Information).

B. Improvements. Pursuant to the Prior Ground Lease, Tenant or its predecessors constructed and owns the Facility (as defined in the Basic Lease Information). Tenant will continue to own the Facility during the term of this Ground Lease.

C. Occupancy. Tenant currently leases and occupies the entire Premises and Facility under the Prior Ground Lease. There are no subtenancies.

1.2 Ground Lease. For and in consideration of the payment of Rent and the performance of all the covenants and conditions of this Ground Lease, Landlord hereby leases and demises to Tenant, and Tenant hereby leases and hires from Landlord, the Premises, for the Term (as defined below) and upon the covenants and conditions set forth herein.

ARTICLE 2.
TERM

2.1 Term. The **"Initial Term"** of this Ground Lease shall be as set forth in the Basic Lease Information and shall commence as of the Commencement Date as set forth in the Basic Lease Information. The Initial Term together with any Extension Term(s), if any, are collectively referred to herein as the **"Term."**

2.2 Options to Extend. Provided that Tenant is not in default under the terms of this Lease beyond any applicable notice and cure period, Tenant shall have two (2) consecutive options to extend the Term of this Lease for an additional five (5) years each (each, a "**Renewal Option**"). To exercise a Renewal Option, Tenant must deliver written notice to Landlord no later than six (6) months before the then-scheduled expiration of the Term. Base Rent to be paid by Tenant during each Renewal Option Term shall be determined on the first day of such Renewal Option Term, and be adjusted annually based on the "Base Rent Adjustment" methodology described in 3.4 below.

ARTICLE 3.
RENT AND SECURITY

3.1 **Rent.** Rent shall be paid as set forth in this Article 3. This Ground Lease is a net lease, and Base Rent, Percentage Rent and Annual Rent (as provided in Basic Lease Information or in Section 2.3), and other payments due and payable hereunder to or on behalf of Landlord (collectively, **"Rent"**) shall be paid without notice or demand, and, except as specifically provided for in this Ground Lease, without offset, deduction or credit. Any monthly payment of Annual Rent for any period during the Term which is for less than one month shall be a pro rata portion of the then-monthly portion of Annual Rent, based upon the actual number of days in the month. All Rent shall be payable in lawful money of the United States to Landlord at the address stated herein or to such other persons or at such other places as Landlord may designate from time-to-time in writing.

3.2 **Annual Rent.** During the Initial Term and any Renewal Terms, and commencing on the Commencement Date (as defined in the Basic Lease Information), Tenant shall pay to Landlord Annual Rent.

3.3 **Payment of Annual Rent.**

A. Tenant shall pay Base Rent in the amount of Twenty Four Thousand and no/100th Dollars ($24,000) per month (Two Hundred Eighty-eight Thousand and no/100th Dollars [$288,000.00] per year) to Landlord in monthly installments in advance on or before the first day of each month.

B. Tenant shall pay Percentage Rent commencing with the second Lease Year on the basis of the Gross Receipts for the preceding Lease Year. Percentage Rent shall be equal to 3.5% of Gross Receipts in excess of $1,500,000 per Lease Year. Except as otherwise expressly provided in this Ground Lease, Percentage Rent shall be calculated (and paid) on an annual basis by May 1st of each year.

C. Tenant shall be entitled to receive a credit against Annual Rent for capital improvements listed in Exhibit C or approved in writing by the Landlord prior to commencement of the work. This Tenant Improvement Allowance may not exceed $100,000.00 per Lease Year for each Lease Year in the Initial Term of this Lease. This allowance is provided only for actual expenses, not prospective expenses. Tenant must provide to Landlord receipts to document approved expenses prior to claiming this credit. Expenses that exceed $100,000 in a particular year may be rolled over for credit in a subsequent year; provided, however, that Tenant shall receive a credit of no more than $100,000 in each year of the Initial Term, and no credits in any Extension Term. For example, if $300,000 is spent in Year 1, it may be claimed as a credit in Years 1, 2 and 3.

3.4 **Base Rent Adjustments**. Beginning on the first day of the sixth lease year ("**Adjustment Date**"), and every 5 years thereafter, the Base Rent shall increase by an annual amount determined by multiplying the annual base rent for the immediately preceding Lease Year by a factor equal to four (4) times the percentage increase, if any, in the Consumer Price Index (as defined herein) most recently published one month prior to the Adjustment Date over the Consumer Price Index published for the same month in the calendar year five (5) years preceding such Adjustment Date, but in no event shall any increase in Base Rent exceed ten percent (10%) of the Base Rent paid by Tenant for the Lease Year immediately preceding the Adjustment Date. Landlord shall promptly advise Tenant (but in no event less than 15 days after the Adjustment Date) of any increase in the Base Rent by reason of increases in the Consumer Price Index. The term "**Consumer Price Index**" as used in this Lease shall mean the Consumer Price Index, for all Urban Consumers, San Francisco-Oakland-Hayward, All Items, published by the Bureau of Labor Statistics of the United States Department of Labor.

3.6 Gross Receipts.

A. Definition. **"Gross Receipts"** includes the gross selling price of all food, alcohol, merchandise, goods and services sold, leased or rented in or from the Premises by Tenant and (if any) its subtenants, licensees and concessionaires; whether for cash or on credit; whether the order is received directly by on-site personnel, or is received by telephone, facsimile, email or other electronic or other ordering system at the Premises or at another location, as long as the order is either received at or filled at or from the Premises (orders delivered from the Premises, whether by Tenant employee, independent contractors or third parties, are deemed filled at the Premises); includes the gross sale prices from approved vending and other machines on or at the Premises; and regardless of whether bookkeeping, payment or collection of any account may take place away from the Premises. Any installment or credit sale shall be treated as a sale for the full cash price at time of sale.

B. Exclusions from Gross Receipts. Gross Receipts excludes the following:

1. The amount of deposits or prepayments until applied, and the selling price of gift certificates or vouchers until redeemed;

2. Interest, service or sales carrying charges or other charges, however denominated, paid by customers for extension of credit on sales where not included in the original sales price, but not charges or expenses in connection with credit cards or bank cards (or other similar devices or systems now or hereafter developed), whether paid by the customer or by Tenant;

3. The selling price of all items returned by customers and accepted for full credit and refunds to customers, or the amount of discounts and allowances made thereon, but only if the selling price of such items were previously included in Gross Receipts, and further provided that all such credits, discounts and allowances shall again be included in Gross Receipts when used or redeemed for merchandise or other items;

4. Tenant's service of food or liquor for promotion purposes or to employees for which Tenant makes no charge, but which is shown on Tenant's books of account as sales;

5. State, county or city sales, use, excise, gross receipts or similar taxes (including any such future taxes), but only if separately denominated from the selling price and collected from customers;

6. Sums and credits received in settling claims for loss of or damage to inventory, merchandise, fixtures, equipment or furniture located within the Premises;

7. Sales of fixtures, equipment or property which is not inventory or stock in trade;

8. Amounts uncollected due to bad checks or uncollectible credit accounts;

9. Tips and gratuities received by Tenant's employees;

10. Proceeds received from insurance policies, condemnation awards and the like;

11. The amount of sales for merchandise, beverages (alcoholic or non-alcoholic) and food where no money is collected for such sales (commonly known in the industry as "comps" or "complimentaries") (with sales for such purposes not to exceed four percent (4%) of Gross Receipts per Lease Year);

12. The amount of sales for merchandise, beverages (alcoholic and non-alcoholic) and food where no money is collected for such sales due to damage, spoilage, plunder or breakage (commonly known as "spills");

13. Fees and charges paid to credit card, bank processing and check verification companies (including without limitation, Visa, MasterCard, American Express and Telecheck);

14. Proceeds from the sale of Tenant's business in whole;

15. The amount of any discounts or credits on sales provided to customers pursuant to any promotion, loyalty or rewards programs offered by Tenant or its affiliates from time to time (e.g., *Landry's Select Club*);

16. Revenue from the sale of memberships in the *Landry's Select Club* or similar memberships;

17. Receipts from valet parking;

18. Fees charged to Tenant by third-party delivery companies and related third-party ordering "apps" (e.g., DoorDash, UberEats, GrubHub);

19. Sales where and solely to the extent that, the proceeds are donated to charitable or non-profit organizations provided that such amounts do not exceed three percent (3%) of Gross Receipts in any Lease Year; and

20. A surcharge customarily charged to customers in Berkeley, CA by restaurant operators used to reimburse operators for costs and other employee expenses including healthcare.

C. Tenant shall, within 15-days after the end of each month, furnish Landlord with an unaudited monthly statement of Gross Receipts for the preceding month. Such statements shall not be used to compute Percentage Rent under this Ground Lease.

D. Tenant shall, not later than the date set forth in Section 2.3.B above, deliver to Landlord a detailed and accurate accounting in accordance with generally accepted accounting principles (**"GAAP"**) consistently applied, certified as correct under penalty of perjury by an officer of Tenant, showing the basis of computation of Gross Receipts and Percentage Rent for the applicable Lease Year. The accounting shall be accompanied by copies of all Tenant monthly state sales tax returns for the applicable Lease Year.

E. Tenant, on behalf of itself and its affiliated entities, shall maintain complete electronic books and records of its operations at its corporate office headquarters in Houston, Texas. Tenant shall keep all electronic books and records containing any or all of the foregoing information, for not less than five years from the end of the Lease Year to which they pertain. Landlord and its agents and employees shall have the right at any time during regular business hours to examine and inspect all Tenant books and accounts relating to Gross Receipts, including without limitation sales tax reports, tax returns, and other reports to any governmental agency, for the purpose of verifying the accuracy of any statement of Gross Receipts provided under this Ground Lease. If requested in writing by Landlord, within ten (10) business days of such request, Tenant shall deliver (at Tenant's sole cost and expense) all electronically maintained books and records (i) in the form of fully readable (i.e., without requiring conversion to another type of file) electronic data files, or (ii) in the form of hard-copy (paper) printouts of the same.

F. <u>Audit Rights and Obligations</u>.

1. For purposes of verifying Percentage Rent payments due Landlord, Landlord shall have the right (not more than once in any five-Lease Year period) to require Tenant to submit full financial statements, prepared by a third-party certified public accountant, supporting Tenant's computations of Gross Receipts and Percentage Rent for the applicable Lease Year. Landlord shall notify Tenant at least 30 days prior to expiration of the applicable Lease Year of the requirement to submit full financial statements for such Lease Year. Tenant shall submit such full financial statements to Landlord within 45 days following the end of the applicable Lease Year.

2. Additionally, Landlord's representatives shall have the right (not more than once in any three-Lease Year period, unless a prior audit within that period revealed a discrepancy greater than the amount set forth below) to inspect Tenant's books, leases, subleases, contracts, and all other pertinent records, and independently audit the results of Tenant's operations, during reasonable business hours, on 10 business days' written notice to Tenant. Tenant shall make all such records available to Landlord's representatives for such audit. If as a result of an audit by an independent certified public accountant hired by Landlord, additional Percentage Rent is due Landlord for any Lease Year which exceeds by 4% the Percentage Rent actually paid for such Lease Year, the reasonable cost of such audit shall be paid by Tenant, and the additional amount of Percentage Rent owed Landlord shall bear interest from the date it should have been paid until paid at the lesser of 10% per annum compounded annually or the maximum rate permitted by Law ("**Interest Rate"**). If the discrepancy is less than 4%, Tenant need not pay any interest on the delinquent Percentage Rent as long as Tenant pays it within 30-days of issuance of the audit; otherwise, it will bear interest at the Interest Rate from the date it should have been paid until paid.

3.7 **<u>Late Charge</u>.** The late payment of any Base Rent will cause Landlord to incur additional costs, including administration and collection costs and processing and accounting expenses and increased debt service (**"Delinquency Costs"**). If Landlord has not received any installment of Base Rent within five days after its due date, Tenant shall pay a late charge of five percent of the delinquent amount immediately. The parties agree that this five percent late charge represents a reasonable estimate of the Delinquency Costs incurred by Landlord in the event of a late Base Rent payment. Landlord's acceptance of late Base Rent, partial Base Rent and late charges does not equate with a waiver of Tenant's default with respect to the overdue amount, or prevent Landlord from exercising any rights and remedies available under this Ground Lease and/or by operation of Law.

3.8 **Application of Payments.** All payments received by Landlord from Tenant shall be applied to the oldest obligation owed by Tenant to Landlord. No designation by Tenant, either in a separate writing, on a check or money order, or otherwise shall modify this Section or have any force or effect.

3.9 **Payment of Deferred Rent.** Tenant and Landlord agree that $313,000 in deferred rent that was unpaid during the prior lease due to the Covid-19 pandemic will be repaid in 10 annual equal payments of $31,300 each. Payments will be due on May 1st of each lease year, starting on May 1st, 2022. These deferred rent payments are not included in "annual rent" as defined above, and no improvements may be credited against this amount due. No interest will be charged on the payment of deferred rent.

TAXES AND ASSESSMENTS

4.1 **Personal Property Taxes.** Tenant shall pay before delinquency all taxes, assessments, license fees and other charges (**"Taxes"**) levied and assessed against Tenant's personal property installed or located in or on the Facility or the Premises which become payable during the Term. On demand by Landlord, Tenant shall furnish Landlord with satisfactory evidence of these payments. Notwithstanding the foregoing, Tenant shall have the right to contest the imposition or collection of any such Taxes which Tenant reasonably believes was improperly assessed or calculated.

4.2 **Statement Regarding Possessory Interest Tax.** This Ground Lease creates a possessory property interest in Tenant. Tenant acknowledges and agrees that Tenant's leasehold and/or other real property interests may be subject to property taxation, and Tenant or the party in whom the possessory property interest is vested may be subject to the payment of property taxes levied on the interest. Such taxes are referred to herein as **"Possessory Interest Taxes,"** and shall be paid by Tenant as part of Real Property Taxes as provided in Section 4.3 below.

4.3 **Real Property Taxes.** Tenant shall pay all real property taxes and general and special taxes including Possessory Interest Taxes (collectively, **"Real Property Taxes"**), levied and assessed against the Premises or Facility or any portion thereof. Tenant shall, semiannually, pay the Real Property Taxes not later than the Taxing Authority's (as defined below) delinquency date. If, at any time during the Term, any authority having the power to tax, including any federal, state or county government or any political subdivision thereof (collectively, **"Taxing Authority"**), shall alter the methods and/or standards of taxation and assessment against the legal or equitable interests of Landlord in the Premises or Facility or any other improvements located or constructed thereon, in whole or in part, so as to impose a monetary obligation on Landlord in lieu of or in addition to the taxes and assessments in existence as of the date of this Ground Lease, such taxes or assessments based thereon, including: (a) any tax, assessment, excise, surcharge, fee, levy, penalty, bond or similar imposition (collectively, **"Impositions"**), on Landlord's right to rental or other income from the Premises or Facility or as against Landlord's leasing of the Premises, (b) any Impositions in substitution or in lieu, partially or totally, of any Impositions assessed upon real property prior to any such alteration, (c) any Impositions allocable to or measured by the area of the Facility and/or Premises or the rental payable hereunder, including any Impositions levied by any Taxing Authority with respect to the receipt of such rental or with respect to the possession, leasing, operation, management, maintenance, alteration, repair, use or occupancy by Tenant or any subtenant of the Premises or Facility or any portion thereof, (d) any Impositions upon this lease transaction or any document to which Tenant is a party which creates or transfers any interest or estate in or to the Facility and/or Premises or any portion thereof, or (e) any special, unforeseen or extraordinary Impositions which, although not specifically described above, can fairly be characterized as a real property tax or a substitute for real property tax, shall be considered as Real Property Taxes for the purposes of this Ground Lease. Real Property Taxes shall exclude, however, all general income taxes, gift taxes, inheritance taxes and estate taxes, if any, owed by Landlord.

4.4 **Assessments**. Tenant also shall be responsible for and shall pay prior to delinquency all assessments imposed against the Premises or Facility by Landlord. Tenant acknowledges that Landlord has established certain assessment districts within the City of Berkeley and that all properties within the assessment districts are subject to annual assessments. Landlord reserves the right to create additional districts and to terminate any such district(s). Landlord shall provide Tenant with written notice of each such assessment not later than sixty (60) days before such assessment is due and payable.

4.5 **Tenant's Tax Liability Prorated.** Tenant's liability to pay Real Property Taxes and assessments shall be prorated on the basis of a 365-day year to account for any fractional portion of a fiscal tax year included in the Term at its inception and expiration or earlier termination in accordance with this Ground Lease.

4.6 **Real Property Tax Contest.** Without Landlord's prior written consent, Tenant shall not seek a reduction in the assessed valuation of the Premises or Facility, or contest any Real Property Taxes that are to be paid by Tenant. Landlord's consent may be given or withheld in Landlord's sole discretion. If Landlord consents and Tenant seeks a reduction or contests the Real Property Taxes, Tenant shall remain obligated to pay all Real Property Taxes prior to delinquency, and shall at all times protect Landlord from foreclosure of any lien. Landlord shall not be required to join in any proceeding or contest brought by Tenant.

ARTICLE 5.
USE, CHARACTER, OPERATION AND MAINTENANCE COVENANTS

5.1 **General.** Tenant covenants and agrees on behalf of itself and its successors and assigns that Tenant shall continuously use and operate the Premises and Facility for the Permitted Use and for no other purpose.

5.2 **Use Obligations.** Tenant shall, during such hours and on all such days as comparable restaurants are customarily open for business, continuously use and operate the Facility and Premises solely as a first class restaurant, and at all times will carry a full and complete stock of food and beverages offered for sale at competitive prices and maintain adequate personnel for the efficient service of customers, and for no other purpose. In connection with Tenant's use and operation of the Facility, Tenant shall comply with all of the following:

A. Tenant shall employ its best judgment, efforts and abilities to operate the business in a manner calculated to produce the maximum profitable volume of sales, rents and transactions obtainable and to enhance the reputation and attractiveness of the Berkeley Marina.

B. Except for emergencies or holidays on which most comparable restaurants the City of Berkeley are also closed, Tenant shall be open for full business not less than six days per week, Tuesday and Wednesday between the hours of 3 pm and 8:30 pm, Thursday between the hours of 12 noon and 8:30 pm, Friday between the hours of 12 noon and 9 pm, Saturday between the hours of 11:30 am and 9 pm, and Sunday between the hours of 11:30 am and 8:30 pm. Tenant may close on nationally recognized holidays in its sole discretion.

C. Tenant shall not do or permit to be done anything which in any way unreasonably interferes with the normal operation and use of any portion of the Berkeley Waterfront (as defined in Section 5.9) or the means of ingress and egress thereto (**"Substantial Interference"**). Tenant shall use every effort to eliminate Substantial Interference, including taking prompt legal action if appropriate. If Tenant fails to bring an immediate halt to any Substantial Interference, Landlord shall have the right (i) to designate the required action for Tenant to take, or (ii) to commence itself any legal action to eliminate the Substantial Interference, in either case at Tenant's sole cost and expense. Any agreement entered into by Tenant with regard to use of the Premises or Facility shall contain a provision reserving to Tenant all of the necessary rights and remedies to permit Tenant to comply with its obligations under this subsection and authorizing Landlord to enforce it if Tenant fails to do so.

5.3 **General Use Prohibitions.** Tenant covenants and agrees that in connection with the use and operation of the Premises and Facility, and any portion thereof (including without limitation parking areas and pedestrian and bicycle paths), Tenant will not:

A. Use or permit the use of any reasonably objectionable advertising medium including any loudspeakers, phonographs, public address systems, sound amplifiers, radio or broadcast within the Facility in such manner that any sounds reproduced, transmitted or produced shall be directed primarily beyond the interior of the Facility (provided, however, that nothing herein shall be deemed to prohibit the installation and use of a public address system for security purposes, or for the use of a reasonable level of music for outdoor dining areas or plaza areas), and will keep all mechanical apparatus free of unreasonable vibration and noise which may be transmitted beyond the interior of the Facility;

B. Permit undue accumulations of garbage, trash, rubbish or any other refuse;

C. Create, cause, maintain or permit any nuisance (as the same may be defined by applicable Law) in, on or about the Premises or Facility;

D. Commit or suffer to be committed any waste in, on or about the Premises or Facility;

E. Use or allow the Premises or Facility to be used for any unlawful purpose, or for any purpose which violates the terms of any recorded instrument affecting the Premises;

F. Cause or permit any insurance coverage on the Premises or Facility to become void or voidable or make it impossible to obtain any required insurance at commercially reasonable rates;

G. Intentionally cause or knowingly permit any material structural damage to or deterioration of the Premises or Facility or to any adjacent public or private property or improvements;

H. Permit any auction, fire, bankruptcy, distress, clearance, or going-out-of-business sale to be conducted thereon, or the posting of any sign or advertisement regarding any such activity; or

I. Violate any Law, ordinance or regulation applicable to the Premises or Facility.

5.4 **Non-Discrimination.** Tenant covenants and agrees that there shall be no discrimination against or segregation of any person or group of persons on account of race, color, creed, religion, sex, marital status, sexual orientation, source of income, age, physical or mental handicap, medical condition, national origin or ancestry in the sublease, transfer, use, occupancy, tenure or enjoyment of the Premises, the Facility or any portion thereof, nor shall Tenant, or any person claiming under or through Tenant, establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, sublessees, subtenants, vendees, users or customers in the Premises, the Facility, or any portion thereof. Tenant shall refrain from restricting the use, occupancy, rental or sublease of the Premises, the Facility, or any portion thereof on account of race, color, creed, religion, sex, marital status, sexual orientation, source of income, age, physical or mental handicap, medical condition, national origin or ancestry of any person. All subleases and contracts made relative to the Premises, the Facility, or any portion thereof, shall contain or be subject to substantially the following nondiscrimination clause:

A. **In subleases:** "The lessee herein covenants by and for himself or herself, his or her heirs, executors, administrators and assigns, and all persons claiming under or through him or her, that there shall be no discrimination against or segregation of any person or group of persons on account of race, color, creed, religion, sex, marital status, sexual orientation, source of income, age, physical or mental handicap, medical condition, national origin or ancestry in the leasing, subleasing, transferring, use, occupancy, tenure or enjoyment of the premises herein leased, nor shall the lessee himself or herself, or any person claiming under or through him or her, establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, sublessees, subtenants or vendees in the Premises, the Facility thereon, or any part thereof, herein leased."

B. **In contracts:** "There shall be no discrimination against or segregation of any person or group of persons on account of race, color, creed, religion, sex, marital status, sexual orientation, source of income, age, physical or mental handicap, medical condition, national origin or ancestry in the sale, lease, sublease, transfer, use, occupancy, tenure or enjoyment of the Premises, the Facility or any portion thereof, nor shall the transferee himself or herself, or any person claiming under or through him or her, establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, sublessees, subtenants or vendees in the Premises, the Facility thereon, or any part thereof."

5.5 **General Standards of Maintenance.** Tenant covenants and agrees that it shall maintain, or cause to be maintained, the Premises and the Facility as depicted in Exhibit A. This includes the restaurant building, trash enclosure, covered walkway, support pilings, paths of travel, landscape areas, a four-foot landscape strip around the southwest bend of the drive aisle measured from the back of the paving, and the westernmost parking stalls on the Premises adjacent to the pedestrian pathway and riprap, as shown in red in Exhibit A. Tenant covenants and agrees that not less frequently than once every ten years, Tenant shall slurry seal and restripe the loading areas and parking stalls on the Premises without cost to Landlord..All portions of the Premises, the Facility, and the Non-Exclusive Use Areas shall be maintained in first-class condition and repair, subject only to normal wear and tear. Tenant's compliance with the Maintenance Standards shall be judged by a comparative standard with the custom and practice generally applicable to comparable first-class restaurant facilities located within the San Francisco Bay Area. To accomplish such maintenance, Tenant shall either staff or contract with and hire licensed and qualified personnel to perform such maintenance work, including the provision of labor, equipment, materials, support facilities, and any and all other items necessary to comply with the requirements of this Section 5.5. All maintenance work shall conform to all applicable Federal and State Occupation Safety and Health Act standards and regulations for the performance of maintenance. All Maintenance work in the Non-Exclusive Use Areas shall be reviewed and approved by the Landlord in advance of completion. When parking lot or street closures are necessary, notice shall be given 7 days in advance. Landlord shall review and authorize work, if appropriate, 72-hours in advance of work commencement.

5.6 **Parking Lot**. Tenant understands they have non-exclusive use of the adjacent parking lot. After the tenant completes the parking lot reconstruction as provided in Exhibit C, Landlord and Tenant agree to share costs for parking lot pavement and striping maintenance, with the Tenant paying 40%, and the Landlord paying 60% of maintenance costs. Maintenance shall be mutually agreed upon prior to the commencement of work. . Tenant shall be fully responsible for repair and maintainance of the landscaping and lighting in the parking lot. Tenant understands they have non-exclusive use of the adjacent parking lot. Improvements to the parking lot shall be subject to Landlord's prior consent, review, and all other applicable requirements for Alterations as set forth in this Ground Lease. Improvements, maintenance, or repairs by Tenant to the parking lot shall not confer on Tenant any exclusive possession or ownership interest in such areas or assets. Tenant agrees that the parking lot shall remain open and accessible for use by the City and by the public at all times and for no charge. Tenant shall indemnify, defend and hold Landlord harmless from and against any and all demands, liabilities, claims, actions, damages, costs and expenses, including reasonable attorneys' fees, arising from allegations of a dangerous condition of public property associated with the parking lot, light fixtures, and/or landscaping maintained by Tenant.

5.7 **Governmental Requirements.** Tenant, at Tenant's expense, shall comply with all applicable Hazardous Materials Laws (as defined in Section 6.2 below), statutes, laws, codes, rules, orders, zoning, ordinances, directions, regulations, permits, or other requirements of federal, state, county, municipal, or other governmental authorities having jurisdiction, now in force or which may hereafter be in force, and with all requirements of any board or fire insurance underwriters or other similar bodies, now or hereafter adopted, enacted or made applicable, (individually **"Law"** and collectively **"Laws"**), which shall impose any duty upon Landlord or Tenant with respect to the use, occupancy, or alteration of the Premises or Facility or any portion thereof, including those requiring alterations or additions to be made to, or safety appliances or devices to be maintained or installed in, on or about the Premises or Facility or any portion thereof, and payment of any fees, charges or assessments arising out of or in any way related to the Premises or Facility or any portion thereof as a source of adverse environmental impacts or effects.

5.8 **Landlord Access Rights**. During the Term of this Ground Lease, Landlord and its designated representatives shall have the right, but not the obligation, to enter the Premises and Facility for the purpose of constructing, maintaining, replacing or adding underground utility facilities, including but not limited to water mains, sanitary sewer mains, storm drain mains, gas mains, telephone and electrical distribution facilities and fire alarm circuits. Landlord shall replace at its cost such surface improvements constructed by Tenant as may be disturbed by such construction, maintenance, replacement or addition to the condition of such improvements as of the time such disturbance occurred. If as a result of the foreoing work by Landlord or its designated representatives, Tenant is unable to operates its business in the Premises and Facility or any portion thereof as a result of being denied access to the Premises or Facility or any stoppage or interruption in any of the basic services to be provided by Landlord hereunder, Tenant is entitled to a pro rata abatement of Base Rent to the extent to such denial of access or stoppage or interruption interferes with the normal conduct of Tenant's business.

5.9 **Use of Berkeley Waterfront Property; Public Trust.**

For purposes of this Ground Lease, **"Berkeley Marina"** means the Premises and all other lands subject to the State Tidelands Grant (also referred to as **"State Grant Lands**"). "Berkeley Marina," includes the areas bound by the following:

- On the south by a westerly extension of Channing Way
- On the north by the north edge of Cesar Chavez Park, and a westerly extension thereof
- On the west by a north-south line through the end of the Municipal Fishing Pier
- On the east by the east edge of Cesar Chavez Park, and by the west edge of the Meadow area
- of Eastshore State Park and a southerly extension thereof.

A. Tenant agrees that except as otherwise provided in this Ground Lease, it is not a covenant or condition of this Ground Lease or of any other agreement with Tenant that Landlord undertake or cause to be undertaken any development or redevelopment of the Premises or the Berkeley Waterfront, and Landlord shall incur no liability whatsoever to Tenant for failure to undertake such development or redevelopment.

B. Landlord at all times shall have the right and privilege of making such changes in and to the Berkeley Waterfront (other than the Premises) from time to time which in its sole opinion are deemed to be desirable or appropriate, including the location and relocation of stairways, sidewalks, pathways, driveways, streets, entrances, exits, automobile parking spaces, the direction and flow of traffic, designation of prohibited areas, landscaped areas, landscaping, toilets, utilities and all other facilities; provided, however, that the foregoing is not intended to entitle Landlord to unreasonably effect changes that would materially and adversely affect access or lines of sight to the Premises, except temporarily during periods of construction. Any changes or additions by Landlord to the Berkeley Waterfront shall be performed in such a manner so as not to unreasonably interfere with Tenant's use of the Premises and shall not change in a material, adverse way the access to the Premises. If as a result of the foreoing work by Landlord or its designated representatives, Tenant is unable to operates its business in the Premises and Facility or any portion thereof as a result of being denied access to the Premises or Facility or any stoppage or interruption in any of the basic services to be provided by Landlord hereunder, Tenant is entitled to a pro rata abatement of Base Rent to the extent to such denial of access or stoppage or interruption interferes with the normal conduct of Tenant's business. Landlord shall have the right to establish, promulgate, and enforce such reasonable rules and regulations concerning the

Berkeley Waterfront, as it may deem necessary or advisable for the proper and efficient management, operation, maintenance and use thereof, and Tenant shall comply with the same.

C. Landlord at all times shall have the sole and exclusive management and control of the Berkeley Waterfront, including, without limitation, the right to lease, license or permit the use of space within the Berkeley Waterfront to persons for the sale of merchandise and/or services and the right to permit advertising displays, educational displays, displays of art, and promotional activities and entertainment.

D. Nothing contained herein shall be deemed to create any liability to Landlord for any personal injury, or any damage to motor vehicles, vessels, or other property of Tenant's principals, employees or others, unless caused by the gross negligence or willful misconduct of Landlord, its agents, servants or employees. Tenant is solely responsible for the security of the Premises and Facility, and for the safety of those using the Premises and Facility pursuant to this Ground Lease or any permits or licenses from the City. Tenant acknowledges that if Landlord provides security guards or police patrols for the Berkeley Waterfront or any portion thereof, Landlord does not represent, guarantee or assume responsibility that Tenant or any person or entity will be secure from losses caused by the illegal acts of third parties and does not assume responsibility for any such illegal acts. To induce Landlord to provide such security, if any, as Landlord in its sole discretion deems reasonable, appropriate and economically feasible, Tenant hereby waives any present or future claims Tenant may have against Landlord, whether known or unknown, for bodily injury or property damage arising from the performance of such security agents. Landlord shall not be obligated to provide any public liability or property damage insurance for the benefit of Tenant or any other person or entity, each such party being responsible for its own insurance.

5.10 Public Trust Tidelands Requirements.

A. Tenant acknowledges that the Premises are located on State tidelands held by the City of Berkeley in trust for the promotion of commerce, navigation, and fishery pursuant to Chapter 347 of the California Statutes of 1913, as amended (the **"Grant"**), subject to the conditions, restrictions, limitations, rights, powers, and duties reversionary rights and other rights created or reserved in the Grant. Tenant agrees that, notwithstanding anything in this Ground Lease to the contrary, Tenant shall use the Facility and Premises consistently with and in a manner that shall not result in a violation of the Grant or of provisions of the Berkeley City Charter, the California Constitution or other applicable Laws.

B. Landlord reserves to itself and the right to grant to others in the future nonexclusive utility easements over, under, through, across or on the Premises in locations that will not unreasonably interfere with Tenant's access to or use of the Premises or Facility. Landlord may make changes in any utility system serving the Facility or Premises as Landlord determines to be necessary or desirable in the course of any construction performed by or under the authorization of Landlord. Any interference to Tenant's use of the Facility or Premises shall be temporary, and all work on the Premises shall proceed expeditiously. Tenant shall be given reasonable notice before commencement of any work on the Premises. No such work shall invalidate or affect this Ground Lease or give Tenant any claim against Landlord for abatement of Rent or loss of business as a result thereof unless the work continues for more than three (3) days in which event Tenant shall be entitled to a pro rata abatement of Base Rent thereafter until comnpletion of such work. In the event the installation or maintenance of utility lines in such easements causes any damage to the Premises, or any portion thereof, or to the Facility, or other facilities located upon the Premises, including but not limited to pavement, curbs and sidewalks, the same shall be repaired by Landlord at its expense, if not so repaired by the party installing and maintaining the line. Landlord shall hold harmless and indemnify Tenant from all claims arising out of the grant or use of such utility easements, except to the extent they result from the negligence or willful misconduct of Tenant.

5.11 **Landlord's Status as a Landowner**. Tenant understands and agrees that Landlord is entering into this Ground Lease in its capacity as a landowner with a proprietary interest in the Premises and Facility and not as a regulatory agency of the City of Berkeley with certain police powers. Landlord's legal status shall in no way limit the obligation of Tenant to obtain any required approvals from Landlord's departments, boards or commissions that have jurisdiction over the Premises or Facility. By Landlord's entering into this Ground Lease, neither Landlord nor any of Landlord's Council, boards, commissions, agencies, departments, or affiliates obligates itself to any other governmental agent, board, commission or agency, or to Tenant, or to any other individual or entity, with regard to any discretionary action relating to development or operation of the Premises, Facility or Berkeley Waterfront. Discretionary action includes but is not limited to rezonings, variances, environmental clearances, or any other governmental agency approvals that may be required or desirable for the improvement, alteration, or operation of the Premises, Facility or Berkeley Waterfront. By entering into this Ground Lease, Landlord is in no way modifying or limiting the obligation of Tenant to cause the Premises and Facility to be used and occupied in accordance with all Laws.

5.12 **Regulatory Approvals Generally.** Tenant acknowledges and agrees that this Ground Lease does not guarantee that Landlord, in its regulatory capacity, will grant any particular request for a license, permit or other regulatory approval. Tenant understands that Landlord may grant or deny such request in its sole discretion, and may impose such terms and conditions as it deems consistent with that discretion.

5.13 **Covenants Regarding Improvements.** Tenant acknowledges and agrees that the Improvements will be maintained as follows:

A. Restaurant Building. Tenant has and shall continue to provide and install at the Restaurant all furniture, fixtures, and accessories necessary for the operation of a first-class restaurant and cocktail lounge. Tenant shall maintain in good condition all aspects of the building, including but not limited to building systems and structural elements.

B. Pilings. Tenant acknowledges that restaurant building is situated over the water, and is supported by pilings in the Bay. Tenant will maintain these pilings in good condition and provide periodic assessment and maintenance to assure they remain in good condition.

C. Landscaping. Such landscaping as may be reasonably required to provide an attractive development consistent with a first class restaurant. This includes landscaping inside the Premises, as well as in the Non-Exclusive Use Areas, as depicted in Exhibit A and described in section 5.6.

D. Non-Exclusive Use Areas. Non Exclusive Use Areas, including the adjacent parking lot, are depicted in Exhibit A. Tenant acknowledges that the adjacent parking lot is outside the leased premises, is shared with the Public, and Marina slip holders. Tenant acknowledges that Tenant has non-exclusive use of the parking lot and associated improvements, and that Tenant is responsible for maintenance of the landscaping and lighting in the Non-Exclusive Use Areas in good condition, as described in section 5.6.

ARTICLE 6.
CONDITION OF PROPERTY

6.1 **Landlord's Disclaimers and Tenant's Acknowledgements.** The Premises are being leased to Tenant in their current, existing, "AS-IS" condition. Except as expressly set forth in this Ground Lease, Landlord makes no representations or warranties as to any matters concerning the Premises or Facility, including without limitation: (i) matters relating to soils, subsoils, geology, the presence or absence of fill, groundwater, drainage, and flood zone designation; (ii) the existence, quality, nature, adequacy and physical condition of utilities serving the Premises or Facility; (iii) the development potential of the Premises or Facility, or their uses, habitability, merchantability, or fitness, suitability, value or adequacy for any particular purpose, (iv) the zoning or other legal status of the Premises or Facility or any other public or private restrictions on their use, (v) the adequacy, condition, repair status, or remaining useful life of the Facility's electrical, plumbing, HVAC, utility, mechanical or safety systems (**"Facility Systems"**), (vi) the adequacy, condition, repair status, or remaining useful life of the Facility's roof, walls, foundation, pilings, or other structural components, any other structures within the Premises, the Non-ExclusiveUse Areas parking lot, the drive aisle and associated parking stall, loading stalls, pathways, and landscaping, and drive aisle between Seawall Drive and the restaurant (vii) the compliance of the Premises or Facility with Hazardous Materials Laws, covenants, conditions or restrictions of any governmental or quasi-governmental entity or of any other person or entity, (viii) the presence or removal of Hazardous Materials (as defined in Section 6.2) or wastes on, under or about the Premises or Facility; or (ix) the compliance of the Premises or Facility under any other Laws, including without limitation the ADA and other Disability Laws. It is specifically understood and agreed that Landlord has no obligation and has made no promises to alter, remodel, improve, decorate or paint the Premises or Facility, repave the adjacent parking lot in the , Non-Exclusive Use Area, construct or install any improvements or Alterations (as defined in Section 7.2), repair or replace any Facility Systems, or otherwise alter or improve the Premises, Facility, or any portion thereof. By entering onto the Premises or Facility, Tenant represents and confirms that it is familiar with the existing legal and physical condition of the Premises and Facility, fully approves the same, and acknowledges that except as expressly provided in this Ground Lease Landlord has made no representation or warranty regarding the condition thereof. Tenant acknowledges and agrees that Tenant is leasing the Premises and accepting the Premises and Facility on the basis of Tenant's own investigation, and will act only upon information obtained by it directly from such investigation and from materials or records from independent third parties. Tenant assumes the risk that adverse physical and environmental conditions may not have been revealed by its own investigation, that below-ground improvements or facilities may still be located under the Premises, and that Hazardous Materials may subsequently be discovered upon, under or about the Premises. Tenant further acknowledges that neither Landlord, nor its officers, elected officials, agents, employees, or representatives (**"Landlord's Parties"**) have made any representation or warranty of any kind in connection with any matter relating to the condition, value, fitness, or suitability of the Premises, Facility or other improvements thereon, upon which Tenant has relied directly or indirectly for any purpose.

6.2 **Hazardous Materials**.

A. General Compliance. Tenant shall, at its sole cost and expense, comply with all laws, codes, rules, orders, ordinances, directives, regulations, permits, or other requirements of federal, state, county, municipal or governmental authorities having jurisdiction, now in force or which may hereafter be in force (collectively, **"Hazardous Materials Laws"**) concerning the management, use, generation, storage, transportation, presence, discharge or disposal of any and all pollutants, wastes, flammables, explosives, radioactive materials, hazardous or toxic materials, hazardous or toxic wastes, hazardous or toxic substances, carcinogenic materials or contaminants and all other materials governed, monitored, or regulated by any Federal, State or local law or regulation, including but not limited to the Comprehensive Environmental Response, Compensation and Liability Act, the Hazardous Substances Account Act, and/or the Resources Conservation and Recovery Act. **"Hazardous Materials"** include asbestos, asbestos-containing materials, hydrocarbons, polychlorinated biphenyl (**"PCB"**) or PCB-containing materials, petroleum, gasoline, petroleum products, crude oil or any fraction, product or by-product thereof. Except for routine substances which are used in the normal and customary operation of a restaurant for the Permitted Use, including such subtances technically constituting Hazardous Materials, neither Tenant nor Tenant's Parties shall use, handle, store, transport, treat, generate, release or dispose of any Hazardous Materials anywhere in, on, under or about the Premises or the Facility. Tenant shall cause any and all Hazardous Materials brought onto, used, generated, handled, treated, stored, released or discharged on or under the Premises or the Facility to be removed from the Premises and Facility and transported for disposal in accordance with applicable Hazardous Materials Laws. Landlord shall have the right to enter the Premises from time to time to conduct tests, inspections and surveys concerning Hazardous Materials and to monitor Tenant's compliance with its obligations concerning Hazardous Materials and Hazard Materials Laws. Tenant shall immediately notify Landlord in writing of: (i) any release or discharge of any Hazardous Material; (ii) any voluntary clean-up or removal action instituted or proposed by Tenant, (iii) any enforcement, clean-up, removal or other governmental or regulatory action instituted or threatened, or (iv) any claim made or threatened by any person against Landlord, Tenant, the Premises, or the Facility or any portion thereof relating to Hazardous Materials or Hazardous Materials Laws. Tenant shall also supply to Landlord as promptly as possible, and in any event within five business days after Tenant receives or sends same, copies of all claims, reports, complaints, notices, warnings or asserted violations relating in any way to the Premises or Facility or Tenant's use thereof and concerning Hazardous Materials or Hazardous Materials Laws. In the event Tenant institutes a cleanup or removal action, Tenant shall provide to Landlord in a timely manner copies of all workplans and subsequent reports submitted to the governmental agency with jurisdiction over such action.

B. Tenant's Indemnification. Except to the extent caused by Landlord's sole negligence or willful misconduct, Tenant shall indemnify, defend and hold Landlord harmless from any and all claims, causes of action, liabilities, losses, damages, injunctions, suits, fines, penalties, costs or expenses (including attorneys' fees and expenses and consultant fees and expenses) caused or alleged to have been caused by the presence of Hazardous Materials in, on, under, about, or emanating from the Premises or the Facility, including, without limitation, any bodily injury, death, property damage, natural resource damage, decrease in value of the Premises or the Facility, caused or alleged to have been caused by Tenant or Tenant's Parties' use, storage, handling, treatment, generation, presence, discharge or release of Hazardous Materials in violation of Tenant's obligations under this Ground Lease, whether such claims, causes of action or liabilities are first asserted during the Term or thereafter, and including without limitation, claims made against Landlord with respect to bodily injury, death or property damage sustained by third parties caused or alleged to have been caused by Tenant or Tenant's Parties' use, storage, handling, treatment, generation, presence, discharge or release of Hazardous Materials.

ARTICLE 7.
CONSTRUCTION AND LIENS

7.1 Improvements.

A. Construction. Tenant shall construct or cause to be constructed the improvements described in Exhibit C (**"Improvements"**) within the time and in the manner set forth in Exhibit C. Except as otherwise provided in this Section 7.1, Tenant shall diligently prosecute, complete, and accomplish the Improvements without cost or expense to Landlord, by licensed contractors, in compliance with all applicable Laws and permits, and in a first-class and workmanlike manner, as provided in Exhibit C and this Article 7.

B. Timely Completion. Tenant shall take all steps necessary to enable it to commence, and will commence the construction of the Improvements and will diligently prosecute and complete maintenance ane improvements necessary to maintain the Facility, Premises, and Non-Exclusive Use Areas in Exhibit Cgood condition . In the event Tenant fails to improve or maintain the Premises, Facility, or Non-Exclusive Use Areas to maintain good condition, and does not cure such failure within 30 days of receipt of written notice from Landlord of such failure (or, if such failure cannot be cured within that 30 day period, Tenant has failed to commence the cure within 30 days and thereafter diligently and continuously pursue such cure to completion), at Landlord's election, exercisable in its reasonable discretion, this Ground Lease shall terminate, and be null and void, and of no further force or effect.

7.2 Alterations on Premises, Facility, or Non-Exclusive Use Areas. Any construction, reconstruction, alterations, additions, or improvements or remodeling, in, on, or about the Facility,the Premises or the Non-Exclusive Use Areas undertaken by or on behalf of Tenant from and after the Commencement Date (including without limitation the Improvements, **"Alterations"**) shall be governed by this Ground Lease. All Alterations, including exterior elevations and color thereof, and all such other improvements, shall be architecturally and aesthetically compatible and harmonious with the Facility, Premises, and Non-Exclusive Use Areas Berkeley Marina and any other buildings and improvements thereon to create a uniform general plan for the entire Berkeley Marina. Any Alterations shall be in compliance with applicable Laws and permits, shall at all times be of first-class construction and architectural design, and shall be in accordance with all plans and specifications therefor submitted to and approved by Landlord as set forth below. No material changes to such approved plans and specifications shall be made without Landlord's prior written approval. All Alterations shall be diligently prosecuted, completed, and accomplished without cost or expense to Landlord (except by Tenant Improvement Allowance, as applicable), by licensed contractors, and in a first-class and workmanlike manner.

A. Alterations, Other than Minor Alterations. Except with Landlord's prior written consent, which may be granted or denied in Landlord's reasonable discretion, Tenant shall not make or cause to be made any Alterations except for Minor Alterations as set forth below. If Tenant at any time following the Commencement Date desires to undertake any Alterations (other than Minor Alterations), Tenant shall, prior to the commencement of such work, prepare or cause to be prepared, at its sole expense, and shall submit to Landlord for its review, cost estimates, plans and specifications for such work, showing, without limitation, scaled elevations, scaled floor plans, design concepts, dimensions, material selection, colors, signing (if any) and such additional information as is reasonably requested by Landlord to make an informed decision on such submission. The plans and specifications shall comply with this Ground Lease and shall be in compliance with applicable Laws. Landlord shall approve or disapprove such submitted plans within 30 days of receipt of complete plans and specifications meeting the requirements of this subsection. Failure of the Landlord to approve or disapprove such plans and specifications within such 30-day period shall be deemed to be Landlord's disapproval.

B. Minor Alterations. Tenant shall have the right without Landlord's consent (but subject to all other provisions of this Ground Lease and upon 30 days prior written notice to Landlord), to undertake nonstructural alterations or remodeling of the Facility not visible from the outside or affecting exterior appearance and not altering the preexisting location of the Facility on the Premises, not exceeding $150,000 individually or $300,000 in cumulative costs during the Term of this Ground Lease (**"Minor Alterations"**). Notwithstanding the foregoing, and regardless of the cost thereof, Landlord's prior consent is required for any Alteration involving utility work, or attachment or any fixture or equipment to the Facility.

7.3 **Construction Standards**. Unless expressly provided otherwise in this Article (or for the Improvements Exhibit C), the following standards shall apply to the design and construction of all Alterations under this Ground Lease.

A. Insurance. Tenant's designers, contractors and subcontractors shall maintain in force workman's compensation and such other employee, liability and property insurance as is customary for similar construction projects, and Tenant's designers, contractors and subcontractors shall also maintain in force professional liability insurance as is customary for similar construction projects. Other than worker's compensation and professional liability insurance, Landlord and Landlord Parties shall be named as additional insureds on all such insurance and Tenant shall provide certificates of insurance confirming such addiitonal insured status prior to commencement of any Alterations work other than Minor Alterations.

B. Utility Work. Any work performed by or on behalf of Tenant or any occupant or sublessee to connect to, repair, relocate, maintain or install any storm drain, sanitary sewer, water line, gas line, telephone conduit or any other public utility service shall be performed so as to minimize interference with the provision of such services to other occupants and users of the Berkeley Marina.

C. Contracts, Plans and Specifications. With the exception of Minor Alterations, all contracts with any architect, other design professional or any general contractor for the Alterations shall provide, in form and substance reasonably satisfactory to Landlord, for the assignment thereof to Landlord as security to Landlord for Tenant's performance hereunder, and Landlord shall be furnished with any such agreement, together with the further agreement of the parties thereto, that if this Ground Lease is terminated due to Tenant's default, Landlord may use any plans and specifications to which Tenant is then entitled pursuant to any such contract without payment of any further sums to any party thereto.

D. Permits. To the extent that any Alterations require a building permit or other permits from the City of Berkeley, Bay Conservation and Development Commission (**"BCDC"**) and/or any other governmental agency, Tenant shall not perform any Alterations until Tenant has obtained all requisite permits.

E. Construction Safeguards. Tenant shall erect and properly maintain at all times, as required by the conditions and the progress of work performed by Tenant, all necessary safeguards for the protection of workers and the public.

F. Prevailing Wage Laws. Tenant shall comply with all prevailing wage requirements of California Labor Code Sections 1720 et seq., to the extent, such requirements are applicable to Alterations. Tenant agrees that to the extent it is required to comply with the prevailing wage requirements, Tenant shall assure that all workers are paid the general prevailing rate of per diem wages and the general per diem prevailing rate for holiday and overtime work as defined by applicable Laws (including without limitation Labor Code Section 1773.1) in effect from time to time. Copies of the applicable prevailing rate of per diem wages are on file at Landlord's principal office and will be made available to any interested party on request. Tenant agrees to post a copy of the prevailing rate of per diem wages at the Premises. Tenant, as a penalty to Landlord, shall forfeit $200 for each calendar day, or portion thereof (or such other sum as specified from time to time by Section 1775 of the California Labor Code), for each worker paid less than the applicable prevailing rates for such work or craft in which such worker is employed. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by Tenant.

G. Landlord's Rights. Nothing herein shall limit any Landlord right under this Ground Lease, including without limitation those under Sections 5.9 and 5.10 above.

H. Completion. Upon completion of any Alterations (including Minor Alterations), Tenant shall deliver to Landlord two sets of final as-built plans and specifications, and copies of all permits, for the applicable work.

I. Tenant Costs. Except as otherwise expressly provided in this Ground lease, all Alterations shall be without cost or expense to Landlord.

7.4 Protection of Landlord. Nothing in this Ground Lease shall be construed as constituting the consent of Landlord, expressed or implied, to the performance of any labor or the furnishing of any materials in connection with any Alterations by any contractor, subcontractor, laborer or materialman, nor as giving Tenant or any other person any right, power or authority to act as agent of, or to contract for or permit the rendering of, any services, or the furnishing of any materials, in such manner as would give rise to the filing of mechanics' liens or other claims against the Premises or Facility. Landlord shall have the right at all reasonable times to post, and keep posted, on the Facility and the Premises any notices which Landlord may reasonably deem necessary for the protection of Landlord and of the Premises and Facility from mechanics' liens or other claims. Tenant shall give Landlord 10 days' prior written notice of the commencement of any Alterations to be done on or about the Facility or Premises to enable Landlord to post such notices. In addition, Landlord may in its discretion require Tenant to furnish to Landlord at Tenant's expense reasonable improvement security, including performance and labor and materials bonds, prior to commencement of any Alterations. Tenant shall make, or cause to be made, prompt payment of all monies due and legally owing to all persons doing any Alterations or furnishing any materials or supplies to Tenant or any of its contractors or subcontractors in connection therewith.

7.5 Liens and Stop Notices. Tenant shall keep the Premises and Facility free and clear of all stop notices, mechanics' liens and other liens on account of any Alterations done for Tenant or persons claiming under it. Tenant shall indemnify and save Landlord harmless against liability, loss, damages, costs, attorneys' fees, and all other expenses on account of claims of lien of laborers or materialmen or others for Alterations performed or materials or supplies furnished to Tenant or persons claiming under it. If a claim of a lien or stop notice is given or recorded affecting the Premises or Facility, Tenant shall within 30 days of such recording or service:

A. Pay and discharge the same;

B. Affect the release thereof by recording and delivering to Landlord a lien release bond in customary form and amount which results in the removal of such lien from the Facility and the Premises; or

C. Otherwise obtain or effect the release thereof.

7.6 **<u>Notice</u>.** Should any claims of lien be filed against the Premises or Facility thereon, or any action be commenced affecting the title to such property, the party receiving notice of such lien or action shall forthwith give the other party written notice thereof.

ARTICLE 8.
OWNERSHIP OF IMPROVEMENTS AND PERSONAL PROPERTY

8.1 **<u>Ownership of Facility During Term</u>.** During the Term, the Facility and Alterations shall be and remain the property of Tenant; provided that Tenant's rights and powers with respect to the Facility and any Alterations shall be and shall remain subject to the terms and limitations of this Ground Lease. Tenant covenants for itself and all persons claiming under or through it that the Facility is real property.

8.2 **<u>Ownership of Improvements at Termination or Expiration</u>.** Upon the expiration or other termination of this Ground Lease, all improvements on the Premises, including the Facility and any Alterations (save and except any of Tenant's proprietary items or those which contain any of Tenant's intellectual property) shall, without compensation to Tenant, become Landlord's property free and clear of all claims to or against them by Tenant or any third person, and Tenant shall defend, indemnify and hold Landlord harmless against any and all claims, liability and losses arising from such claims or from Landlord's exercise of the right conferred by this Section 8.2.

8.3 **<u>Removal and Ownership of Personal Property at Termination or Expiration</u>.** Parties agree that all attached, wired, plumbed, affixed, or mounted furniture, fixtures and equipment, including stoves, hoods, refrigeration, and other booths, bars, and kitchen equipment which are located in the Premises on the date of this Lease shall revert to City ownership at the termination of the Term. Should Tenant purchase and install replacements for any item listed above during the Term of this Lease, then at Tenant's election, Tenant may remove such item(s) at the termination of the Term. At the expiration or sooner termination of the Term, Landlord may, at Landlord's election, require Tenant to remove from the Premises, at Tenant's sole cost and expense, all personal property. Tenant shall be entitled to remove from the Premises, at Tenant's sole cost and expense, at the expiration or sooner termination of the Term, all of Tenant's personal property , inventory, books and records, artwork, and any of Tenant's proprietary items or those which contain any of Tenant's intellectual property, Tenant shall be liable to Landlord for costs incurred by Landlord in effecting the removal of such personal property (including fixtures) which Tenant has failed to remove after demand pursuant to this section.

A. Tenant may, from time to time during the Term, remove any personal property (other than fixtures) that may be removed without damage to the structural integrity of the Premises or Facility. Tenant shall repair all damage caused by any such removal.

B. Any personal property owned by Tenant and not removed by Tenant prior to the expiration or earlier termination of the Term shall be deemed to be abandoned by Tenant and shall, without compensation to Tenant, become the Landlord's property, free and clear of all claims to or against them by Tenant or any other person, but subject to the rights of third party lenders and equipment lessors as to which Landlord has notice.

ARTICLE 9.
UTILITIES

Tenant shall be solely responsible for contracting for, and shall promptly pay all charges for telephone, computers and cable lines, wiring, materials, security, heat, air conditioning, water, gas, sewer, electricity, refuse, sewage, garbage, pest control services, and any other utility service supplied to the Facility, the Premises or any portion thereof, or any other improvements located thereon (**"Utilities"**). Tenant shall indemnify, defend and hold Landlord harmless from and against any and all demands, liabilities, claims, actions, damages, costs and expenses, including reasonable attorneys' fees, arising out of or connected with the provision and payment of the Utilities.

ARTICLE 10.
INSURANCE AND INDEMNITY

10.1 General Insurance Requirements.

A. During the entire Term of this Ground Lease, Tenant shall provide the following forms and amounts of insurance with respect to the Facility and the Premises. Such insurance shall be primary to and not contributing with any other insurance, self-insurance, or joint self-insurance maintained by the Landlord, shall name the Landlord as an additional insured, and shall include, but not be limited to:

1. Fire and Extended Coverage Insurance in All-Risk form, with vandalism and malicious mischief endorsements, covering the Facility and the Premises against loss or damage in an amount equal to not less than 100% of the replacement cost of the Facility, including all Alterations and fixtures, with such commercially reasonable deductible as may be approved by Landlord in its reasonable discretion; provided however, Tenant maintains a deductible or self-insured retention of $500,000.00 and the same is approved by Landlord. Such insurance shall include coverage for cost of demolition and increased cost of construction by reason of changes in applicable ordinances and laws and shall not contain a co-insurance clause.

2. Business Interruption Insurance on an "all risk" basis which will provide recovery for a minimum of 12 months of Tenant's continuing Rent obligations, (including without limitation Percentage Rent which likely would have been payable in the absence of the interruption).

3. Broad Form Commercial General Liability Insurance protecting Tenant against claims for bodily injury, personal injury and property damage based upon, or arising out of, the ownership, use, occupancy or maintenance, directly or indirectly, of the Premises, Facility, or Non-Exclusive Use Areas and all areas appurtenant thereto. Such insurance shall be written on an "occurrence" policy form providing single limit coverage in an amount not less than $2,000,000 per occurrence and umbrella/excess liability insurance in the amount of $5,000,000. Tenant shall add Landlord and its officers, agents, employees, and representatives (together, **"Landlord Parties"**) as additional insureds by means of an endorsement at least as broad as the Insurance Service Organization's "Additional Insured-Managers or Landlords of Premises" endorsement and coverage shall also be extended to include

damage caused by heat, smoke or fumes from a hostile fire. The policy shall not contain any intra-insured exclusions as between insured persons or organizations, but shall include coverage for liability assumed under this Ground Lease as an "insured contract" for the performance of Tenant's indemnity obligations under this Ground Lease. The limits of this insurance shall not, however, limit the liability of Tenant nor relieve Tenant of any obligation hereunder. Tenant shall provide a "per location' endorsement on its liability policy or policies that provides that the general aggregate and other limits apply separately and specifically to the Premises and Facility.

4. Auto Liability Insurance endorsed for all owned and non-owned vehicles in the initial amount of $2,000,000, combined single limit.

5. Worker's Compensation Insurance in an amount and form to meet all applicable requirements of the Labor Code of the State of California.

6. Lender Insurance. Any additional policy of insurance required by any lender providing permanent financing for the Facility or any Alterations.

B. Review. The liability insurance requirements may be reviewed by Landlord every five years, for the purpose of increasing (in consultation with its insurance advisors) the minimum limits of such insurance from time to time to limits which shall be reasonable and customary for similar facilities of like size and operation in accordance with generally accepted insurance industry standards, but in no event will Tenant be required to increase the amount of cumulative or single occurrence coverage by more than 50% for any five-year period.

C. General. Companies writing the insurance required hereunder shall be licensed to do business in the State of California. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII. The commercial general liability and automobile liability policies hereunder shall name Landlord and Landlord Parties as additional insureds. Tenant shall furnish Landlord with a certificate of insurance evidencing the required insurance coverage and a duly executed endorsement evidencing such additional insured status. The certificate shall contain a statement of obligation on the part of the carrier to notify Landlord of any material change, cancellation or termination of the coverage at least 30 days in advance of the effective date of any such material change, cancellation or termination. Upon Landlord's request, Tenant shall provide certified copies of all insurance pollicies, including declarations pages. Coverage provided hereunder by Tenant shall be primary insurance and shall not be contributing with any insurance, self-insurance or joint self-insurance maintained by Landlord or City, and the policy shall so provide. The insurance policies shall contain a waiver of subrogation for the benefit of the Landlord and other additional insureds. The required certificate and endorsement shall be furnished by Tenant to Landlord prior to the Commencement Date, and prior to each anniversary thereof. If Tenant fails to purchase, renew or maintain any insurance policies required herein, Landlord shall have the right to so purchase any such insurance.

10.2 Indemnity. To the greatest extent permitted by Law (including without limitation Civil Code Section 2782 if and to the extent applicable), Tenant shall protect, indemnify, defend and hold Landlord and Landlord Parties harmless from and against any and all demands, liability, claims, actions and damages to any person or property, costs and expenses, including attorneys' fees, arising out of or connected with: (i) a default by Tenant of its obligations under this Ground Lease; (ii) the use or occupancy of the Facility, the Premises, the improvements thereon including any Alterations, or any portion thereof, by Tenant or Tenant's Parties, other than those attributable to the sole negligence or willful misconduct of Landlord or Landlord Parties; and (iii) the release, use, generation, discharge, storage or disposal of any Hazardous Materials on, under, in or about, or the transportation of any such Hazardous Materials to or from, the Premises in violation, or alleged violation, of any Laws, which occurs at any time during the Term. The indemnity obligation in clause (iii) above shall include any demands, liability, claims or actions for tangible or intangible property damage; compensation for lost wages, business income, profits or other economic loss; damage to the natural resource or the environment; nuisance; trespass; and/or contamination, leak, spill, release or other adverse effect on the environment. Tenant's indemnity obligations under this Section shall survive the expiration or termination of this Ground Lease.

ARTICLE 11.
DAMAGE OR DESTRUCTION

11.1 Restoration.

A. Insured Damage. No loss or damage by fire or any other cause resulting in either partial or total destruction of the Facility or any other improvements now or hereafter located on the Premises, including any fixtures, personal property, equipment or machinery used or intended to be used in connection with the Premises or Facility, shall (except as otherwise provided in Sections 11.1.B or 11.2, below) operate to terminate this Ground Lease or to relieve or discharge Tenant from the payment of any Rent, or other amounts payable hereunder, as and when they become due and payable, or from the performance and observance of any of the agreements, covenants and conditions herein contained to be performed and observed by Tenant. Provided however, Rent shall abate during any period of time after the occurrence of such casualty if Tenant can no longer operate its business in the Facility. Tenant covenants to repair, reconstruct, and/or replace or cause to be repaired, reconstructed and/or replaced the Facility and any other improvements now or hereafter located on the Premises, including any fixtures, personal property, equipment or machinery used or intended to be used in connection with the Premises or Facility, so damaged or destroyed. Subject to the rights of any Ground Leasehold Mortgagee (as defined in Section 14.2 below) Tenant also covenants that all insurance proceeds will be deposited with the Insurance Trustee and applied to the repair, reconstruction and/or replacement described herein. Tenant's failure to make such full repair, restoration and replacement under any conditions in which it was elected or required so to do shall constitute a default by Tenant under this Ground Lease.

B. Facility Uninsured Damage. Notwithstanding the provisions of Section 11.1.A, if, during the Term, (i) the Facility is totally destroyed or rendered inaccessible or if the remaining portion of the Facility is rendered unsuitable (as defined herein) for Tenant's continued use, from a risk not covered 90% by the insurance required to be carried by Tenant under this Ground Lease, and (ii) the cost of restoration exceeds 50% of the then replacement value of the Facility as reasonably determined by Landlord, Tenant can elect to terminate this Ground Lease by giving notice to Landlord within 30 days after Landlord's determination of the restoration cost and replacement value. The Facility shall be deemed unsuitable for Tenant's continued use if, following a reasonable amount of reconstruction, Tenant's business in the Facility could not be operated at an economically feasible level. If Tenant elects to terminate this Ground Lease, Landlord in Landlord's sole and absolute discretion may, within 90 days after receiving Tenant's notice to terminate, elect to pay the difference between 90% of the replacement value of the Facility and the actual cost of restoration, in which case Tenant shall restore the Facility. Promptly following Landlord's election to contribute, Landlord shall deposit the amount of its contribution with the Insurance Trustee provided for in subsection C below. If Tenant elects to terminate this Ground Lease and Landlord in its sole and absolute discretion does not elect to contribute toward the cost of restoration as provided in this Subsection 11.1.B, this Ground Lease shall terminate as of the 91st day following Tenant's notice.

C. Establishment of Insurance Trust and Disbursement Procedures. Except as may otherwise be required by any Ground Leasehold Mortgagee, Tenant shall make the loss adjustment with the insurance company insuring the loss and on receipt of the proceeds shall immediately pay them to a builder's control company, title company, or bank selected by the mutual agreement of the parties (**"Insurance Trustee"**). To the extent Landlord in its sole and absolute discretion elects to contribute to the restoration costs as provided in subsection B above, Landlord shall deposit with the Insurance Trustee its contribution toward the cost of restoration. All sums deposited with the Insurance Trustee shall be held for the following purposes and the Insurance Trustee shall have the following powers and duties:

1. The sums shall be paid in installments by the Insurance Trustee to the contractor retained by Tenant as construction progresses, for payment of the cost of restoration. Any final retention provided for in the contact with such contractor will be paid to the contractor on completion of restoration, payment of all costs, expiration of all applicable lien periods, and proof that the restored Facility and the Premises are free of all mechanics' liens and lienable claims.

2. Payments shall be made on presentation of certificates or vouchers from the architect or engineer retained by Tenant showing the amount due. If the Insurance Trustee, in its reasonable discretion, determines that the certificates or vouchers are being improperly approved by the architect or engineer retained by Tenant, the Insurance Trustee shall have the right to appoint an architect or an engineer to supervise construction and to make payments on certificates or vouchers approved by the architect or engineer retained by the Insurance Trustee. The reasonable expenses and charges of the architect or engineer retained by the Insurance Trustee shall be paid by the Insurance Trustee out of the trust fund.

3. If the sums held by the Insurance Trustee are not sufficient to pay the actual cost of restoration, Tenant shall deposit the amount of the deficiency with the Insurance Trustee within ten (10) business days after request by the Insurance Trustee indicating the amount of the deficiency.

4. Any undisbursed funds after compliance with the provisions of this Subsection 11.1.C shall be delivered to Landlord to the extent of Landlord's contribution to the fund, and the balance, if any, shall be paid to Tenant.

5. All actual costs and charges of the Insurance Trustee shall be paid by Tenant.

6. If the Insurance Trustee resigns or for any reason is unwilling to act or continue to act, the parties shall substitute a new trustee in the place of the designated Insurance Trustee.

7. Both parties shall promptly execute all documents and perform all acts reasonably required by the Insurance Trustee to perform its obligations under this Subsection 11.1.C.

11.2 Right to Terminate Upon Destruction Near the End of the Term. If, during the last year of the Term, the Facility is totally or partially destroyed, and if the cost of restoration exceeds 20% of the replacement cost of the Facility immediately before the damage or destruction, Tenant may elect to terminate this Ground Lease, provided that Tenant complies with all of the following conditions:

A. Tenant gives Landlord written notice of the damage or destruction within 30-days after the event causing such damage or destruction;

B. Tenant is not in default under this Ground Lease;

C. Tenant transfers to Landlord all insurance proceeds resulting from the casualty, net of any cost incurred by Tenant in collecting such insurance proceeds and/or in complying with the provisions of Subsection 11.2.E below and net of the portion of such proceeds that are payable to any Ground Leasehold Mortgagee pursuant to the Ground Leasehold Mortgage; and

D. Tenant delivers possession of the Premises, the Facility and all other improvements located on the Premises to Landlord and quitclaims to Landlord all of Tenant's right, title and interest therein.

E. If Tenant so elects to terminate this Ground Lease under this Section, then Tenant shall, at its expense, promptly remove all debris and put the Facility, the Premises and all improvements thereon in a safe condition. Following Tenant's satisfactory performance of the foregoing requirements, this Ground Lease shall terminate and the parties shall have no further obligations to each other excepting those previously accrued but theretofore unsatisfied and those obligations which by their terms survive expiration or termination of this Ground Lease.

11.3 **Waiver.** The provisions of this Article 11 shall govern the rights of the parties in the event of any full or partial destruction of the Facility and any improvements thereon. Tenant hereby waives the provisions of Civil Code Section 1932(2) and Civil Code Section 1933(4) and any similar successor statute or Law with respect to any destruction of the Facility.

11.4 **Determination of Extent of Destruction, Interference with Use.** For purposes of this Article 11, the extent of destruction of the Facility shall be determined by dividing the estimated cost of replacement or restoration as evidenced by estimates prepared by licensed general contractors acceptable to Landlord by the full replacement cost of the Facility, as reasonably determined by Landlord.

11.5 **Procedures for Repair and Restoration.** In the event of any damage or destruction, Tenant shall promptly give Landlord written notice of such damage or destruction and the date on which such damage or destruction occurred. Tenant shall promptly make proof of loss and shall proceed promptly to collect, or cause to be collected, all valid claims which Tenant may have against insurers or others based upon any such damage or destruction. Except as otherwise provided above, amounts received on account of any losses pursuant to insurance policies shall be used and expended for the purpose of fully repairing or reconstructing the portions of the Facility which have been destroyed or damaged. Tenant shall commence and complete or cause to be commenced and completed, in a good and workmanlike manner and in accordance with Article 7, the reconstruction or repair of any part of the Facility damaged or destroyed, after Landlord has approved Tenant's plans, drawings, specifications, construction schedule and permits for such reconstruction or repair.

ARTICLE 12.
CONDEMNATION

12.1 Definitions.

A. **"Condemnation"** means: (1) the exercise of any governmental power in eminent domain, whether by legal proceedings or otherwise, by a condemnor, and (2) a voluntary sale or transfer to any condemnor, either under threat of condemnation or while legal proceedings for condemnation are pending.

B. **"Date of taking"** means the date the condemnor has the right to possession of the property being condemned.

C. **"Award"** means all compensation, sums or anything of value awarded, paid or received on a total or partial condemnation.

D. **"Condemnor"** means any public or quasi-public authority, or private corporation or individual, having the power of condemnation.

12.2 Parties' Rights and Obligations to be Governed by Ground Lease. If during the Term there is any taking of all or any part of the Premises, the Facility or any other improvements on the Premises or any interest in this Ground Lease by condemnation, the rights and obligations of the parties shall be determined pursuant to the provisions of this Article 12.

12.3 Total Taking. If the Premises or Facility is totally taken by condemnation, this Ground Lease shall terminate on the date of taking.

12.4 Effect of Partial Taking. If a portion of the Facility or Premises or any other improvements thereon are taken by condemnation, this Ground Lease shall remain in effect, except that Tenant may elect to terminate this Ground Lease if the remaining portion of the Premises or Facility is rendered unsuitable (as defined herein) for Tenant's continued use. The remaining portion of the Facility or the Premises shall be deemed unsuitable for Tenant's continued use if, with a reasonable amount of reconstruction, Tenant's business in the Facility could not be operated at an economically feasible level. Tenant must exercise its right to terminate by giving Landlord written notice of its election within 90 days after the nature and extent of the taking have been finally determined. Such notice shall also specify the date of termination, which shall not be prior to the date of taking. Failure to properly exercise the election provided for in this Section 12.4 will result in this Ground Lease continuing in full force and effect. Provided however, if the Ground Lease continues in effect as aforesaid, the Base Rent shall be equitably abated based on the remaining area of the Facility or the Premises bears to the pre-condemnation area of the Facility or the Premises.

12.5 Restoration of Facility. If in Tenant's judgment it is reasonably possible and economically feasible to do so, Tenant shall be entitled to use that portion of the award allocable to the Facility (but not any portion allocable to the Premises) as is necessary to restore or to add on to the Facility so that the area and approximate layout of the Facility will be substantially the same after the date of taking as it was before the date of taking. If it is not reasonably possible and economically feasible to so restore the area and layout of the Facility, the remaining provisions of this Article 12 shall govern the rights of the parties. If Tenant fails to promptly commence any reasonably required repair, restoration or reconstruction of the Facility and diligently prosecute such repair, restoration or reconstruction to completion, and such failure is not remedied within 30 days of written notice from the Landlord to Tenant, this Ground Lease may be terminated by the Landlord.

12.6 **Waiver of CCP Section 1265.130.** Each party waives the provisions of the Code of Civil Procedure Section 1265.130 allowing either party to petition the Superior Court of the County of Alameda, State of California to terminate this Ground Lease in the event of a partial taking of the Premises.

12.7 **Award**. If all or any portion of the Premises is taken in connection with a condemnation, the entire portion of the award allocable to the Premises shall belong to Landlord. Subject to the provisions of Section 12.5, and subject to the rights of any Ground Lease Mortgagee, if all or any portion of the Facility or any other improvements on the Premises is taken in connection with a condemnation, the award for the Facility or such other improvements shall belong to Landlord, except as hereinafter provided. Tenant, or any subtenant, as applicable, shall be entitled to receive only: (a) the value of any leasehold improvements, merchandise, personal property, and furniture, fixtures and equipment owned by Tenant or its subtenant that are taken in connection with such condemnation; and (b) loss of Tenant's or its subtenant's business goodwill, if agreed to be paid by the condemning authority or awarded by a court. Neither Tenant nor any subtenant shall have any right to receive any amount on account of any loss of any other interest in this Ground Lease, including without limitation any so-called "leasehold bonus value" or other amount due to differences between the Rent payable hereunder and the then current fair market rental value of Tenant's interest in this Ground Lease. Nothing in this Section 12.7 shall be deemed a waiver or surrender by Tenant or any subtenant of any right to receive relocation assistance under Government Code Section 7260, et seq., or compensation for moving of personal property under Code of Civil Procedure Section 1263.260.

ARTICLE 13.
BRAND QUALITY, ASSIGNMENT AND SUBLETTING

13.1 **Brand Name and Quality.**

A. Tenant shall continue to operate the Restaurant as Skates on the Bay.

B. Tenant shall continue the first-class business reputation Skates on the Bay currently has in the restaurant industry, and operate a restaurant at the same or better level of quality as at lease commencement.

C. Tenant shall provide the City with advance notice in the event that a brand name change or quality change is requested. The request shall include the reason for the request, along with supporting documentation that the proposed concept, name, and quality will continue to facilitate a first class, high quality, full-service restaurant that meets a community need, and is of a similar price point and revenue-generation standard to Skates on the Bay. The City shall have 3 months to review the proposal, request additional information, however City's approval shall not be unreasonably withheld, conditioned or delayed.

13.2 **Assignment.**

A. Tenant shall not assign, sublet or otherwise transfer, whether voluntarily or involuntarily or by operation of Law, this Ground Lease, the Facility or any part thereof (collectively an **"assignment"**) without Landlord's written consent, which shall not unreasonably be withheld, conditioned or delayed. The merger of Tenant with any other entity or the assignment or transfer of any controlling or managing ownership or beneficial interest in Tenant, or the assignment or transfer of a substantial portion of the assets of Tenant, whether or not located at the Premises, shall constitute an "assignment" hereunder. Tenant agrees that it shall not be unreasonable for Landlord to condition its approval upon, among other things, the proposed assignee having a financial net worth, according to a current financial statement prepared by a certified public accountant, which is equal to or greater than that of Tenant at the date of execution of this Lease or at the time of assignment, whichever is higher, upon the proposed assignee having a reputation for and experience and qualifications in operating and maintaining restaurant properties comparable to the Facility, and upon the proposed assignee having a first-class business reputation. In evaluating the acceptability of the net worth of a proposed assignee, Landlord may require that the assignee's net worth be sufficient to carry out the performance of Tenant's obligation under this Ground Lease. Subject to the foregoing, Landlord agrees that it will not withhold its consent to Tenant's assignment of its interest in this Ground Lease if Tenant demonstrates to Landlord's reasonable satisfaction that such assignee has a net worth equal to or exceeding that of Tenant as of the Effective Date or the assignment date (whichever is greater), has a reputation for and at least five years' experience and qualifications in operating and maintaining at least three similar restaurants of comparable quality, has a first-class business reputation in the restaurant industry, and will provide a restaurant that serves the community well. Tenant shall promptly provide Landlord with any information reasonably requested by Landlord relating to the identity of any proposed assignee, the nature of such assignee's business and the proposed assignee's financial responsibility. Landlord's consideration should be limited to the proposed assignee's financial condition, its business experience and reputation, and the standard of operation of its existing restaurants, in determining whether to grant consent to the assignment.

B. Notwithstanding Subsection 13.1.A above, Landlord's consent is not required for any assignment to an Affiliate of Tenant (as defined below), as long as the following conditions are met: (i) Landlord receives written notice of the assignment (as well as any documents or information reasonably requested by Landlord regarding the assignment or assignee); and (ii) the assignee assumes in writing all of Tenant's obligations under this Ground Lease. For purposes of this Section, **"Affiliate"** means an entity which controls, is controlled by or under common control with Tenant. For the purposes of this definition, "control" means the direct or indirect ownership of more than 50% of the voting securities of an entity or possession of the right to direct the entity's day-to-day affairs. Notwithstanding Subsection 13.1.A above, Landlord's consent is not required for (A) a transfer of any ownership interest in connection with a proposed public offering by Tenant or an Affiliate or parent or holding company; or (B) the merger or consolidation with or the sale of substantially all of the assets of Tenant or Tenant's parent to a third party who shall assume Tenant's obligations under this Lease; in such event, Tenant shall notify Landlord in writing of the occurrence of either of the foregoing events, and shall provide a true and correct copy of the assignment and assumption agreement, together with such other documentation supporting or evidencing said event as may be reasonably requested by Landlord.

C. No partial assignments of this Ground Lease shall be permitted. Assignments of this Ground Lease shall only be made pursuant to a written assignment and assumption agreement in a form reasonably acceptable to Landlord. Landlord's consent to any one assignment shall not constitute consent to any other assignment, and shall not constitute a waiver of the right to give or withhold consent in accordance with this Section 13.1.

D. In the event Tenant shall assign this Ground Lease or request the consent of Landlord to any assignment, or if Tenant shall request the consent of Landlord for any other act Tenant proposes to do, then Tenant shall pay Landlord's reasonable attorneys' fees incurred in connection with each such request.

13.3 **<u>Subleases</u>.** Tenant shall not sublease all or any portion of the Facility or the Premises without Landlord's prior written consent, which may not be unreasonably withheld, conditioned or delayed.

ARTICLE 14.
TENANT DEFAULTS AND LANDLORD'S REMEDIES

14.1 **Defaults by Tenant.** Tenant shall be in default under this Ground Lease upon occurrence of any of the following:

A. Tenant shall at any time be in default in the payment of Rent or any other monetary sum called for by this Ground Lease for more than 10 days following written notice from Landlord to Tenant; or

B. Tenant shall at any time be in default in the keeping and performing of any of its other covenants or agreements herein contained, and should such other default continue for 30 days after written notice thereof from Landlord to Tenant specifying the particulars of such default, or if such other default is of a nature that curing such default will take more than 30 days Tenant has failed to commence such cure within such 30-day period and to thereafter diligently and continuously pursue completion of such cure; or

C. Tenant fails to have timely Commenced Construction or achieved substantial completion of the Improvements as required by Section 2.2; or

D. Tenant abandons or substantially suspends the Improvements prior to completion thereof and such default is not cured within 30 days of written notice from Landlord to Tenant; or

E. Tenant assigns, sells, transfers, conveys, encumbers, hypothecates or leases the whole or any part of the Facility, the Premises, or any other improvement constructed thereon in violation of the Ground Lease; or

F. Except as otherwise expressly permitted in this Ground there is any change in control of Tenant, or any other act or transaction involving or resulting in a change in the identity of the parties in control of Tenant or the degree of such control; or

G. Tenant fails to pay promptly when due each and every installment of principal and interest on any private loan encumbering Tenant's interest in this Ground Lease or any improvements on the Premises for which Tenant is responsible, and such failure continues beyond (i) the expiration of any applicable grace or cure period, and (ii) the date by which Tenant must make payment to cure any notice of default received from the holder of such private loan; or

H. Any Ground Leasehold Mortgagee or any other holder of any private loan encumbering Tenant's interest in this Ground Lease, or any improvements on the Premises initiates a foreclosure of the deed of trust by which such loan is secured, and Tenant fails to cause such foreclosure proceedings to be dismissed prior to the earlier to occur of (i) the trustee under the deed of trust giving notice of the trustee's sale, or (ii) within 30 days of Tenant's receipt of written notice from Landlord..

14.2 **Remedies.** Subject to the rights of any Ground Leasehold Mortgagees permitted under Article 15, upon the occurrence of any such default, in addition to any and all other rights or remedies of Landlord hereunder, or by Law or in equity provided, Landlord shall have the sole option to exercise the following rights and remedies:

A. Terminate this Ground Lease by giving Tenant thirty (30) days prior written notice of termination. Thirty days after the giving of such notice, all of Tenant's rights in the Premises, Facility and any other improvements located thereon, shall terminate. On the 30th day Immediately following delivery of the notice of termination, Tenant shall surrender and vacate the Premises, including the Facility and any other improvements located thereon, leaving them in broom-clean condition; and, subject to Subsection 14.2.B, below, respecting the right of certain subtenants to remain, Landlord may reenter and take possession of the Premises and Facility and eject all parties in possession or eject some and not others, or eject none. Termination under this subsection shall not relieve Tenant from the payment of any sum then due to Landlord or from any claim for damages previously accrued or then accruing against Tenant.

B. Without terminating this Ground Lease, Landlord may at any time and from time to time relet the Premises, including the Facility, or any part or parts thereof for the account and in the name of Tenant or otherwise. Any reletting may be for the remainder of the Term or for a longer or shorter period. Landlord may execute any leases made under this provision either in Landlord's name or in Tenant's name, and shall be entitled to all rents from the use, operation, and occupancy of the Premises, Facility and any other improvements thereon. Tenant hereby appoints Landlord its attorney-in-fact for purpose of such leasing. Tenant shall nevertheless pay to Landlord on the due dates specified in this Ground Lease the equivalent of all sums required of Tenant under this Ground Lease, less the revenue received by Landlord from any reletting or attornment, plus Landlord's expenses, including (by way of example), but not limited to, remodeling expenses, Landlord's brokerage and advertising costs and attorneys' fees and costs. No act by or on behalf of Landlord under this subsection shall constitute a termination of this Ground Lease unless Landlord gives Tenant written notice of termination.

C. Even though Landlord may have relet all or any portion of the Premises, including the Facility and any other improvements thereon, Landlord may thereafter elect to terminate this Ground Lease and all of Tenant's rights in or to the foregoing.

14.3 **Damages.** Should Landlord elect to terminate this Ground Lease, Landlord shall be entitled to recover from Tenant, as damages:

A. The worth at the time of the award of the unpaid Rent that had been earned at the time of termination of this Ground Lease;

B. The worth at the time of the award of the amount by which the unpaid Rent that would have been earned after the date of termination of this Ground Lease until the time of award exceeds the amount of the loss of Rent that Tenant proves could have been reasonably avoided;

C. The worth at the time of the award of the amount by which the unpaid Rent for the balance of the Term of this Ground Lease after the time of award exceeds the amount of the loss of Rent that Tenant proves could have been reasonably avoided; and

D. Any other amount (and court costs) necessary to compensate Landlord for all detriment proximately caused by Tenant's default, including costs of alterations and improvements in connection with reletting.

E. Computing Worth at the Time of Award. The "worth at the time of the award," as used in Subsections 14.3.A and 14.3.B, is to be computed by allowing interest at the maximum rate permitted by Section 1(2) of Article XV of the California Constitution. The "worth at the time of the award," as referred to in Subsection 14.3.C, is to be computed by discounting the amount at the discount rate of the Federal Reserve Bank of San Francisco at the time of the award, plus one percent.

F. Landlord shall mitigate its damages by making reasonable efforts to relet the Premises on reasonable terms, including engaging a listing broker to market the Leased Premises and publishing the space as "available" in real estate databases commonly used by commercial brokers in the San Francisco/Berkley, CA market. Landlord may relet for a shorter or longer period of time than the Term and make any necessary repairs or alterations. If Landlord relets for a period of time shorter or longer than the current Term or at a lower rental rate than the Base Rent herein, then Tenant shall be liable for any lost Rent and expenses related to the new lease limited to leasing commissions, and reasonable tenant improvements, however, the cost of the leasing commissions and tenant improvements shall be amortized over the entire reletting term so that Tenant shall only be liable for such costs and expenses allocated to the remaining term of the Lease.

14.4 Landlord's Right to Cure Tenant's Default. Landlord, at any time after Tenant commits a default which Tenant has failed to cure within the time established therefor, may cure the default at Tenant's cost. If Landlord at any time, by reason of Tenant's default, pays any sum, the sum paid by Landlord shall be due immediately from Tenant to Landlord at the time the sum is paid, and if paid at a later date, shall bear interest at the maximum rate permitted under Section 1(2) of Article XV of the California Constitution from the date the sum is paid by Landlord until Landlord is reimbursed by Tenant.

ARTICLE 15.
MORTGAGEE PROTECTION PROVISIONS

15.1 Ground Leasehold Mortgage Authorized. In addition to the mortgagee under the Existing Ground Leasehold Mortgage, as provided and defined in this Article, Tenant may mortgage or otherwise encumber Tenant's interest in this Ground Lease to an "Institutional Investor" under one or more Ground Leasehold Mortgage(s) and assign this Ground Lease as security for such mortgage(s). The Ground Leasehold Mortgage(s) shall affect only Tenant's interest in this Ground Lease and shall be subject to all of the terms and provisions of this Ground Lease. Landlord's fee interest shall not be encumbered or subordinated.

15.2 Notice to Landlord. If Tenant shall mortgage Tenant's interest in this Ground Lease to an Institutional Investor, and if the holder of such Ground Leasehold Mortgage shall provide Landlord with notice of such Ground Leasehold Mortgage, together with a true copy of such Ground Leasehold Mortgage, the note and all other documents relating to such Ground Leasehold Mortgage, and the name and address of the holder, Landlord and Tenant agree that, following receipt of such notice by Landlord, the provisions of this Article 15 shall apply with respect to such Ground Leasehold Mortgage. In the event of any assignment of a Ground Leasehold Mortgage, or in the event of a change of address of the holder thereunder or of an assignee of such holder, notice of the new name and address shall be provided to Landlord. Tenant shall thereafter also provide Landlord from time to time with a copy of each amendment or other modification or supplement to such instruments. All recorded documents shall be certified as true and correct copies of official records by the Alameda County Recorder and all nonrecorded documents shall be accompanied by a certification by Tenant or the holder that such documents are true, complete, and correct copies of the originals.

15.3 **Definitions.** As used in this Article 15:

A. **"Institutional Investor"** means any lender which has assets in excess of $100 Million at the time the Ground Leasehold Mortgage or similar loan is made.

B. **"Ground Leasehold Mortgage"** includes a mortgage, deed of trust or other security instrument authorized in favor of an (except as provided in Section 15.3) either (i) an Institutional Investor by which Tenant's interest in this Ground Lease are mortgaged, conveyed, assigned or otherwise transferred to secure a debt or other obligation, or (ii) the Existing Ground Leasehold Mortgage.

C. "**Existing Ground Leasehold Mortgagee**" or "**Mortgagee**" shall refer to a holder of a Ground Leasehold Mortgage either (i) under with respect to which the notice provided for by Section 15.2 has been given and received and as to which the provisions of this Article 15 are applicable or (ii) under the Existing Ground Leasehold Mortgage.

15.4 **Consent of Ground Leasehold Mortgagee Required.** No cancellation, surrender or modification of this Ground Lease shall be effective as to any Ground Leasehold Mortgagee unless consented to in writing by such Ground Leasehold Mortgagee.

15.5 **Notice to Ground Leasehold Mortgagee.** With respect to any Ground Leasehold Mortgage, whenever Landlord shall deliver any notice to Tenant with respect to any default by Tenant hereunder, Landlord shall at the same time deliver a copy of such notice to each Ground Leasehold Mortgagee authorized by this Ground Lease. No notice of default shall be effective as to the Ground Leasehold Mortgagee unless such notice is given. Each Ground Leasehold Mortgagee shall (insofar as the rights of Landlord are concerned) have the right, at its option, within 60 days after the receipt of the copy of the notice, to cure or remedy or commence to cure or remedy any such default. In the event possession of the Facility or the Premises, or any portion thereof, is required to effectuate such cure or remedy, the Ground Leasehold Mortgagee shall be deemed to have timely cured or remedied if it commences the proceedings necessary to obtain possession thereof within 60 days after receipt of the copy of the notice, diligently and continuously pursues such proceedings to completion, and, after obtaining possession, diligently and continuously completes such cure or remedy. The provisions of Section 15.7 below shall apply if, during such 60-day termination notice period, the Ground Leasehold Mortgagee shall

A. Notify Landlord of such Ground Leasehold Mortgagee's desire to nullify such notice, and

B. Pay or cause to be paid all Rent, and other payments then due and in arrears as specified in the termination notice to such Ground Leasehold Mortgagee and which may become due during such 60-day period, and

C. Comply, or in good faith, with diligence and continuity, commence to comply, with all nonmonetary requirements of this Ground Lease then in default and reasonably susceptible of being complied with by such Ground Leasehold Mortgagee; provided, however, that in the event such Ground Leasehold Mortgagee shall commence foreclosure proceedings within such 60-day period, such Ground Leasehold Mortgagee shall not be required during such 60-day period to cure or commence to cure any default consisting of Tenant's failure to satisfy and discharge any lien, charge or encumbrance against the Tenant's interest in this Ground Lease junior in priority to the lien of the Ground Leasehold Mortgage held by such Ground Leasehold Mortgagee.

D. Any notice to be given by Landlord to a Ground Leasehold Mortgagee pursuant to any provision of this Article 15 shall be deemed properly addressed if sent to the Ground Leasehold Mortgagee who served the notice referred to in Section 15.2 at the address stated in such notice unless notice of a change of mortgage ownership has been given to Landlord pursuant to Section 15.2.

15.6 **<u>Ground Leasehold Mortgagee Foreclosure</u>.** If Landlord shall elect to terminate this Ground Lease by reason of any default of Tenant and the Ground Leasehold Mortgagee shall have proceeded in the manner provided for by Section 15.5, the specified date for termination of this Ground Lease as fixed by Landlord in its termination notice shall be extended for a period of six months, provided that such Ground Leasehold Mortgagee shall, during such six-month period:

A. Pay, or cause to be paid, Rent (including the Base Rent, Percentage Rent, and any other monetary obligations of Tenant under this Ground Lease) as the same become due, and continue its good faith efforts to perform all of Tenant's other obligations under this Ground Lease; and

B. If not enjoined or stayed, take steps to acquire or sell Tenant's interest in this Ground Lease by foreclosure of the Ground Leasehold Mortgage or other appropriate means and prosecute the same to completion with diligence.

If, at the end of such six-month period, such Ground Leasehold Mortgagee is diligently complying with this Section 15.6, this Ground Lease shall not then terminate, and the time for completion by such Ground Leasehold Mortgagee of its proceedings shall continue so long as such Ground Leasehold Mortgagee is enjoined or stayed and thereafter provided such Ground Leasehold Mortgagee continues to meet its obligations under Subsection 15.6.A above, and proceeds to complete steps to acquire or sell Tenant's interest in this Ground Lease by foreclosure of the Ground Leasehold Mortgage or by other appropriate means with reasonable diligence and continuity. Nothing in this Section 15.6, however, shall be construed to extend this Ground Lease beyond the Initial Term (or, if applicable, any then-effective Extension Term), nor to require a Ground Leasehold Mortgagee to continue such foreclosure proceedings after the default has been timely cured. If the default shall be timely cured and the Ground Leasehold Mortgagee shall discontinue such foreclosure proceedings, this Ground Lease shall continue in full force and effect as if Tenant had not defaulted under this Ground Lease.

15.7 **<u>Purchaser at Foreclosure</u>.** If the Ground Leasehold Mortgagee is complying with Section 15.6, upon the acquisition of the entirety of Tenant's interest in this Ground Lease by such Ground Leasehold Mortgagee or its designee or any other purchaser at a foreclosure sale or otherwise (and the discharge or extinguishment of any lien, charge or encumbrance against Tenant's interest in this Ground Lease which is junior in priority to the lien of the Ground Leasehold Mortgage held by such Ground Leasehold Mortgagee and which the Tenant is obligated to satisfy and discharge by reason of the terms of this Ground Lease), this Ground Lease shall continue in full force and effect as if Tenant had not defaulted under this Ground Lease. Any such purchaser, including the Ground Leasehold Mortgagee or the transferee under any instrument of assignment or transfer in lieu of the foreclosure of the Ground Leasehold Mortgage, shall be deemed to have agreed to perform all of the terms, covenants and conditions on the part of the Tenant to be performed hereunder from and after the date of such purchase and assignment.

15.8 **Ground Leasehold Mortgagee's Right to Sell.** If such Ground Leasehold Mortgagee acquires title to Tenant's interest in this Ground Lease pursuant to foreclosure, assignment in lieu of foreclosure or other proceedings, such Ground Leasehold Mortgagee, upon acquiring Tenant's interest in this Ground Lease, may sell and assign the combined entirety of Tenant's interest in this Ground Lease only on such terms and to such persons and organizations as are reasonably acceptable to Landlord. If such Ground Leasehold Mortgagee's proposed transferee is acceptable to Landlord, in the exercise of Landlord's commercially reasonable discretion, then from and after the date of such sale and assignment the Ground Leasehold Mortgagee shall be relieved of all obligations under this Ground Lease as if such transferee has delivered to Landlord its written agreement to be bound by all of the provisions of this Ground Lease.

15.9 **Holder Not Obligated to Construct Improvements.** The holder of any Ground Leasehold Mortgage authorized by this Ground Lease shall not be obligated by the provisions of this Ground Lease to construct or complete the Improvements or to guarantee such construction or completion. Nothing in this Ground Lease shall be deemed to or be construed to permit or authorize any such Ground Leasehold Mortgagee to devote the Facility or the Premises to any uses or to construct any improvements thereon or therein other than those uses and improvements provided for and authorized by this Ground Lease.

15.10 **Right of Landlord to Cure Ground Leasehold Mortgage Default.** If a Ground Leasehold Mortgage default or breach by Tenant occurs prior to completion of the Improvements, and the Ground Leasehold Mortgagee has not exercised its option to cure the default, Landlord may cure the default following prior notice thereof to Tenant. In such event, Tenant shall be liable for, and Landlord shall be entitled to reimbursement from Tenant of, all costs and expenses incurred by Landlord associated with and attributable to the curing of the Ground Leasehold Mortgage default or breach. Landlord shall also be entitled to record a lien against Tenant's interest in this Ground Lease to the extent of such incurred costs and disbursements. Any such lien shall be subject and subordinate to all prior Ground Leasehold Mortgages and encumbrances.

ARTICLE 16.
MISCELLANEOUS

16.1 ***Holding Over.*** If Tenant shall hold over in the Facility or on the Premises after the expiration of the Term hereof with the consent of Landlord, such holding over shall be construed to be only a tenancy from month to month, subject to all the covenants, conditions and obligations contained in this Ground Lease. Tenant hereby agrees to pay to Landlord as monthly rental 1/12th of the amount which is 125% of the highest amount of total Annual Rent paid by Tenant to Landlord during the Term.

16.2 **Attorneys' Fees.** In the event that any action is brought by either party hereto against the other for the enforcement or declaration of any right or remedy in or under this Ground Lease or for the breach of any covenant or condition of this Ground Lease, the prevailing party shall be entitled to recover, and the other party agrees to pay, all fees and costs to be fixed by the court therein including, but not limited to, attorneys' fees.

16.3 **Quiet Possession.** Landlord agrees that so long as Tenant is not in default under this Ground Lease and is paying the Rent and performing all of the covenants and conditions of this Ground Lease, Tenant shall quietly have, hold and enjoy the Premises throughout the Term hereof without interruption or disturbance from Landlord or any other persons claiming by, through or under Landlord.

16.4 **Force Majeure**. Except as to the payment of Rent, subject to the limitations set forth below, performance by either party hereunder shall not be deemed to be in Default, and all performance and other dates specified in this Ground Lease shall be extended, where delays are due to: war; insurrection; strikes; lockouts; riots; floods; earthquakes; fires; casualties; acts of God; acts of the public enemy; epidemics; quarantine restrictions; freight embargoes; governmental restrictions or priority; unusually severe weather; lack of reasonable availability of labor or materials; acts or omissions of the other party; or acts or failures to act of the City or any other public or governmental agency or entity (other than the acts or failures to act of Landlord which shall not excuse performance by Landlord). An extension of time for any such cause shall be for the period of the enforced delay and shall commence to run from the time of the commencement of the cause, if notice by the party claiming such extension is sent to the other party within 30 days of the commencement of the cause. Times of performance under this Ground Lease may also be extended in writing by the mutual agreement of Landlord and Tenant. Tenant expressly agrees that adverse changes in economic conditions, either of Tenant specifically or the economy generally, changes in market conditions or demand, and/or Tenant's inability to obtain financing or other lack of funding, or to complete the Improvements shall not constitute grounds of force majeure delay pursuant to this Section 16.4. Tenant expressly assumes the risk of such adverse economic or market changes and/or financial inability, whether or not foreseeable as of the Commencement Date.

If, at any time during the Term, fifty percent (50%) or more of the indoor dining room portion of the Premises cannot be utilized as a seated indoor dining restaurant for more than three (3) days as a result of any local, state, or federal order, regulation, law, directive or other mandate (each a "Government Order"), then Base Rent payable thereafter shall abate commencing as of the date on which such Government Order takes effect, and expiring on the date on which such Government Order is lifted. In the event that the Government Order has not ceased within 180 days from the first date on which the Government Order takes effect, Tenant shall have the right to elect to terminate this Lease at any time thereafter upon written notice to Landlord at any time after the expiration of such 180 day period, and both parties shall be relieved of all further obligations hereunder except for those obligations which expressly survive any termination hereof.

16.6 **Notices.** Any notice to be given or other document to be delivered by either party to the other hereunder shall be in writing and shall be deemed to have been duly given and received (i) upon personal delivery, (ii) as of the third business day after mailing by United States registered or certified mail, return receipt requested, postage prepaid, addressed as set forth below, or (iii) the immediately succeeding business day after deposit with Federal Express or other equivalent overnight delivery system, addressed to the party for whom intended, as indicated in the Basic Lease Information. Any party hereto may from time to time, by written notice to the other, designate a different address which shall be substituted for the one above specified.

16.7 **<u>Waiver</u>.** No waiver of any breach of any of the terms, covenants, agreements, restrictions or conditions of this Ground Lease shall be construed to be a waiver of any succeeding breach of the same or other terms, covenants, agreements, restrictions and conditions hereof.

16.8 **<u>Surrender</u>.** Upon the expiration or sooner termination of the Term of this Ground Lease, and notwithstanding anything herein contained to the contrary, Tenant shall surrender to Landlord the Facility, the Premises and any improvements thereon, broom clean and in good condition and repair, reasonable wear and tear excepted.

16.9 **<u>Binding</u>.** Subject to the restrictions set forth herein regarding assignment of , Tenant's interest in this Ground Lease, each of the terms, covenants and conditions of this Ground Lease shall extend to and be binding on and shall inure to the benefit of not only Landlord and Tenant, but to each of their respective heirs, administrators, executors, successors and assigns. Whenever in this Ground Lease reference is made to either Landlord or Tenant, the reference shall be deemed to include, wherever applicable, the heirs, administrators, executors, successors and assigns of such parties, the same as if in every case expressed.

16.10 **<u>Landlord's Right to Enter Premises and Facility</u>**. Landlord and its authorized representatives shall have the right to enter the Premises and Facility at all reasonable times, after giving Tenant 24 hours prior written notice (except in emergency in which case no notice shall be required), for any purpose, including: to determine whether the Premises, the Facility, or any other improvements on the Premises is in good condition and whether Tenant is complying with its obligations under this Ground Lease; to do any necessary maintenance and to make any restoration to the Facility or any other improvements upon the Premises that Landlord has the right or obligation to perform; to serve, post or keep posted any notices required or allowed under the provisions of this Ground Lease; and to do any act or thing necessary for the safety or preservation of the Facility and the Premises if any excavation or other construction is undertaken or is about to be undertaken on any adjacent property or nearby street.

A. Landlord shall not be liable in any manner for any inconvenience, disturbance, loss of business, nuisance, or other damage arising out of Landlord's entry on the Premises and Facility as provided in this Section other than any property damage, bodily injury, or death caused by the sole active negligence or willful misconduct of Landlord, its agents, employees or contractors.

B. Tenant shall not be entitled to an abatement or reduction of Rent if Landlord exercises any rights reserved in this section but only if Landlord's exercise of such rights does not prevent Tenant from operating its business in the Premises in the ordinary course.

16.11 **<u>Disclaimer of Partnership</u>.** The relationship of the parties hereto is that of Landlord and Tenant, and it is expressly understood and agreed that Landlord does not in any way nor for any purpose become a partner of Tenant or a joint venturer with Tenant in the Improvements or in the conduct of Tenant's business or otherwise.

16.12 **<u>Memorandum</u>.** Landlord and Tenant shall execute a Memorandum of this Ground Lease or any amendment or modification thereof for recordation in the official records of the County of Alameda, California, in substantially the form attached hereto as <u>Exhibit C</u>.

16.13 **<u>Quitclaim</u>.** At the expiration or earlier termination of the Term, Tenant shall execute, acknowledge and deliver to Landlord within 15 days after Landlord's written demand to Tenant, any quitclaim deed or other document reasonably required by Landlord or any reputable title company to remove the cloud of this Ground Lease from the Premises and confirm Landlord's title to the Facility.

16.14 **<u>Interpretation</u>.** The titles to the sections of this Ground Lease are not a part of this Ground Lease and shall have no effect upon the construction or interpretation of any part of this Ground Lease. As used in this Agreement, masculine, feminine or neuter gender and the singular or plural number shall each be deemed to include the others where and when the context so dictates. The word "including" shall be construed as if followed by the words "without limitation." This Agreement shall be interpreted as though prepared jointly by both parties.

16.15 **<u>Severability</u>.** If any term, provision, condition or covenant of this Ground Lease or its application to any party or circumstances shall be held, to any extent, invalid or unenforceable, the remainder of this Ground Lease, or the application of the term, provision, condition or covenant to persons or circumstances other than those as to whom or which it is held invalid or unenforceable, shall not be affected, and shall be valid and enforceable to the fullest extent permitted by Law.

16.16 **<u>Computation of Time</u>.** The time in which any act is to be done under this Ground Lease is computed by excluding the first day, and including the last day, unless the last day is a holiday or Saturday or Sunday, and then that day is also excluded. The term "holiday" shall mean all holidays as specified in Sections 6700 and 6701 of the California Government Code. If any act is to be done by a particular time during a day, that time shall be Pacific Time Zone time.

16.17 **<u>Legal Advice</u>.** Each party represents and warrants to the other the following: they have carefully read this Ground Lease, and in signing this Ground Lease, they do so with full knowledge of any right which they may have; they have received independent legal advice from their respective legal counsel as to the matters set forth in this Ground Lease, or have knowingly chosen not to consult legal counsel as to the matters set forth in this Ground Lease; and, they have freely signed this Ground Lease without any reliance upon any agreement, promise, statement or representation by or on behalf of the other party, or their respective agents, employees, or attorneys, except as specifically set forth in this Ground Lease, and without duress or coercion, whether economic or otherwise.

16.18 **<u>Time of Essence</u>.** Time is expressly made of the essence with respect to the performance by Landlord and Tenant of each and every obligation and condition of this Ground Lease.

16.19 **<u>Nonliability of Landlord's Officials and Employees</u>.** No member, official or employee of Landlord shall be personally liable to Tenant, or any successor in interest, in the event of any default or breach by Landlord or for any amount which may become due to Tenant or its successors, or on any obligations under the terms of this Ground

Lease. Tenant hereby waives and releases any claim it may have against the members, officials or employees of Landlord with respect to any default or breach by Landlord or for any amount which may become due to Tenant or its successors, or on any obligations under the terms of this Ground Lease.

16.20 **Assignment by Landlord.** Landlord may assign or transfer any of its interests hereunder at any time without Tenant's consent, provided any such assignee shall assume in writing all of Landlord's obligations under this Lease, and shall provide written notice to Tenant of any such assignment, and the notice and payment addresses of such assignee.

16.21 **Applicable Law.** The laws of the State of California, including all statutes of limitations but without regard to conflict of laws principles, shall govern the interpretation and enforcement of this Ground Lease.

16.22 **Agent for Service of Process.** Tenant expressly agrees and understands that if it is not a resident of this State, or is an association or partnership without a member or partner resident of this State, or is a foreign corporation or company, then Tenant shall file with Landlord a designation of a natural person residing in the County of Alameda, State of California, giving his or her name, residence, and business address as Tenant's agent for the purpose of service of process in any court action between Tenant and Landlord arising out of or based upon this Ground Lease, and the delivery to such agent of a copy of any process in any such action shall constitute valid service upon such Tenant. Tenant further expressly agrees, covenants and stipulates that if for any reason service of such process upon such agent is not possible, or Tenant fails to maintain such an agent, then in such event Tenant may be personally served with such process out of the State of California, and that such service shall constitute valid service upon such Tenant; and it is further expressly agreed that Tenant is amenable to the process so served, submits to the jurisdiction of the court so acquired, and waives any and all objection and protest thereto.

16.23 **Covenants and Conditions.** Each obligation of the parties hereunder, including, without limitation, Tenant's obligation for the payment of Rent, shall be construed to be both a covenant and a condition of this Ground Lease.

16.24 **Integration.** This Ground Lease, together with all exhibits and attachments hereto, constitute the entire agreement between the parties and there are no conditions, representations or agreements regarding the matters covered by this Ground Lease which are not expressed herein.

16.25 **Estoppel Certificates.** From time to time, Tenant shall execute and deliver to Landlord within 20 days of request a certificate certifying (i) that this Ground Lease is unmodified and in full force and effect or, if there has been any modification, that this Ground Lease is in full force and effect as modified, and stating the date and nature of each such modification; (ii) the date to which Rent and other sums payable hereunder have been paid; (iii) that no notice has been received by Tenant of any default which has not been cured, except as to defaults specified in such certificate; (iv) that Landlord is not in default under this Lease and that Tenant has no claims, charges, offsets or defenses against Landlord, or specifying the nature of any such default or claim, charges, offsets or defense; and (v) such other matters as may be reasonably requested by Landlord. Any such certificate may be relied upon by any prospective purchaser, vendee or other party. If Tenant fails to execute and deliver any such certificate within ten business days after Landlord's written request, such failure, at Landlord's election, shall be conclusive against Tenant that this Lease is in full force and effect, without modification (except as may be represented by Landlord), that there are no uncured defaults in Landlord's performance, and that not more than one month's rent has been paid in advance. In the event that Tenant requests Landlord to execute a certificate pursuant to this 16.25, then Tenant shall pay Landlord's reasonable attorneys' fees and consultant costs incurred in connection with each such request in an amount not to exceed $1,500, which amount shall be increased by annual CPI adjustments.

16.26 **Amendments to this Ground Lease.** Landlord and Tenant agree to mutually consider reasonable requests for amendments to this Ground Lease that may be made by either of them, lending institutions or bond counsel or financial consultants to Landlord or Tenant, provided such requests are consistent with this Ground Lease and would not materially alter the basic business terms included herein. Tenant shall pay Landlord's reasonable attorneys' fees and third-party costs incurred in connection with any amendment requested by or on behalf of Tenant. No amendment shall be effective unless in writing and signed by the parties hereto.

16.27 **Brokerage Commissions.** Landlord and Tenant each represents that it has not been represented by any broker in connection with this Ground Lease, and that no real estate broker's commission, finder's fee or other compensation (individually and collectively, **"Brokerage Commission"**) is due or payable. Landlord and Tenant each agrees to indemnify and hold the other harmless from any claims or liability, including reasonable attorneys' fees, in connection with a claim by any person for a Brokerage Commission based upon any statement, representation or agreement of the other party**.**

16.28 **City Non-Discrimination Ordinance.** Tenant hereby agrees to comply with the provisions of the Berkeley Municipal Code (**"B.M.C."**), including without limitation Chapter 13.26, as amended from time to time. In the performance of its obligations under this Ground Lease, Tenant agrees as follows:

1. Tenant shall not discriminate against any employee or applicant for employment because of race, color, religion, ancestry, national origin, age (over 40), sex, pregnancy, marital status, disability, sexual orientation or AIDS.

2. Tenant shall permit Landlord access to records of employment, employment advertisements, application forms, EEO-1 forms, affirmative action plans and any other documents which, in the reasonable opinion of Landlord, are necessary to monitor compliance with this non-discrimination provision. In addition, Tenant shall fill out, in a timely fashion, forms supplied by Landlord to monitor this non-discrimination provision.

16.29 Non-Discrimination Against Persons With Disabilities.

A. If Tenant provides any aid, service or benefit to others on the Landlord's behalf, Tenant shall, in the provision of such aid, service or benefit, observe and comply with all applicable provisions of Title II of the Americans with Disabilities Act of 1990 and any amendments thereto. Tenant shall further observe and comply with all applicable federal, state, municipal and local laws, ordinances, codes and regulations prohibiting discrimination against individuals with disabilities or ensuring that individuals with disabilities are not excluded from participating in or receiving benefits, services or activities of the Landlord, if applicable.

B. If Tenant is or becomes a "public accommodation" as defined in Title III of the Americans with Disabilities Act of 1990, Tenant shall observe and comply with all applicable provisions of the Act and any amendments thereto, and all applicable federal, state, municipal and local laws, ordinances, codes and regulations prohibiting discrimination on the basis of disability in the full and equal enjoyment of goods, services, facilities, privileges, advantages, or accommodations offered by the Tenant. All of Tenant's activities must be in accordance with these laws, ordinances, codes, and regulations, and Tenant shall be solely responsible for complying therewith.

16.30 Conflict of Interest Prohibited.

A. In accordance with California Government Code Section 1090, Berkeley City Charter Section 36 and B.M.C. Chapter 3.64, neither Tenant nor any employee, officer, director, partner or member of Tenant, or immediate family member of any of the preceding, shall have served as an elected officer, an employee, or a committee or commission member of Landlord, who has directly or indirectly influenced the making of this Ground Ground Lease

B. In accordance with California Government Code Section 1090 and the Political Reform Act, (Government Code Section 87100 et seq.,) no person who is a director, officer, partner, trustee, employee or consultant of Tenant, or immediate family member of any of the preceding, shall make or participate in a decision made by Landlord or any of its boards, commissions or committees, if it is reasonable foreseeable that the decision will have a material effect on any source of income, investment or interest in real property of that person or Tenant, except to the extent permitted by 2 California Code of Regulations, Section 18700(c)(2).

C. Interpretation of this paragraph shall be governed by the definitions and provisions use in the Political Reform Act, Government Code section 87100 et seq., its implementing regulations, manuals and codes, Government Code section 1090, Berkeley City Charter section 36 and B.M.C. Chapter 3.64, as amended from time to time.

16.31 Nuclear Free Berkeley. Tenant agrees to comply with B.M.C. Chapter 12.90, the Nuclear Free Berkeley Act, as amended from time to time.

16.32 Required Accessibility Disclosure.

A. Landlord hereby advises Tenant that the Premises and Facility have not undergone an inspection by a certified access specialist, and except to the extent expressly set forth in this Ground Lease, Landlord shall have no liability or responsibility to make any repairs or modifications to the Premises or the Project in order to comply with accessibility standards. The following disclosure is hereby made pursuant to applicable California law:

B. "A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises." [Cal. Civ. Code Section 1938(e)]. Any CASp inspection shall be conducted in compliance with reasonable rules in effect at the Premises with regard to such inspections and shall be subject to Landlord's prior written consent.

16.33 Oppressive States.

A. In accordance with Resolution No. 59,853-N.S., Tenant certifies that it has no contractual relations with, and agrees during the Term of this Ground Lease to forego contractual relations to provide personal services to, the following entities:

1. The governing regime in any Oppressive State.

2. Any business or corporation organized under the authority of the governing regime of any Oppressive State.

3. Any individual, firm, partnership, corporation, association, or any other commercial organization, and including parent-entities and wholly-owned subsidiaries (to the extent that their operations are related to the purpose of this Ground Lease) for the express purpose of assisting in business operations or trading with any public or private entity located in any Oppressive State.

B. For purposes of this Ground Lease, the Tibet Autonomous Region and the provinces of Ado, Kham, and U-Tsang shall be deemed oppressive states.

C. Tenant's failure to comply with this Section shall constitute a default of this Ground Lease and Landlord may terminate this Ground Lease pursuant to Article 14. In the event that Landlord terminates this Ground Lease due to a default under this provision, Landlord may deem Tenant a non-responsible bidder for five years from the date this Ground Lease is terminated.

16.34 Berkeley Living Wage Ordinance (LWO).

A. Tenant agrees to comply with Berkeley Municipal Code Chapter 13.27, the Berkeley Living Wage Ordinance. If Tenant employs six or more part-time or full-time employees, and generates $350,000 or more in annual gross receipts, Tenant will be required to provide all eligible employees with City mandated minimum compensation during the Term of this Ground Lease, as defined in B.M.C. Chapter 13.27, and well as comply with the terms enumerated herein.

B. Tenant shall be required to maintain all reasonable records and documents that would establish whether Tenant is subject to Berkeley's Living Wage Ordinance (**"LWO"**). If Tenant is subject to the LWO, as defined therein, Tenant shall be further required to maintain monthly records of those employees located on the leased Premises. These records shall include the total number of hours worked, the number of hours spent providing service on the leased

Premises, the hourly rate paid, and the amount paid by Tenant for health benefits, if any, for each of its employees providing services under the lease. The records described in this Section shall be made available upon the Landlord's request. The failure to produce these records upon demand shall be considered a default, subject to the provisions contained in Article 14 herein.

C. If Tenant is subject to the LWO, Tenant shall include the requirements of the ordinance, as defined in B.M.C. Chapter 13.27, in any and all subleases in which Tenant enters with regard to the subject Premises. Subtenants shall be required to comply with this ordinance with regard to any employees who spend 25% or more of their compensated time on the leased Premises.

D. If Tenant fails to comply with the requirements of the LWO and this Ground Lease, the Landlord shall have the rights and remedies described in this Section, in addition to any rights and remedies provided by law or equity.

E. Tenant's failure to comply with this Section shall constitute a default of the Ground Lease, upon which City may terminate this Ground Lease pursuant to Article 14.

F. In addition, at City's sole discretion, Tenant may be responsible for liquidated damages in the amount of $50 per employee per day for each and every instance of an underpayment to an employee. It is mutually understood and agreed that Tenant's failure to pay any of its eligible employees at least the applicable living wage rate will result in damages being sustained by the City; that the nature and amount of the damages will be extremely difficult and impractical to fix; that the liquidated damages set forth herein is the nearest and most exact measure of damage for such breach that can be fixed at this time; and that the liquidated damage amount is not intended as a penalty of forfeiture for Tenant's breach.

16.35 Berkeley Equal Benefits Ordinance (EBO).

A. Tenant hereby agrees to comply with the provisions of the Berkeley Equal Benefits Ordinance, B.M.C. Chapter 13.29. If Tenant is currently or becomes subject to the Berkeley Equal Benefits Ordinance, Tenant will be required to provide all eligible employees with City mandated equal benefits during the Term of this Ground Lease, as defined in B.M.C. Chapter 13.29, as well as comply with the terms enumerated herein.

B. If Tenant is currently or becomes subject to the Berkeley Equal Benefits Ordinance, Tenant agrees to supply the City with any records the City deems necessary to determine compliance with this provision. Failure to do so shall be a considered a default, subject to the provisions of Article 14.

C. If Tenant fails to comply with the requirements of this Section, City shall have the rights and remedies described in this Section, in addition to any rights and remedies provided by law or equity. Tenant's failure to comply with this Section shall constitute default of the Ground Lease, upon which City may terminate this Ground Lease pursuant to Article 14.

D. In addition, at City's sole discretion, Tenant may be responsible for liquidated damages in the amount of $50.00 per employee per day for each and every instance of violation of this Section. It is mutually understood and agreed that Tenant's failure to provide its employees with equal benefits will result in damages being sustained by City; that the nature and amount of these damages will be extremely difficult and impractical to fix; that the liquidated damages set forth herein is the nearest and most exact measure of damages for such breach that can be fixed at this time; and that the liquidated damage amount is not intended as a penalty or forfeiture for Tenant's breach.

16.36 **Berkeley Marina Zone Worker Retention Ordinance.** As a "Marina Zone Business" (as defined in the Berkeley Marina Zone Worker Retention Ordinance, B.M.C. Chapter 13.25 "Marina Zone Ordinance"), Tenant shall comply with such Ordinance. Without limiting the foregoing, during the Ground Lease Term, Tenant shall cause any "New Operator" (as defined in the Marina Zone Ordinance) to comply with such Ordinance.

16.37 **Pests and Pesticide Management.** All use of pesticides on or about the Premises shall be in compliance with the City of Berkeley's Pest/Pesticide Management Policy.

16.38 **Berkeley Sanctuary City Ordinance. .**

Tenant hereby agrees to comply with the provisions of the Sanctuary City Contracting Ordinance, B.M.C. Chapter 13.105. In accordance with this Chapter, Tenant agrees not to provide the U.S. Immigration and Customs Enforcement Division of the United States Department of Homeland Security with any Data Broker or Extreme Vetting Services as defined herein:

a. "Data Broker" means either of the following: (1)The collection of information, including personal information about consumers, from a wide variety of sources for the purposes of reselling such information to their customers, which include both private-sector business and government agencies; (2) the aggregation of data that was collected for another purpose from that for which it is ultimately used.

b. "Extreme Vetting" means data mining, threat modeling, predictive risk analysis, or other similar services. Extreme Vetting does not include: (1) The City's computer-network health and performance tools; (2) Cybersecurity capabilities, technologies and systems used by the City of Berkeley Department of Information Technology to predict, monitor for, prevent, and protect technology infrastructure and systems owned and operated by the City of Berkeley from potential cybersecurity events and cyber-forensic based investigations and prosecutions of illegal computer-based activity.

16.39 **Audit.** In addition to any other Landlord audit right herein, the City Auditor's Office, or its designee, may conduct an audit of Tenant's financial and compliance records maintained in connection with the operations and services performed under this Ground Lease, and with the payments made under this Ground Lease. In the event of such audit, Tenant agrees to make all such financial and compliance records available to the Auditor's Office, or to its designee. City agrees to provide Tenant an opportunity to discuss and respond to any findings before a final audit report is filed.

16.40 **City Business License, Payment of Taxes, Tax I.D. Number.** Tenant has obtained a City business license as required by B.M.C. Chapter 9.04, and its license number is written below; or, Tenant is exempt from the provisions of B.M.C. Chapter 9.04 and has written below the specific B.M.C. section under which it is exempt. Tenant shall pay all state and federal income taxes and any other taxes due. Tenant certifies under penalty of perjury that the taxpayer identification number written below is correct.

16.41 **Survival.** The provisions of Sections 4.3 (Real Property Taxes), 4.4 Assessments, 5.5 (General Standards of Maintenance), 5.7 (Governmental Requirements), 6.2 (Hazardous Materials), 7.2 (Alterations on Premises), 7.5 (Liens and Stop Notices), 10.2 (Indemnity), 16.7 (Surrender) and any other obligation of Tenant that, by its terms or nature, is to be performed after or is to survive expiration or termination of this Ground Lease, shall survive such expiration or termination.

16.42 **Union Workers.** Tenant is not obligated to hire union workers and nothing in Landlord's labor agreements requires Tenant to hire union workers. So long as Tenant occupies the Premises, Landlord agrees it will not enter into any agreement(s) requiring Tenant to hire union workers

IN WITNESS WHEREOF, Landlord and Tenant have caused this Ground Lease to be executed on their behalf by their respective officers thereunto duly authorized as of the dates set forth below.

[Signature Page Follows]

TENANT:

NFS UNLIMITED, LLC, a Texas limited liability company

By:__________________________________
Steven L. Scheinthal
Vice President

Date:________________________________

LANDLORD:

CITY OF BERKELEY, a public body corporate and politic

By:__________________________________
Dee Williams-Ridley
City Manager

Date:________________________________

Approved as to form:

____
Farimah Brown, City Attorney

Registered by:

____
_____________, City Auditor

Attest:

____
_____________, City Clerk

TENANT INFORMATION

Tax Identification No. 84-3132280
Incorporated: Yes
Certified Woman Business Enterprise: No
Certified Minority Business Enterprise: No
Certified Disadvantaged Business Enterprise: No
City Business License No. ____________, or
Exempt pursuant to B.M.C. Section ____

EXHIBIT A

SITE MAP

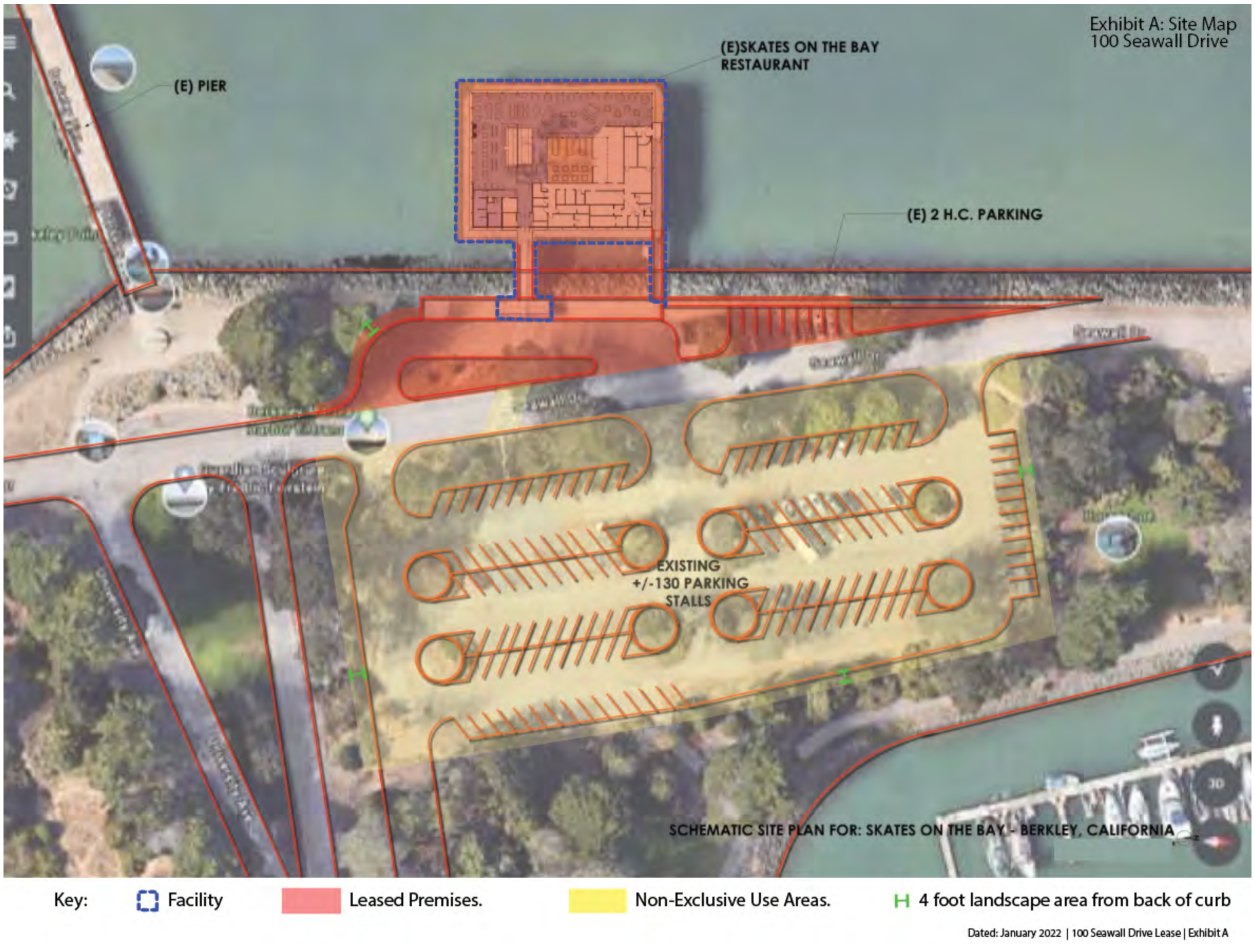

EXHIBIT B

MEMORANDUM OF GROUND LEASE

And When Recorded Mail To: City of Berkeley 2180 Milvia Street, 4th Floor Berkeley, CA 94704 Attn: City Clerk	

(Space Above This Line for Recorder's Use Only)
[Exempt from recording fee per Gov. Code § 27383]

MEMORANDUM OF GROUND LEASE

CITY OF BERKELEY, a public body corporate and politic, as Landlord, has leased to NFS UNLIMITED, LLC, a Texas limited liability company, as Tenant, the real property described described in Exhibit A attached hereto and incorporated herein by this reference (the **"Premises"**).

1. Landlord previously leased to Tenant the Premises upon the terms, covenants, conditions, limitations and restrictions contained in that certain unrecorded Lease between Landlord and Manning's Inc. as "Lessee," dated March 23, 1979, as subsequently amended, assigned and subleased (together, the **"Prior Ground Lease"**). Notice of the Prior Ground Lease is provided by that certain ______________________ dated ____________________, 19__ and recorded in the Official Records of Alameda County as Instrument No. ____________ on _____________, 19__ (the **"Prior Ground Lease Memorandum"**). The prior Ground Lease granted to Tenant the right to use and occupy the Premises until ___________________, 20__.

2. Landlord and Tenant have now entered into that certain unrecorded Ground Lease dated as of _____________, 2022 (the **"Ground Lease"**), pursuant to which Landlord has leased the Premises to Tenant. The Ground Lease grants to Tenant the right to continue to use and occupy the Premises until ________________, 2032. There are two (2) options to extend the term of the Ground Lease for five years each (total 10 years). If Tenant properly exercises all options, the term of the Ground Lease could extend until ______________, 2042.

3. This Memorandum of Ground Lease supersedes and replaces the Prior Ground Lease Memorandum; and this Memorandum of Ground Lease shall provide record notice of the existence of the Ground Lease with respect to the Premises and of Tenant's rights with respect thereto.

[Signature Page Follows]

TENANT:

NFS UNLIMITED, LLC, a Texas limited liability company

By:________________________________
Steven L. Scheinthal
Vice President

Date:_______________________________

LANDLORD:

CITY OF BERKELEY, a public body corporate and politic

By:________________________________
Dee Williams-Ridley
City Manager

Date:_______________________________

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) SS.
COUNTY OF ________________________)

On ________________________ before me, ___________________________________, Notary Public, personally appeared ____, who proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature____

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF TEXAS)
) SS.
COUNTY OF HARRIS)

On ________________________, 2022 before me, ______________________________________, Notary Public, personally appeared Steven L. Scheinthal, who proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Texas that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature____

EXHIBIT C

IMPROVEMENTS

Tenant agrees to complete the following improvements within the Initial Term of this Lease. Cost of these improvements may be eligible for credit against annual rent, as provided in section 3.3.C of the lease.

- **Roof:** Tenant shall replace the building roof. Landlord acknowledges that work is expected to start in 2022, and may be completed prior to this lease execution. Landlord agrees that this work will be eligible for credit against annual rent, as provided in section 3.3.C of the Lease.

- **Parking lot reconstruction:** The parking lot adjacent to the restaurant shall be reconstructed by tenant. This work includes mobilization, traffic control, Storm Water Pollution Prevention Plan, asphalt concrete paving (3 inches), Aggregate Base (9 inches), Pavement marking and striping, curb and gutter, C3 Storm Water Treatment, concrete walkway, trash enclosure relocation and improvements, Americans with Disabilities Act (ADA) curb ramps, construction testing, permits, and similar, construction contingencies, design, construction management and inspection. The parking lot and path of travel adjacent to the restaurant in the Non-Exclusive Use Area depicted in Exhibit A shall be maintained by the tenant for the duration of this lease term and option term, in a manner consistent with section 5.6.

- **Accessibility Improvements:** The following accessibility improvements to will be made in accordance with Table C-1, below:

Table C-1: Accessibility Improvements

ADA Accessability Survey Report for the Berkeley Marina - Recommendations appropriate for Skates to fund | 2021

Record Number		Category	Description	Sub Description	Item	Finding	On Site Finding	Recommendation	Recommended Value	Deviation	Measure Units	Costing Info	Estimated Cost	Code Reference
88446	Photo 1	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Left Accessible Space	ISA is Faded or Damaged	ISA marking is faded and not viewable.	Faded or Damaged	Repaint the ISA marking in the parking space.	See Recommendation			Re-stripe existing parking space	$117.00	ADA 502, CA 11B-502.6
88442	Photo 1	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Left Accessible Space	Outline is Faded, Damaged or Missing	The accessible parking space outline is faded,	Faded or Damaged	Re-stripe the existing parking space marked as accessible to define the	See Recommendation			Re-stripe existing parking space	$350.00	ADA 502, 502.2, CA 11B-502.2
88443	Photo 1	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Left Accessible Space	Parking Space Width	The accessible parking space does not meet the	98.00 inches	Re-stripe the accessible parking space.	At least 108.00 inches	-10.00	inches	Re-stripe existing parking space	$350.00	ADA 502, 502.2, CA 11B-502.2
88444	Photo 1	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Left Accessible Space	Parking Space Slope	The surface of the accessible parking space has a slope	3.70 percent	Pave the parking lot to provide a level surface.	Up to 2.08 percent	1.62	percent	Repave surface to correct slope and re-stripe	$3,800.00	ADA 502, 502.4, CA 11B-502.4
88445	Photo 1	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Left Accessible Space	Access Aisle	There is an accessible parking space designated in the parking lot.	No Access Aisle	Provide a compliant access aisle at the parking space. Parking spaces shall each	See Recommendation			Paint ground markings and install a post mounted sign	$370.00	ADA 502, 502.3, 502.3, CA 11B-502.2
88449	Photo 2	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Right Accessible Space	International Symbol of Access (ISA) is Faded or	ISA marking is faded and not viewable.	Faded or Damaged	Repaint the ISA marking in the parking space.	See Recommendation			Re-stripe existing parking space	$117.00	ADA 502, CA 11B-502.6
88447	Photo 2	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Right Accessible Space	Parking Space Width	The accessible parking space does not meet the minimum requirements for width.	98.00 inches	Re-stripe the accessible parking space.	At least 108.00 inches	-10.00	inches	Re-stripe existing parking space	$350.00	ADA 502, 502.2, CA 11B-502.2
88448	Photo 2	Parking	Parking Lot Next to Seawall Drive	Next to Skates, Right Accessible Space	Access Aisle	There is an accessible parking space designated in the parking lot. There is no access aisle located at the parking space.	No Access Aisle	Provide a compliant access aisle at the parking space. Parking spaces shall each provide an access aisle that may be shared.	See Recommendation			Paint ground markings and install a post mounted sign	$370.00	ADA 502, 502.3, 502.3, CA 11B-502.2
88414	Photo 3	Curb Ramps	Curb Ramp Next to Skates Restaurant - Right		Appurtenances	Utilities, gratings or other appurtenances are located on the curb ramp.	Not Compliant	Provide a compliant curb ramp free of appurtenances.	See Recommendation			Install curb ramp	$1,440.00	ADA 406, CA 11B-406,PROWAG R204
Total:												Total:	$7,264.00	

Exhibit C - Improvements

02

Office of the City Attorney

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council
Madame City Manager

From: Farimah Faiz Brown, City Attorney

Subject: Resolution Making Required Findings Pursuant to the Government Code and Directing City Legislative Bodies to Continue to Meet Via Videoconference and Teleconference

RECOMMENDATION

Adopt a resolution making the required findings pursuant to Government Code Section 54953(e)(3) and determining that as a result of the continued threat to public health and safety posed by the spread of COVID-19, City legislative bodies shall continue to meet via videoconference and teleconference, initially ratified by the City Council on September 28, 2021, and subsequently reviewed and ratified on October 26, 2021, November 16, 2021, December 14, 2021, January 10, 2022, February 8, 2022, and March 8, 2022.

FISCAL IMPACT OF RECOMMENDATION

To be determined.

CURRENT SITUATION AND ITS EFFECTS

The City Council made the initial findings required under the Government Code on September 28, 2021. The Council must make the findings every thirty days in order to continue to meet exclusively through video conference or teleconference.

Pursuant to California Government Code section 8630 and Berkeley Municipal Code Chapter 2.88.040, on March 3, 2020, the City Manager, in her capacity as Director of Emergency Services, proclaimed a local emergency due to conditions of extreme peril to the safety of persons and property within the City as a consequence of the global spread of a severe acute respiratory illness caused by a novel (new) coronavirus (COVID-19), including a confirmed case in the City of Berkeley. As a result of multiple confirmed and presumed cases in Alameda County, the County has declared a local health emergency. On March 4, 2020, Governor Gavin Newsom issued a Proclamation of a State of Emergency due to the spread of COVID-19. On March 10, 2020, the City

Council ratified the Proclamation of Local Emergency with the passage of Resolution No. 69-312.

On March 17, 2020, Governor Newsom signed Executive Order N-29-20, which suspended certain portions of the Ralph M. Brown Act (Cal. Gov. Code § 54950 et seq.) related to the holding of teleconferenced meetings by City legislative bodies. Among other things, Executive Order N-29-20 suspended requirements that each location from which an official accesses a teleconferenced meeting be accessible to the public. These changes were necessary to allow teleconferencing to be used as a tool for ensuring social distancing. City legislative bodies have held public meetings via videoconference and teleconference pursuant to these provisions since March 2020. These provisions of Executive Order N-29-20 will expire on September 30, 2021.

COVID-19 continues to pose a serious threat to public health and safety. There are now over 4,700 confirmed cases of COVID-19 and at least 55 deaths in the City of Berkeley. Additionally, the SARS-CoV-2 B.1.617.2 ("Delta") variant of COVID-19 that is currently circulating nationally and within the City is contributing to a substantial increase in transmissibility and more severe disease.

As a result of the continued threat to public health posed by the spread of COVID-19, state and local officials continue to impose or recommend measures to promote social distancing, mask wearing and vaccination. Holding meetings of City legislative bodies in person would present imminent risks to the health and safety of the public and members of legislative bodies, and therefore public meetings cannot safely be held in person at this time

Assembly Bill 361 (Rivas), signed into law by Governor Newsom on September 16, 2021, amended a portion of the Brown Act (Government Code Section 54953) to authorize the City Council, during the state of emergency, to determine that, due to the spread of COVID-19, holding in-person public meetings would present an imminent risk to the health or safety of attendees, and therefore City legislative bodies must continue to meet via videoconference and teleconference. Assembly Bill 361 requires that the City Council must review and ratify such a determination every thirty (30) days. Therefore, if the Council passes this resolution on March 22, 2022, the Council will need to review and ratify the resolution by April 21, 2022.

This item requests that the Council review the circumstances of the continued state of emergency posed by the spread of COVID-19, and find that the state of emergency continues to directly impact the ability of the public and members of City legislative bodies to meet safely in person, that holding public meetings of City legislative bodies in person would present imminent risks to the health and safety of attendees, and that state and local officials continue to promote social distancing, mask wearing and vaccination. This item further requests that the Council determine that City legislative bodies, including but not limited to the City Council and its committees, and all commissions and boards, shall continue to hold public meetings via videoconference and teleconference, and that City legislative bodies shall continue to comply with all provisions of the Brown Act, as amended by SB 361.

<u>BACKGROUND</u>
On March 1, 2020, Alameda County Public Health Department and Solano County Public Health Department reported two presumptive cases of COVID-19, pending confirmatory testing by the Centers for Disease Control (CDC), prompting Alameda County to declare a local health emergency.

On March 3, 2020, the City's Director of Emergency Services proclaimed a local emergency due to the spread of COVID-19, including a confirmed case in the City of Berkeley and multiple confirmed and presumed cases in Alameda County.

On March 4, 2020, Governor Gavin Newsom issued a Proclamation of a State of Emergency due to the spread of COVID-19.

On March 10, 2020, the City Council ratified the Proclamation of Local Emergency. Since that date, there have been over 4,700 confirmed cases of COVID-19 and at least 57 deaths in the City of Berkeley.

On March 17, 2020, Governor Newsom signed Executive Order N-29-20 which suspended certain portions of the Ralph M. Brown Act (Cal. Gov. Code § 54950 et seq.) to allow teleconferencing of public meetings to be used as a tool for ensuring social distancing. As a result, City legislative bodies have held public meetings via teleconference throughout the pandemic. The provisions of Executive Order N-29-20 allowing teleconferencing to be used as a tool for social distancing will expire on September 30, 2021.

<u>ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS</u>
Not applicable.

<u>RATIONALE FOR RECOMMENDATION</u>
The Resolution would enable the City Council and its committees, and City boards and commissions to continue to hold public meetings via videoconference and teleconference in order to continue to socially distance and limit the spread of COVID-19.

<u>ALTERNATIVE ACTIONS CONSIDERED</u>
None.

<u>CONTACT PERSON</u>
Farimah Brown, City Attorney, City Attorney's Office (510) 981-6998
Mark Numainville, City Clerk, (510) 981-6908

Attachments:1: Resolution Directing City Legislative Bodies to Continue to Meet Via Videoconference and Teleconference

RESOLUTION NO. –N.S.

RESOLUTION MAKING THE REQUIRED FINDINGS PURSUANT TO GOVERNMENT CODE SECTION 54953(E)(3) AND DIRECTING CITY LEGISLATIVE BODIES TO CONTINUE TO MEET VIA VIDEOCONFERENCE AND TELECONFERENCE

WHEREAS, in accordance with Berkeley Municipal Code section 2.88.040 and sections 8558(c) and 8630 of the Government Code, which authorize the proclamation of a local emergency when conditions of disaster or extreme peril to the safety of persons and property within the territorial limits of a City exist, the City Manager, serving as the Director of Emergency Services, beginning on March 3, 2020, did proclaim the existence of a local emergency caused by epidemic in the form of the global spread of a severe acute respiratory illness caused by a novel (new) coronavirus ("COVID-19"), including confirmed cases in California and the San Francisco Bay Area, and presumed cases in Alameda County prompting the County to declare a local health emergency; and

WHEREAS, on March 10, 2020, the City Council ratified the Proclamation of Local Emergency with the passage of Resolution No. 69-312; and

WHEREAS, on March 4, 2020, Governor Gavin Newsom issued a Proclamation of a State of Emergency pursuant to the California Emergency Services Act, in particular, Government Code section 8625; and

WHEREAS, the Proclamation of a State of Emergency issued by Governor Newsom on March 4, 2020 continues to be in effect; and

WHEREAS, on September 16, 2021, Governor Newsom signed into law AB 361, which authorizes the City Council to determine that, due to the continued threat to public health and safety posed by the spread of COVID-19, City legislative bodies shall continue to meet via videoconference and teleconference; and

WHEREAS, the City Council does find that the aforesaid conditions of extreme peril continue to exist, and now include over 4,700 confirmed cases of COVID-19 and at least 55 deaths in the City of Berkeley; and

WHEREAS, the City Council recognizes that the SARS-CoV-2 B.1.617.2 ("Delta") variant of COVID-19 that is currently circulating nationally and within the City is contributing to a substantial increase in transmissibility and more severe disease; and

WHEREAS, as a result of the continued threat to public health posed by the spread of COVID-19, state and local officials continue to impose or recommend measures to promote social distancing, mask wearing and vaccination; and

WHEREAS, holding meetings of City legislative bodies in person would present imminent risks to the health and safety of the public and members of legislative bodies, and therefore public meetings cannot safely be held in person at this time; and

WHEREAS, the City Council made the initial findings required by the Government Code on September 28, 2021; and

WHEREAS, the City Council made subsequent findings required by the Government Code on October 26, 2021, November 16, 2021, December 14, 2021, January 10, 2022, February 8, 2022, March 8, 2022; and

WHEREAS, the City Council will need to again review the need for the continuing necessity of holding City legislative body meetings via videoconference and teleconference by April 21, 2022.

NOW, THEREFORE BE IT RESOLVED by the Council of the City of Berkeley that, pursuant to Government Code section 54953, the City Council has reviewed the circumstances of the continued state of emergency posed by the spread of COVID-19, and finds that the state of emergency continues to directly impact the ability of the public and members of City legislative bodies to meet safely in person, that holding public meetings of City legislative bodies in person would present imminent risks to the health and safety of attendees, and that state and local officials continue to promote social distancing, mask wearing and vaccination.

BE IT FURTHER RESOLVED that City legislative bodies, including but not limited to the City Council and its committees, and all commissions and boards, shall continue to hold public meetings via videoconference and teleconference.

BE IT FURTHER RESOLVED that all City legislative bodies shall comply with the requirements of Government Code section 54953(e)(2) and all applicable laws, regulations and rules when conducting public meetings pursuant to this resolution.

03

Office of the City Attorney

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Farimah Faiz Brown, City Attorney

Subject: Resolution Reviewing and Ratifying the Proclamation of Local Emergency Due to the Spread of a Severe Acute Respiratory Illness Caused by a Novel (New) Coronavirus (COVID-19)

RECOMMENDATION
Adopt a Resolution reviewing the need for continuing the local emergency due to the spread of a severe acute respiratory illness caused by a novel (new) coronavirus (COVID-19) and ratifying the Proclamation of Local Emergency issued by the Director of Emergency Services on March 3, 2020, initially ratified by the City Council on March 10, 2020, and subsequently reviewed and ratified by the Council on April 21, 2020, June 16, 2020, July 28, 2020, September 22, 2020, November 17, 2020, December 15, 2020, February 9, 2021, March 30, 2021, May 25, 2021, July 20, 2021, September 14, 2021, November 9, 2021, December 14, 2021, and February 8, 2022.

FISCAL IMPACT OF RECOMMENDATION
To be determined.

CURRENT SITUATION AND ITS EFFECTS
Pursuant to California Government Code section 8630 and Berkeley Municipal Code Chapter 2.88, on March 3, 2020, the City Manager, in her capacity as Director of Emergency Services, proclaimed a local emergency due to conditions of extreme peril to the safety of persons and property within the City as a consequence of the global spread of a severe acute respiratory illness caused by a novel (new) coronavirus (COVID-19), including a confirmed case in the City of Berkeley. As a result of multiple confirmed and presumed cases in Alameda County, the County has declared a local health emergency. The Proclamation of Local Emergency empowers the Director of Emergency Services to make and issue rules and regulations on matters reasonably related to the protection of life and property as affected by such local emergency. Pursuant to Government Code section 8630(b) and Berkeley Municipal Code section

2.88.040.A.1, on March 10, 2020, the City Council ratified the Proclamation of Local Emergency with the passage of Resolution No. 69-312.

Pursuant to Government Code section 8630(c), the City Council must review the need for continuing the local emergency at least once every sixty (60) days. The Council last reviewed and ratified the Proclamation of Local Emergency on December 14, 2021. The Council therefore must review the continuing need for the local emergency by February 12, 2022.

This item requests that the Council review the continued need for the local emergency and again ratify the Proclamation of Local Emergency issued on March 3, 2020, initially ratified by the Council on March 10, 2020, and subsequently reviewed and ratified by the Council on April 21, 2020, June 16, 2020, July 28, 2020, September 22, 2020, November 17, 2020, December 15, 2020, February 9, 2021, March 30, 2021, May 25, 2021, July 20, 2021, September 14, 2021, November 9, 2021, December 14, 2021, and February 8, 2022. If reviewed and ratified on March 22, 2022, the Council will need to again review and ratify the proclamation by May 21, 2022 in order to continue the local emergency.

If at any time the Council determines that the need for continuing the local emergency has ended, state law directs the Council to terminate the local emergency at the earliest possible date that conditions warrant. (Cal. Gov. Code section 8630(d).)

BACKGROUND

On March 1, 2020, Alameda County Public Health Department and Solano County Public Health Department reported two presumptive cases of COVID-19, pending confirmatory testing by the Centers for Disease Control (CDC), prompting Alameda County to declare a local health emergency.

On March 3, 2020, the City's Director of Emergency Services proclaimed a local emergency due to the spread of COVID-19, including a confirmed case in the City of Berkeley and multiple confirmed and presumed cases in Alameda County.

On March 10, 2020, the City Council ratified the Proclamation of Local Emergency. Since that date, there have been over 5,000 confirmed cases of COVID-19 and at least 55 deaths in the City of Berkeley.

Since April 2021, the highly transmissible SARS-CoV-2 B.1.617.2 ("Delta") variant has been detected in the City of Berkeley and is contributing to substantial levels of community transmission.

The City Council has subsequently reviewed and ratified the Proclamation of Local Emergency on April 21, 2020, June 16, 2020, July 28, 2020, September 22, 2020, November 17, 2020, December 15, 2020, February 9, 2021, March 30, 2021, May 25, 2021, July 20, 2021, September 14, 2021, November 9, 2021, December 14, 2021, and February 8, 2022.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
Not applicable.

RATIONALE FOR RECOMMENDATION
The Resolution would enable the Director of Emergency Services to continue to efficiently allocate resources due to the ongoing and imminent threat to public safety.

ALTERNATIVE ACTIONS CONSIDERED
None.

CONTACT PERSON
Dee Williams-Ridley, City Manager, City Manager's Office (510) 981-7000
Farimah Brown, City Attorney, City Attorney's Office (510) 981-6998

Attachments:
1: Resolution

RESOLUTION NO. –N.S.

RESOLUTION REVIEWING AND RATIFYING THE
PROCLAMATION OF LOCAL EMERGENCY

WHEREAS, the Emergency Services Act, Government Code sections 8558(c) and 8630 authorize the proclamation of a local emergency when conditions of disaster or extreme peril to the safety of persons and property within the territorial limits of a city exist; and

WHEREAS, pursuant to Government Code section 8630, such an emergency may be proclaimed by the governing body or by an official designated by ordinance adopted by the governing body; and

WHEREAS, Berkeley Municipal Code section 2.88.040 provides that the City Manager, serving as the Director of Emergency Services, may request that the City Council proclaim the existence of a local emergency; and

WHEREAS, under provision of local law, if the City Council cannot be convened and, in the judgment of the Director of Emergency Services, the circumstances warrant it, a proclamation of local emergency may be issued which must be ratified or nullified by the City Council within seven days of issuance; and

WHEREAS, in accordance with authority granted under the above provisions of state and local law, the Director of Emergency Services beginning on March 3, 2020 did proclaim the existence of a local emergency caused by epidemic in the form of the global spread of a severe acute respiratory illness caused by a novel (new) coronavirus (“COVID-19”), including confirmed cases in California and the San Francisco Bay Area, and presumed cases in Alameda County prompting the County to declare a local health emergency; and

WHEREAS, on March 10, 2020, the City Council ratified the Proclamation of Local Emergency with the passage of Resolution No. 69-312; and

WHEREAS, Government Code section 8630(c) requires that the City Council review the need for continuing the local emergency at least once every sixty (60) days; and

WHEREAS, the City Council subsequently reviewed the need for continuing the local emergency and again ratified the Proclamation of Local Emergency on April 21, 2020, June 16, 2020, July 28, 2020, September 22, 2020, November 17, 2020, December 15, 2020, February 9, 2021, March 30, 2021, May 25, 2021, July 20, 2021, September 14, 2021, November 9, 2021, December 14, 2021, February 8, 2022; and

WHEREAS, the City Council does find that the aforesaid conditions of extreme peril continue to exist, and now include over 5,000 confirmed cases of COVID-19 and at least 55 deaths in the City of Berkeley, thereby warranting and necessitating the continuation of the local emergency; and

WHEREAS, the City Council will need to again review the need for continuing the local emergency and ratify the Proclamation of Local Emergency by February 12, 2022;

WHEREAS, the City Council recognizes that the SARS-CoV-2 B.1.617.2 (“Delta”) variant of COVID-19 that is currently circulating nationally and within the City is contributing to a substantial increase in transmissibility and more severe disease; and

WHEREAS, on July 16, 2021, in light of the apparent increased transmissibility of the Delta variant, the City of Berkeley recommended that all individuals including fully vaccinated persons wear masks in public indoor settings; and

WHEREAS, on July 26, 2021, the California State Health Officer issued an order requiring vaccination or routine testing of all employees working in high-risk health care and congregate settings, in light of the fact that current requirements of staff in health care settings, such as universal mask requirements for all staff are not proving sufficient to prevent transmission of the more transmissible Delta variant; and

WHEREAS, on July 27, 2021, the CDC updated its guidance for fully vaccinated persons to reflect new evidence regarding the Delta variant, noting that “[i]nfections in fully vaccinated people (breakthrough infections) happen in only a small proportion of people who are fully vaccinated, even with the Delta variant”; and

WHEREAS, on August 2, 2021, the Health Officer for the City of Berkeley issued an order requiring all individuals to wear masks in all indoor public settings; and

WHEREAS, on August 5, 2021, the California State Health Officer issued an order requiring that workers in healthcare settings be fully vaccinated by September 30, 2021; and

WHEREAS, on August 11, 2021, the City announced its intention to implement a vaccination policy for City employees to protect the health and safety of the City of Berkeley’s employees and community members from the imminent and substantial threat to public health and safety posed by the Delta variant; and

WHEREAS, on September 14, 2021, given the increased and unforeseen risk posed by the Delta variant, as compared to earlier variants of the COVID-19 virus previously present in the City of Berkeley, the City Council found that a Citywide vaccination policy protects public health and reduces the risk of substantial harm to City staff and community members that could result from workplace outbreaks caused by the Delta variant; and

WHEREAS, on September 14, 2021, given the urgency posed by the highly transmissible nature of the Delta variant, the City Council recognized the variant’s existence as creating an emergency of grave character and as warranting immediate adoption of a Citywide vaccination policy.

NOW, THEREFORE BE IT RESOLVED by the Council of the City of Berkeley that it is hereby proclaimed and ordered that the Proclamation of Local Emergency, issued by the Director of Emergency Services on March 3, 2020, initially ratified by the City Council on March 10, 2020, and subsequently reviewed and ratified by the City Council on April 21, 2020, June 16, 2020, July 28, 2020, September 22, 2020, November 17, 2020, December 15, 2020, February 9, 2021, March 30, 2021, May 25, 2021, July 20, 2021, September 14, 2021, November 9, 2021, December 14, 2021 and February 8, 2022, has been reviewed and is hereby again ratified and confirmed; and

BE IT FURTHER RESOLVED that during the existence of this local emergency the powers, functions, and duties of the emergency organization of this City shall be those prescribed by state law, and the Charter, ordinances, resolutions and approved plans of the City of Berkeley.

Office of the City Manager

04

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Mark Numainville, City Clerk

Subject: Minutes for Approval

RECOMMENDATION
Approve the minutes for the Council meetings of February 8 (regular), February 15 (closed and special), February 18 (closed), February 22 (regular) and February 24 (closed).

CONTACT PERSON
Mark Numainville, City Clerk, 981-6900

Attachments:
1. February 8, 2022-Regular City Council Meeting
2. February 15, 2022-Closed City Council Meeting
3. February 15, 2022-Special Closed City Council Meeting
4. February 18, 2022-Closed City Council Meeting
5. February 22, 2022- Regular Closed Council Meeting
6. February 24, 2022-Closed City Council Meeting

MINUTES
BERKELEY CITY COUNCIL MEETING
Tuesday, February 8, 2022
6:00 PM

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI
DISTRICT 2 – TERRY TAPLIN
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – RIGEL ROBINSON
DISTRICT 8 – LORI DROSTE

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

Pursuant to Government Code Section 54953(e) and the state declared emergency, this meeting of the City Council will be conducted exclusively through teleconference and Zoom videoconference. The COVID-19 state of emergency continues to directly impact the ability of the members to meet safely in person and presents imminent risks to the health of attendees. Therefore, no physical meeting location will be available.

Live audio is available on KPFB Radio 89.3. Live captioned broadcasts of Council Meetings are available on Cable B-TV (Channel 33) and via internet accessible video stream at http://www.cityofberkeley.info/CalendarEventWebcastMain.aspx.

To access the meeting remotely: Join from a PC, Mac, iPad, iPhone, or Android device: Please use this URL https://us02web.zoom.us/j/83320305084. 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 by rolling over the bottom of the screen.

*To join by phone: Dial **1-669-900-9128 or 1-877-853-5257 (Toll Free)** and enter Meeting ID: **833 2030 5084**. If you wish to comment during the public comment portion of the agenda, Press *9 and wait to be recognized by the Chair.*

Please be mindful that the teleconference will be recorded as any Council meeting is recorded, and all other rules of procedure and decorum will apply for Council meetings conducted by teleconference or videoconference.

To submit a written communication for the City Council's consideration and inclusion in the public record, email council@cityofberkeley.info.

This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Mark Numainville, City Clerk, (510) 981-6900. The City Council may take action related to any subject listed on the Agenda. Meetings will adjourn at 11:00 p.m. - any items outstanding at that time will be carried over to a date/time to be specified.

Preliminary Matters

Roll Call: 6:05 p.m.

Present: Kesarwani, Taplin, Bartlett, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin

Absent: None

Ceremonial Matters:

1. Recognition of Service for Vice-Mayor Droste
2. Adjourned in Memory of Gene Ransom, Local Activist and Coach

City Manager Comments: None

Public Comment on Non-Agenda Matters: 10 speakers.

Consent Calendar

Action: M/S/C (Arreguin/Hahn) to:
1) accept an urgency item from Councilmember Taplin pursuant to Government Code Section 54954.2(b)(2) entitled Adopt a Resolution approving the expenditure of an amount not to exceed $250 per Councilmember, including up to $250 from Councilmember Taplin, to support the Malcolm X Elementary PTA's Read-a-thon program with funds relinquished to the City's general fund; and

2) to accept an urgency item from Councilmember Hahn pursuant to Government Code Section 54954.2(b)(2) entitled Grant Application on behalf of the Commission on the Status of Women (COSOW) to support COSOW and City of Berkeley Priorities.
Vote: All Ayes.

Public Comment on Consent Calendar and Information Items Only: 29 speakers.

Action: M/S/C (Arreguin/Harrison) to adopt the Consent Calendar in one motion except as indicated.
Vote: All Ayes.

Recess: 7:57 p.m. – 8:07 p.m.

Consent Calendar

Urgency Item: Malcolm X Elementary Read-a-thon: Relinquishment of Council Office Budget Funds from General Funds and Grant of Such Funds
Recommendation: Adopt a Resolution approving the expenditure of an amount not to exceed $250 per Councilmember, including up to $250 from Councilmember Taplin, to support the Malcolm X Elementary PTA's Read-a-thon program with funds relinquished to the City's general fund.
Contact: Terry Taplin, Councilmember, District 2, (510) 981-7120
Action: Councilmembers Harrison and Bartlett added as co-sponsors. Adopted Resolution No. 70,205–N.S. amended to include contributions from the following Councilmembers up to the amounts listed: Councilmember Bartlett - $250; Councilmember Robinson - $150; Councilmember Hahn - $200; Councilmember Wengraf - $200

Urgency Item: Grant Application on behalf of the Commission on the Status of Women (COSOW) to support COSOW and City of Berkeley Priorities
Recommendation: Adopt a Resolution authorizing the City Manager or her designee to (1) submit a grant application in the amount of up to $250,000 to the California Commission on the Status of Women and Girls to support COSOW and City of Berkeley priorities, (2) accept any grants, and (3) execute any resulting grant agreements and any amendments; and, subject to securing the grant, authorizing implementation of the grant-funded projects and appropriation of funding for related expenses.
Contact: Sophie Hahn, councilmember, District 5, (510) 981-7150
Action: Adopted Resolution No. 70,206–N.S.

1. **Commission Reorganization: Creating the Environment and Climate Commission**
From: City Manager
Recommendation: Adopt second reading of Ordinance No. 7,796-N.S. adding Berkeley Municipal Code Chapter 3.82 to create the Environment and Climate Commission (ECC).
First Reading Vote: All Ayes.
Financial Implications: See report.
Contact: Jordan Klein, Planning and Development, (510) 981-7400
Action: Adopted second reading of Ordinance No. 7,796–N.S.

Consent Calendar

2. **Response to City Council Action on October 26, 2021 regarding Short Term Referral for Amendments to Accessory Dwelling Unit (ADU) Ordinance**
   From: City Manager
   Recommendation: Adopt second reading of Ordinance No. 7,797-N.S. a local Accessory Dwelling Unit (ADU) Ordinance [Berkeley Municipal Code (BMC) Chapter 23.306] and amendments to relevant Defined Terms [BMC Chapter 23.502.020] in the Zoning Ordinance.
   First Reading Vote: All Ayes.
   Financial Implications: See report.
   Contact: Jordan Klein, Planning and Development, (510) 981-7400
   Action: Adopted second reading of Ordinance No. 7,797–N.S.

3. **Response to City Council Action on October 26, 2021 regarding Short Term Referral for Amendments to Accessory Dwelling Unit (ADU) Ordinance to Address Public Safety Concerns**
   From: City Manager
   Recommendation: Adopt second reading of Ordinance No.7,799-N.S. a local ordinance enacting Chapter 12.99 (Accessory Dwelling Units in Wildfire Hazard Areas) and amending Chapter 23.306.
   Financial Implications: None
   First Reading Vote: All Ayes.
   Contact: Jordan Klein, Planning and Development, (510) 981-7400
   Action: Adopted second reading of Ordinance No. 7,799–N.S. as revised in Supplemental Communications Packet #1 from the City Manager.

4. **Lease and Cooperative Agreement: Downtown Berkeley Bike Station**
   From: City Manager
   Recommendation: Adopt second reading of Ordinance No. 7,798-N.S. authorizing the City Manager to execute a lease agreement with BART for retail space at the Center Street Garage for a fifteen-year lease term commencing February 1, 2021, and expiring on January 31, 2036.
   Financial Implications: See report.
   First Reading Vote: All Ayes.
   Contact: Liam Garland, Public Works, (510) 981-6300
   Action: Adopted second reading of Ordinance No. 7,798–N.S.

Consent Calendar

5. **Resolution Reviewing and Ratifying the Proclamation of Local Emergency Due to the Spread of a Severe Acute Respiratory Illness Caused by a Novel (New) Coronavirus (COVID-19)**
From: City Manager
Recommendation: Adopt a Resolution reviewing the need for continuing the local emergency due to the spread of a severe acute respiratory illness caused by a novel (new) coronavirus (COVID-19) and ratifying the Proclamation of Local Emergency issued by the Director of Emergency Services on March 3, 2020, initially ratified by the City Council on March 10, 2020, and subsequently reviewed and ratified by the Council on April 21, 2020, June 16, 2020, July 28, 2020, September 22, 2020, November 17, 2020, December 15, 2020, February 9, 2021, March 30, 2021, May 25, 2021, July 20, 2021, September 14, 2021, November 9, 2021, and December 14, 2021.
Financial Implications: To be determined
Contact: Farimah Brown, City Attorney, (510) 981-6950
Action: Adopted Resolution No. 70,207–N.S.

6. **Resolution Making Required Findings Pursuant to the Government Code and Directing City Legislative Bodies to Continue to Meet Via Videoconference and Teleconference**
From: City Manager
Recommendation: Adopt a Resolution making the required findings pursuant to Government Code Section 54953(e)(3) and determining that as a result of the continued threat to public health and safety posed by the spread of COVID-19, City legislative bodies shall continue to meet via videoconference and teleconference, initially ratified by the City Council on September 28, 2021, and subsequently reviewed and ratified on October 26, 2021 November 16, 2021, December 14, 2021, and January 10, 2022.
Financial Implications: To be determined
Contact: Farimah Brown, City Attorney, (510) 981-6950
Action: Adopted Resolution No. 70,208–N.S.

7. **Formal Bid Solicitations and Request for Proposals Scheduled for Possible Issuance After Council Approval on February 8, 2022**
From: City Manager
Recommendation: Approve the request for proposals or invitation for bids (attached to staff report) that will be, or are planned to be, issued upon final approval by the requesting department or division. All contracts over the City Manager's threshold will be returned to Council for final approval.
Financial Implications: $4,468,611.
Contact: Henry Oyekanmi, Finance, (510) 981-7300
Action: Approved recommendation.

Consent Calendar

8. **Contract - O2X for Public Safety Wellness Programming**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to execute a contract and any amendments with 02X Human Performance LLC (Contractor) to provide a physical and mental wellness program for the Berkeley Fire & Police Departments (Departments) for a four (4) year base contract period that starts February 9, 2022 and ends on February 8, 2026 in an amount not to exceed $2,712,145 with an option to extend for up to six (6) additional years in two (2) year increments for a total of ten (10) years and not to exceed a total contract amount of $7,948,612.
Financial Implications: See report.
Contact: Abe Roman, Fire, (510) 981-3473
Action: Adopted Resolution No. 70,209–N.S.

9. **Contract – Wildland Res Mgmt. for Community Wildfire Protection Plan (CWPP)**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to execute a contract and any amendments with Wildland Res Mgmt. (Contractor) to provide Community Wildfire Protection Plan and associated analytics for the Berkeley Fire Department (Department) for an initial base contract period of one year, from February 9, 2022 to February 8, 2023 in an amount not to exceed $200,000 with an option to extend for an additional four years in two-year increments and a total not to exceed $400,000.
Financial Implications: See report.
Contact: Abe Roman, Fire, (510) 981-3473
Action: Adopted Resolution No. 70,210–N.S.

10. **Adopt a Resolution Approving Exception to the 180-Day Waiting Period to Hire a CalPERS Retired Annuitant in Accordance With Government Code Sections 7522.56 And 21224**
From: City Manager
Recommendation: Staff respectfully recommends that the City Council adopt a resolution approving an exception to the 180-day waiting period for hiring a retired annuitant as an extra-help employee.
Financial Implications: See report.
Contact: Donald E. Ellison, Human Resources, (510) 981-6800
Action: Item removed from the agenda by the City Manager.

Consent Calendar

11. **Contract No. 31900207 Amendment: Recruiting Advertising and Marketing Strategy for the Berkeley Police Department**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to amend Contract No. 31900207 with Epic Recruiting, to provide additional recruiting and advertising services for police and professional staff vacancies, in an amount not to exceed $120,000 for a total contract amount not to exceed $310,000, and extending the term through April 30, 2023.
Financial Implications: General Fund - $120,000
Contact: Jennifer Louis, Police, (510) 981-5900
Action: Adopted Resolution No. 70,211–N.S.

12. **Resolution supporting immigration reform for the U.S.**
From: Peace and Justice Commission
Recommendation: Adopt a Resolution: 1. Urging President Biden to honor his promise for a humane immigration policy; 2. Calling for a departure from the previous administration's cruelty toward migrant, for protections from deportation, and for a path to permanent residency for protected groups including beneficiaries of DACA, TPS, and DED; 3. Requesting closure of three California ICE detention facilities cited for many rights violations. Copies of this resolution should be sent to President Biden and Berkeley's congressional delegation.
Financial Implications: None
Contact: Okeya Vance-Dozier, Commission Secretary, (510) 981-7100
Action: Adopted Resolution No. 70,212–N.S.

13. **Resolution in Support of Justice for Haitian Refugees**
From: Peace and Justice Commission
Recommendation: Adopt a Resolution calling for an end to all U.S. government deportation efforts against Haitian refugees. Send a letter with the enclosed resolution to President Biden, Senators Feinstein and Padilla, and Congresswoman Barbara Lee.
Financial Implications: Staff time.
Contact: Okeya Vance-Dozier, Commission Secretary, (510) 981-7100
Action: Adopted Resolution No. 70,213–N.S.

14. **Normalize Diplomatic and Economic Relations with Cuba**
From: Peace and Justice Commission
Recommendation: Adopt a Resolution supporting normalization of diplomatic and economic relations between the U.S. and Cuba, initiated by Cuba solidarity organizations in the U.S. Send a letter with the enclosed resolution to President Biden, Secretary of State Antony Blinken, Senators Feinstein and Padilla, and Congresswoman Barbara Lee.
Financial Implications: Staff time.
Contact: Okeya Vance-Dozier, Commission Secretary, (510) 981-7100
Action: Adopted Resolution No. 70,214–N.S.

Consent Calendar

15. **Japanese American Day of Remembrance**
From: Peace and Justice Commission
Recommendation: 1. Adopt a Resolution calling on leaders to denounce anti-Asian racism, and for the City to collaborate with AAPI communities and community-based organizations to promote community building and safety, and to address systemic barriers for reporting anti-Asian hate crimes. 2. Adopt in perpetuity February 19 as the Japanese American Day of Remembrance in Berkeley in recognition of the mass incarceration of Japanese Americans and Japanese Latin Americans during World War II.
Financial Implications: Staff time.
Contact: Okeya Vance-Dozier, Commission Secretary, (510) 981-7100
Action: Adopted Resolution No. 70,215–N.S.

Council Consent Items

16. **Budget Referral and Resolution Establishing City Process for Siting and Developing Public Electric Vehicle DC Fast-charging Hubs**
From: Councilmember Harrison (Author), Mayor Arreguin (Co-Sponsor), Councilmember Bartlett (Co-Sponsor), Councilmember Wengraf (Co-Sponsor)
Recommendation:
1. Adopt a Resolution in support of a non-binding term sheet between the City of Berkeley and East Bay Community Energy (EBCE) to establish a network of publicly available electric vehicle (EV) fast-charging hubs in municipally-owned parking lots and garages in areas with a dense concentration of multifamily housing.
2. Refer to the June, 2022 FY 23-24 budget process $600,000 in General Fund revenues to fund Berkeley's annual maximum Service Fee of $100,000/year per fast-charging hub for three hubs. Once revenues from charging exceed the annual service fee, a portion of revenues will be remitted to the City. Over the 10-year agreement, the City will realize a net gain. Under either a low and high hub utilization scenario, EBCE estimates the City will likely see net profits from Site License Agreement revenue over the ten years estimated at between $50,000 and $851,000. In addition, EBCE estimates that the City is already on track to realize an additional $400,000-$600,000 in Utility User Tax proceeds annually over next 2-3 years under the Renewable 100 portfolio, and that number could grow to up to $1.3 million per year by 2025 assuming EV adoption goals are met.
Financial Implications: See report.
Contact: Kate Harrison, Councilmember, District 4, (510) 981-7140
Action: Moved to Action Calendar. 6 speakers. M/S/C (Hahn/Arreguin) to adopt Resolution No. 70,216–N.S.
Vote: All Ayes.

Action Calendar

17. Berkeley's 2019 Community-Wide Greenhouse Gas Emissions Inventory
(Continued from November 30, 2021)
From: City Manager
Contact: Jordan Klein, Planning and Development, (510) 981-7400
Action: 8 speakers. Presentation made and discussion held.

Action Calendar – Public Hearings

18. ZAB Appeal: 2956 Hillegass Avenue Use Permit #ZP2021-0068
From: City Manager
Recommendation: Conduct a public hearing and, upon conclusion, adopt a Resolution affirming the Zoning Adjustments Board (ZAB) decision to approve Zoning Permit #ZP2021-0068 for the addition of a 170 square foot third-floor balcony to the rear of an existing three-story 2,834 square foot single-family dwelling on a 2,754 square foot lot that is non-conforming to lot coverage.
Financial Implications: None
Contact: Jordan Klein, Planning and Development, (510) 981-7400

Public Testimony: The Mayor opened the public hearing. 2 speakers.
M/S/C (Arreguin/Wengraf) to close the public hearing.
Vote: All Ayes.

Action: M/S/C (Hahn/Wengraf) to adopt Resolution No. 70,217–N.S.
Vote: All Ayes.

Information Reports

19. Update on Berkeley's Redistricting Process for City Council Districts
From: City Manager
Contact: Mark Numainville, City Clerk, (510) 981-6900
Action: Received and filed.

20. Healthy Checkout Ordinance Protocols
From: City Manager
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400
Action: Received and filed.

Public Comment – Items Not Listed on the Agenda - 6 speakers.

Adjournment

Adjourned at 11:00 p.m.

I hereby certify that the foregoing is a true and correct record of the regular session meeting held on February 8, 2022.

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Mark Numainville
City Clerk

Communications

ADU's
1. Jeff White

Alameda County Rent Moratorium
2. Bruce Dodd

Buena Vista Way Repaving
3. Val Cipollone
4. Stefano Della Vigna

City Mobility Improvement
5. Gail Burke (2)

COVID-19
6. Troy Ault

EBCE Community Advisory Committee
7. Newsletter

Homeless
8. Diana

January 18, 2022 Council Meeting
9. Barbara Gilbert (2)

Marin and Spruce
10. Diana Damonte

Plastic Bag Ordinance
11. Jessica Mitchell

Redistricting

12. Jack Kurzweil
13. Sabina McMurtry

RV's
14. Charlene Washington

Stopwaste
15. David Lerman

Tenant Advocacy
16. Robin Fletcher

Tire Replacement
17. Catherine Woolf

UA Homes
18. Benjamin Hubbel

Unfunded CalPERS Liability
19. David Lerman

Supplemental Communications and Reports 1

Item #2: Response to City Council Action of October 26, 2021 Regarding Short Term Referral for Amendments to Accessory Dwelling Unit (ADU) Ordinance
20. Devin Rand-Giovannetti
21. Sheryl Drinkwater
22. Ila Rosenzweig
23. John Litten
24. Shawna Hartman Brotsky
25. Don Read
26. Fan Albritton
27. Thea Daniels
28. Rita Maran
29. Dalia Nagel
30. David Jaffe
31. Jamie Greenwood
32. Jeanette and Jim Cottle

Item #3: Response to City Council Action of October 26, 2021 Regarding Short Term Referral for Amendments to Accessory Dwelling Unit (ADU) Ordinance to Address Public Safety Concerns
33. Supplemental material, submitted by Planning

Item #12: Resolution Supporting Immigration Reform for the U.S.
34. Diana Bohn

Item #18: ZAB Appeal: 2956 Hillegass Avenue Use Permit #ZP2021-0068

35. Mollie and Adam Starr

Item #19: Update on Berkeley's Redistricting Process for City Council Districts

36. Michael Weber
37. Max Ventura
38. Judy Grether
39. Summer Brenner
40. Kitty Calavita
41. Holly Scheider

Supplemental Communications and Reports 2

- **None**

Supplemental Communications and Reports 3

Item #17: Berkeley's 2019 Community-Wide Greenhouse Gas Emissions Inventory

42. Presentation, submitted by Planning and Development

Information Reports

Item #20: Healthy Checkout Ordinance Protocols

43. Ingrid De Santiago, on behalf of Healthy Options at Point of Sale

Urgent Item: Malcolm X Elementary Read-A-Thon: Relinquishment of Council Office Budget Funds from General Funds and Grant of Such Funds

44. Time critical item, submitted by Councilmember Taplin

Urgent Item: Grant Application on behalf of the Commission on the Status of Women (COSOW) to support COSOW and City of Berkeley Priorities

45. Urgent item, submitted by Councilmember Hahn

BERKELEY CITY COUNCIL
SPECIAL MEETING MINUTES

TUESDAY, FEBRUARY 15, 2022

4:00 P.M.

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI
DISTRICT 2 – TERRY TAPLIN
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – RIGEL ROBINSON
DISTRICT 8 – LORI DROSTE

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

Pursuant to Government Code Section 54953(e) and the state declared emergency, this meeting of the City Council will be conducted exclusively through teleconference and Zoom videoconference. The COVID-19 state of emergency continues to directly impact the ability of the members to meet safely in person and presents imminent risks to the health of attendees. Therefore, no physical meeting location will be available.

To access the meeting remotely: Join from a PC, Mac, iPad, iPhone, or Android device: Please use this https://us02web.zoom.us/j/87687340786 *. 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 by rolling over the bottom of the screen.*

To join by phone: Dial ***1-669-900-9128*** *or* ***1-877-853-5257 (Toll Free);*** *enter Meeting ID:* **876 8734 0786**. *If you wish to comment during the public comment portion of the agenda, Press *9 and wait to be recognized by the Chair.*

Please be mindful that the teleconference will be recorded as any Council meeting is recorded, and all other rules of procedure and decorum will apply for Council meetings conducted by teleconference or videoconference.

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Preliminary Matters

Roll Call: 4:03 p.m.

Present: Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin

Absent: Bartlett

Councilmember Bartlett present at 4:10 p.m.

Public Comment - Limited to items on this agenda only – 15 speakers

CLOSED SESSION:

The City Council will convene in closed session to meet concerning the following:

1. **CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(1):**

   a. Case Name: Secure Justice v. City of Berkeley
   Case Number: 21CV003630

   Action: No reportable action taken.

2. **CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(2):**

   a. Significant exposure to litigation – one case

   Action: No reportable action taken.

3. **CONFERENCE WITH LABOR NEGOTIATORS; GOVERNMENT CODE SECTION 54957.6**

   Negotiators: Dee Williams-Ridley, City Manager, Paul Buddenhagen, Deputy City Manager, LaTanya Bellow, Deputy City Manager, Don Ellison, Interim Human Resources Director.

   Employee Organizations: Berkeley Fire Fighters Association Local 1227, Berkeley Fire Fighters Association, Local 1227 I.A.F.F. / Berkeley Chief Fire Officers Association; International Brotherhood of Electrical Workers (IBEW), Local 1245, SEIU 1021 Community Services and Part-time Recreation Activity Leaders, SEIU 1021 Maintenance and Clerical, Public Employees Union Local 1, Unrepresented Employees, Berkeley Police Association.

   Action: No reportable action taken.

OPEN SESSION:

No reportable action taken.

Adjournment

Action: M/S/C (Arreguin/Wengraf) to adjourn the meeting.
Vote: Ayes – Kesarwani, Taplin, Bartlett, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent - Harrison

Adjourned at 6:55 p.m.

Councilmember Harrison absent 6:48 p.m. – 6:55 p.m.

I hereby certify that the foregoing is a true and correct record of the City Council special meeting held on February 15, 2022.

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Michael MacDonald
Assistant City Clerk

MINUTES

SPECIAL MEETING OF THE BERKELEY CITY COUNCIL

Tuesday, February 15, 2022
6:00 PM

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI
DISTRICT 2 – TERRY TAPLIN
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – RIGEL ROBINSON
DISTRICT 8 – LORI DROSTE

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Preliminary Matters

Roll Call: 7:14 p.m.

Present: Kesarwani, Taplin, Bartlett, Hahn, Wengraf, Robinson, Droste, Arreguin

Absent: Harrison

Worksession

1. **Homeless and Mental Health Systems and Services in Berkeley**
   From: City Manager
   Contact: Paul Buddenhagen, City Manager's Office, (510) 981-7000

   Action: 13 speakers. Presentation made and discussion held.

Adjournment

Action: M/S/C (Arreguin/Wengraf) to adjourn the meeting.
Vote: Ayes – Kesarwani, Taplin, Bartlett, Hah, Wengraf, Robinson, Arreguin; Noes – None; Abstain – None; Absent – Harrison, Droste.

Councilmember Droste absent 9:31 p.m. – 9:37 p.m.

Adjourned at 9:37 p.m.

I hereby certify that the foregoing is a true and correct record of the special session meeting held on February 22, 2022.

____
Mark Numainville
City Clerk

Supplemental Communications and Reports 1

- None

Supplemental Communications and Reports 2

- None

Supplemental Communications and Reports 3

Item #1: Homeless and Mental Health Systems and Services in Berkley

1. Presentation, submitted by the City Manager's Office
2. Diana Bohn
3. Moni Law
4. Remi Omodele

BERKELEY CITY COUNCIL SPECIAL MEETING MINUTES

FRIDAY, FEBRUARY 18, 2022

9:00 A.M.

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI
DISTRICT 2 – TERRY TAPLIN
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – RIGEL ROBINSON
DISTRICT 8 – LORI DROSTE

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Preliminary Matters

Roll Call: 9:05 a.m.

Present: Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin

Absent: Bartlett

Councilmember Bartlett present at 11:26 a.m.

Public Comment on Closed Session Item – 2 speakers.

Action: M/S/C (Arreguin/Robinson) to adopt a temporary rule limiting public comment time to one minute per speaker for Item 1.
Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett

OPEN SESSION:

1. **CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(1):**

   a. Supreme Court Case No. S273160: Authorize Amicus Curiae Support of Petition for Review in *Save Berkeley's Neighborhoods v. The Regents of the University of California (American Campus Communities)*

   Action: 27 speakers. M/S/C (Arreguin/Robinson) to authorize the City Attorney to file an Amicus Curiae Support of Petition for Review in *Save Berkeley's Neighborhoods v. The Regents of the University of California (American Campus Communities)*.
   Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

CLOSED SESSION:

The City Council will convene in closed session to meet concerning the following:

2. **CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(1):**

   a. Supreme Court Case No. S273160: Authorize Amicus Curiae Support of Petition for Review in *Save Berkeley's Neighborhoods v. The Regents of the University of California (American Campus Communities)*

   Action: Item moved to Open Session for public comment, discussion, and action.

3. CONFERENCE WITH LABOR NEGOTIATORS; GOVERNMENT CODE SECTION 54957.6

Negotiators: Dee Williams-Ridley, City Manager, Paul Buddenhagen, Deputy City Manager, LaTanya Bellow, Deputy City Manager, Don Ellison, Interim Human Resources Director.

Employee Organizations: Berkeley Fire Fighters Association Local 1227, Berkeley Fire Fighters Association, Local 1227 I.A.F.F. / Berkeley Chief Fire Officers Association; International Brotherhood of Electrical Workers (IBEW), Local 1245, SEIU 1021 Community Services and Part-time Recreation Activity Leaders, SEIU 1021 Maintenance and Clerical, Public Employees Union Local 1, Unrepresented Employees, Berkeley Police Association.

Action: No reportable action taken.

OPEN SESSION:

No reportable action taken on closed session item.

Adjournment

Action: M/S/C (Arreguin/Robinson) to adjourn the meeting.
Vote: Ayes – Kesarwani, Taplin, Bartlett, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Kesarwani, Harrison, Hahn.

Councilmember Harrison absent at 11:58 a.m.

Councilmember Hahn absent at 12:14 p.m.

Councilmember Kesarwani absent at 12:15 p.m.

I hereby certify that the foregoing is a true and correct record of the closed session meeting held on February 18, 2022.

____
Mark Numainville, City Clerk

MINUTES

BERKELEY CITY COUNCIL MEETING

Tuesday, February 22, 2022
6:00 PM

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI
DISTRICT 2 – TERRY TAPLIN
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – RIGEL ROBINSON
DISTRICT 8 – LORI DROSTE

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*To join by phone: Dial **1-669-900-9128 or 1-877-853-5257 (Toll Free)** and enter Meeting ID: **896 6420 6619.** If you wish to comment during the public comment portion of the agenda, Press *9 and wait to be recognized by the Chair.*

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This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Mark Numainville, City Clerk, (510) 981-6900. The City Council may take action related to any subject listed on the Agenda. Meetings will adjourn at 11:00 p.m. - any items outstanding at that time will be carried over to a date/time to be specified.

Preliminary Matters

Roll Call: 6:04 p.m.

Present: Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Arreguin

Absent: Bartlett, Droste

Councilmember Droste present at 6:07 p.m.

Ceremonial Matters:

1. Adjourned the meeting in memory of Mimi Jenkins, City Employee
2. Adjourned the meeting in memory of Ruth Armstrong, Co-Founder of Berkeley Path Wanderers

City Manager Comments:

The City Manager provided updates on the Reimagining Public Safety Task Force, the Chief of Police recruitment, and the Director of Police Accountability recruitment.

Public Comment on Non-Agenda Matters: 5 speakers.

Consent Calendar

Action: M/S/C (Arreguin/Robinson) to accept the following urgency items pursuant to Government Code Section 54954.2(b)(2), and making the findings that there is an urgent need to take action and that the need to take action came to the attention of the local agency after the agenda was published:

- From Mayor Arreguin: Condemning Hate Speech, Anti-Semitism and White Supremacy
- From Councilmember Harrison: Adopt a Resolution in Support of Ukraine, Continued Diplomacy, and Adherence to Constitutional Procedure with Respect to Armed conflict Amidst Ongoing Tensions.
- From the City Manager: Resolution Adopting the Resolution of Intention of Amendment to the Miscellaneous CalPERS Contract Pursuant to California Government Code 20516; Adopt First Ordinance Reading authorizing an amendment to the contract between the City Council of the City of Berkeley and the Board of Administration of the California Public Employees' Retirement System.

Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

Consent Calendar

Action: M/S/C (Arreguin/Hahn) to adopt a temporary rule to set the public speaking time at one minute per speaker, except as during the public hearing.
Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

Public Comment on Consent Calendar and Information Items Only: 59 speakers.

Action: M/S/C (Robinson/Hahn) to adopt the Consent Calendar in one motion except as indicated.
Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

Condemning Hate Speech, Anti-Semitism and White Supremacy
From: Mayor Jesse Arreguín, Councilmembers Susan Wengraf and Sophie Hahn
Recommendation: Adopt a Resolution condemning incidences of hate speech, anti-semitism and white supremacy.
Financial Implications: None.
Contact: Jesse Arreguin, Mayor, (510) 981-7100
Action: Adopted Resolution No. 70,218–N.S.

Adopt a Resolution in Support of Ukraine, Continued Diplomacy, and Adherence to Constitutional Procedure with Respect to Armed Conflict Amidst Ongoing Tensions
From: Councilmember Harrison
Recommendation: Adopt a Resolution in support of Ukraine, continued diplomacy, and adherence to constitutional procedure with respect to potential armed conflict amidst ongoing military tensions. Send copies of the resolution and letters to Senators Feinstein and Padilla, and Congresswoman Lee.
Contact: Kate Harrison, Councilmember, District 4, (510) 981-7140
Action: Adopted Resolution No. 70,219–N.S.

1. **Minutes for Approval**
   From: City Manager
   Recommendation: Approve the minutes for the Council meetings of January 10 (special), January 18 (regular), January 20 (closed and special), January 25 (closed and regular), and January 27 (special).
   Financial Implications: None
   Contact: Mark Numainville, City Clerk, (510) 981-6900
   Action: Approved the minutes as submitted.

Consent Calendar

2. **Formal Bid Solicitations and Request for Proposals Scheduled for Possible Issuance After Council Approval on February 22, 2022**
   From: City Manager
   Recommendation: Approve the request for proposals or invitation for bids (attached to staff report) that will be, or are planned to be, issued upon final approval by the requesting department or division. All contracts over the City Manager's threshold will be returned to Council for final approval.
   Financial Implications: $234,000
   Contact: Henry Oyekanmi, Finance, (510) 981-7300
   Action: Approved the recommendation.

3. **Expenditure Contract: Berkeley Youth Alternatives for Proposition 64 Grant-Proposed Work and Services**
   From: City Manager
   Recommendation: Adopt a Resolution authorizing the City Manager or her designee to execute an expenditure contract and any amendments or extensions with Berkeley Youth Alternatives (BYA) in an amount not to exceed $625,000 for the period March 1, 2022 through April 30, 2024.
   Financial Implications: See report.
   Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400
   Action: Adopted Resolution No. 70,220–N.S.

4. **Contract No. 32000240 Amendment: Berkeley Unified School District (BUSD) for Mental Health MHSA-Funded Programs**
   From: City Manager
   Recommendation: Adopt a Resolution authorizing the City Manager or her designee to execute an amendment to Contract No. 32000240 with Berkeley Unified School District (BUSD) to provide Mental Health Services Act (MHSA) funded programs in local schools through June 30, 2022 in an amount not to exceed $992,778. This amendment will add $355,000 in funding to the contract.
   Financial Implications: See report.
   Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400
   Action: Adopted Resolution No. 70,221–N.S.

5. **Revenue Contract: Department of Health Care Services for $1,000,000 for Crisis Care Mobile Units**
   From: City Manager
   Recommendation: Adopt a Resolution authorizing the City Manager or her designee to accept an award of funding provided by the California Department of Health Care Services (DHCS) through the Crisis Care Mobile Units (CCMU) Program and execute any resultant revenue agreements and amendments to augment the City's investment in piloting and evaluating a Specialized Care Unit (SCU) in an amount up to $1,000,000 through Fiscal Year 2025.
   Financial Implications: See report.
   Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400
   Action: Adopted Resolution No. 70,222–N.S.

Consent Calendar

6. **Meals on Wheels of Alameda County Agency Donations for the Berkeley Meals on Wheels Program**
From: City Manager
Recommendation: Adopt a Resolution accepting a $25,200 donation for the Berkeley Meals on Wheels Program from the Meals on Wheels of Alameda County (MOWAC) agency.
Financial Implications: See report.
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400
Action: Adopted Resolution No. 70,223–N.S.

7. **Amending Berkeley Municipal Code Chapter 4.38, Supplementary Retirement and Income Plan II, to Permit Participation of Berkeley Fire Fighters Association Local 1227 I.A.F.F.**
From: City Manager
Recommendation: Adopt first reading of an Ordinance to amend the Berkeley Municipal Code Chapter (BMC) 4.38, Supplementary Retirement and Income Plan II (SRIP II), to permit participation of Berkeley Fire Fighters Associations Local 1227 I.A.F.F (BFFA).
Financial Implications: See report.
Contact: Donald E. Ellison, Human Resources, (510) 981-6800
Action: Adopt first reading of Ordinance No.7,800–N.S. Second reading scheduled for March 8, 2022.

8. **Grant Application: Clean California Local Grant Program – Civic Center Plaza Turtle Garden Beautification Project**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager or her designee to submit a grant application to the state's Clean California Local Grant Program (CCLGP) for up to $600,000 for the Civic Center Park Turtle Garden Beautification Project, and to accept grant funds, execute resulting grant agreements and amendments, and authorize the implementation of the project and appropriation of funding for related expenses, subject to securing the grant.
Financial Implications: See report.
Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700
Action: Adopted Resolution No. 70,224–N.S.

9. **Donation: Memorial Bench at Cesar Chavez Park in memory of Susan P. Kwong**
From: City Manager
Recommendation: Adopt a Resolution accepting a cash donation in the amount of $3,400 for a memorial bench to be placed at Cesar Chavez Park in memory of Susan P. Kwong.
Financial Implications: $3,400 in revenue
Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700
Action: Adopted Resolution No. 70,225–N.S.

Consent Calendar

10. **Donation: Memorial Bench at the Berkeley Rose Garden in memory of Asia Blau Feese**
From: City Manager
Recommendation: Adopt a Resolution accepting a cash donation in the amount of $3,400 for a memorial bench to be placed at the Berkeley Rose Garden in memory of Asia Blau Feese.
Financial Implications: $3,400 in revenue
Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700
Action: Adopted Resolution No. 70,226–N.S.

11. **Donation: Memorial Bench at Cesar Chavez Park in memory of Anne Rogin Blau**
From: City Manager
Recommendation: Adopt a Resolution accepting a cash donation in the amount of $3,400 for a memorial bench to be placed at Cesar Chavez Park in memory of Anne Rogin Blau.
Financial Implications: $3,400 in revenue
Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700
Action: Adopted Resolution No. 70,227–N.S.

12. **Donation from the Rorick Family Trust for Strawberry Creek**
From: City Manager
Recommendation: Adopt a Resolution accepting a cash donation in the amount of $16,720 for tree planting and picnic tables at Strawberry Creek Park from the Rorick Family Trust.
Financial Implications: $16,720 in revenue
Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700
Action: Adopted Resolution No. 70,228–N.S.

13. **Donation: Memorial Bench at Shorebird Park in memory of Key Slay**
From: City Manager
Recommendation: Adopt a Resolution accepting a cash donation in the amount of $3,400 for a memorial bench to be placed at Shorebird Park in memory of Key Slay.
Financial Implications: $3,400 in revenue
Contact: Scott Ferris, Parks, Recreation and Waterfront, (510) 981-6700
Action: Adopted Resolution No. 70,229–N.S.

Consent Calendar

14. Contracts for Plan Checking Services
From: City Manager
Recommendation: Adopt three Resolutions authorizing the City Manager to execute contracts and any amendments for plan checking services for three-year terms, starting March 1, 2022, with the following firms:
1. Telesis Engineers for an amount not to exceed $1,500,000
2. West Coast Code Consultants for an amount not to exceed $1,500,000
3. TRB and Associates for an amount not to exceed $1,000,000
Financial Implications: See report.
Contact: Jordan Klein, Planning and Development, (510) 981-7400
Action: Adopted Resolution No. 70,230–N.S. for Telesis Engineers; Adopted Resolution No. 70,231–N.S. for West Coast Code Consultants; Adopted Resolution No. 70,232–N.S. for TRB and Associates

15. Contract: Cratus Inc., for Storm Drain Improvements Project: Marin Ave, Virginia Street, Grizzly Peak Blvd. & High Court
From: City Manager
Recommendation: Adopt a Resolution approving plans and specifications for Storm Drain Improvements Project, Marin Avenue, Virginia Street, Grizzly Peak Boulevard& High Court, Specification No. 22-11482-C; accepting the bid of Cratus Inc., as the lowest responsive and responsible bidder; and authorizing the City Manager to execute a contract and any amendments, extensions, or other change orders until completion of the project in accordance with the approved plans and specifications in an amount not to exceed $1,260,000, which includes a 15% contingency of $171,525.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300
Action: Adopted Resolution No. 70,233–N.S.

16. Contract: Cratus, Inc. for Sanitary Sewer Rehabilitation at Various Locations
From: City Manager
Recommendation: Adopt a Resolution approving plans and specifications for the Sanitary Sewer Project, located on Tremont Street, Eton Avenue, Alcatraz Avenue, Mystic Street, Hazel Road, Domingo Road, El Camino Real, El Camino Real Backline, Alvarado Road, Vicente Road, Alvarado Road Backline, Tunnel Road, Roble Court, and Roble Road; accepting the bid of the lowest responsive and responsible bidder, Cratus, Inc.; and authorizing the City Manager to execute a contract and any amendments, extensions, or other change orders until completion of the project in accordance with the approved plans and specifications, in an amount not to exceed $2,590,468, which includes a 10% contingency of $235,497.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300
Action: Adopted Resolution No. 70,234–N.S.

Consent Calendar

17. **Contract: Cratus, Inc. for Sanitary Sewer Rehabilitation at Various Locations on Shattuck Avenue**
From: City Manager
Recommendation: Adopt a Resolution approving plans and specifications for the Sanitary Sewer Project, located on Shattuck Avenue from Derby Street to Allston Way and Shattuck Avenue from University Avenue to Vine Street; accepting the bid of the lowest responsive and responsible bidder, Cratus, Inc.; and authorizing the City Manager to execute a contract and any amendments, extensions, or other change orders until completion of the project in accordance with the approved plans and specifications, in an amount not to exceed $3,873,843, which includes a 10% contingency of $352,167.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300
Action: Adopted Resolution No. 70,235–N.S.

18. **Contract: Koios Engineering, Inc. for Urgent Sewer Repair FY2022 Project**
From: City Manager
Recommendation: Adopt a Resolution approving plans and specifications for the Urgent Sewer Repair FY2022 Project, located throughout the City of Berkeley; accepting the bid of the lowest responsive and responsible bidder, Koios Engineering, Inc.; and authorizing the City Manager to execute a contract and any amendments, extensions, or other change orders until completion of the project in accordance with the approved plans and specifications, in an amount not to exceed $391,872, which includes a 10% contingency of $35,624.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300
Action: Adopted Resolution No. 70,236–N.S.

19. **Contract No. 108090-1 Amendment: IPS Group, Inc. for Parking Meter**
From: City Manager
Recommendation: Adopt a Resolution authorizing the City Manager to amend Contract No. 108090-1 with IPS Group, Inc. to provide parking meters, replacement parts, and support services, increasing the contract amount by an additional $1,891,415 for a total contract amount not to exceed $8,924,872 through June 30, 2024.
Financial Implications: See report.
Contact: Liam Garland, Public Works, (510) 981-6300
Action: Adopted Resolution No. 70,237–N.S.

Council Consent Items

20. **Supporting the Agricultural Labor Relations Voting Choice Act**
From: Mayor Arreguin (Author), Councilmember Taplin (Co-Sponsor), Councilmember Harrison (Co-Sponsor)
Recommendation: Adopt a Resolution in support of the Agricultural Labor Relations Voting Choice Act. Send a copy of the Resolution to Governor Gavin Newsom, State Senator Nancy Skinner, and Assemblymember Buffy Wicks.
Financial Implications: None
Contact: Jesse Arreguin, Mayor, (510) 981-7100
Action: Adopted Resolution No. 70,238–N.S.

21. **Budget Referral: Channing Street Bike Boulevard Improvements**
From: Councilmember Taplin (Author)
Recommendation: That the City Council refers to the FY2023 budget process the funding of the following bicycle and pedestrian improvements along Channing Street:
1. Approx. $200,000 for four (4) Traffic Circles at Seventh Street, Ninth Street, Browning Street, and Bonar Street
2. Approx. $50,000 for one (1) Traffic Diverter at Tenth Street
3. Approx. $500,000 for two (2) Pedestrian Hybrid Beacons (PHB) at San Pablo Avenue and Sacramento Street
4. Approx. $70,000 for Rapid Rectangular Flashing Beacons (RRFB) and a median refuge island at Sixth and Channing Way
Financial Implications: See report.
Contact: Terry Taplin, Councilmember, District 2, (510) 981-7120
Action: Approved recommendation.

22. **Streamlining Toxic Remediation in Manufacturing Districts** *(Reviewed by the Land Use, Housing & Economic Development Policy Committee)*
From: Councilmember Taplin (Author), Councilmember Hahn (Co-Sponsor) Councilmember Bartlett (Co-Sponsor), Mayor Arreguin (Co-Sponsor)
Recommendation: Refer to the City Manager the development of a streamlined process that would allow for one application process, rather than separate application processes for the City's Planning Department and the Toxics Division; and refer to the Planning Commission several amendments to the zoning code in order to facilitate toxic remediation in manufacturing districts; in addition, refer to expedite consideration of Councilmembers Wozniak and Moore's 2012 referral to the Planning Commission referenced in Background section, and request it be moved forward as quickly as possible; in addition, refer to the City Manager to consider any and all means to streamline and/or improve the city's processing of remediation of toxic sites.
Policy Committee Recommendation: On January 20, 2022, the Land Use, Housing & Economic Development Policy Committee took the following action: M/S/C (Hahn/Robinson) Positive recommendation to refer the item to Council as amended to expand the scope of the referral and specifically request expedited Planning Commission review of the previous 2012 referral.
Financial Implications: Staff time
Contact: Terry Taplin, Councilmember, District 2, (510) 981-7120

Council Consent Items

Action: Approved the recommendation of the Land Use, Housing & Economic Development Committee.

23. **Adopt a Resolution in Support of the California State Legislature Introducing and Passing a California Resident-Designated Support Person Act**
From: Councilmember Harrison (Author)
Recommendation: Adopt a resolution in support of the California State Legislature introducing and passing a Resident-Designated Support Person Act. Send copies of the resolution and letters to State Senator Skinner, Assemblymembers Wicks and Bonta.
Financial Implications: See report.
Contact: Kate Harrison, Councilmember, District 4, (510) 981-7140
Action: Adopted Resolution No. 70,239–N.S. as revised in Supplemental Reports and Communications Packet #2 from Councilmember Harrison.

24. **Budget Referral: South Sailing Basin Dredging**
From: Councilmember Robinson (Author), Councilmember Taplin (Author), Councilmember Kesarwani (Author), Mayor Arreguin (Author)
Recommendation: Refer to the City Manager to dredge the Berkeley Marina's South Sailing Basin (SSB), including 1) pursuing and proposing potential funding opportunities for both planning and implementation, and 2) performing the necessary bathymetric, hydrography, technical, permitting, and mitigation studies required to move forward as quickly as possible.
Furthermore, refer $350,000 to the June 2022 budget process for the purposes of South Sailing Basin Dredging planning & evaluation.
Financial Implications: See report.
Contact: Rigel Robinson, Councilmember, District 7, (510) 981-7170
Action: Approved recommendation.

25. **Support for AB 1602: Student Housing Revolving Loan Fund Act**
From: Councilmember Robinson (Author), Councilmember Wengraf (Co-Sponsor), Councilmember Bartlett (Co-Sponsor), Councilmember Harrison (Co-Sponsor)
Recommendation: Send a letter to Assemblymember Kevin McCarty, Senator Nancy Skinner, and Assemblymember Buffy Wicks in support of AB 1602, the California Student Housing Revolving Loan Fund Act of 2022.
Financial Implications: None
Contact: Rigel Robinson, Councilmember, District 7, (510) 981-7170
Action: Approved recommendation.

Action Calendar – Public Hearings

26. ZAB Appeal: 1527 Sacramento Street, Administrative Use Permit #ZP2020-0034
From: City Manager
Recommendation: Conduct a public hearing, and, upon conclusion, adopt a Resolution affirming the Zoning Adjustments Board (ZAB) decision to approve Administrative Use Permit #ZP2020-0034 to: 1) add a 520 square-foot two-story addition with an average height of 21 feet 9 inches at the rear of the existing building; 2) add a major residential addition of more than 15 percent of the lot area, including 44 square feet at the first floor; 3) legalize the enclosure of the front porch in the non-conforming front setback; and 4) add an unenclosed hot tub, on a 2,783 square-foot lot that contains a one-story 824-square-foot single-family dwelling, and dismiss the appeal.
Financial Implications: None
Contact: Jordan Klein, Planning and Development, (510) 981-7400

Public Testimony: The Mayor opened the public hearing. 10 speakers.
M/S/C (Hahn/Arreguin) to close the public hearing.
Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

Action: M/S/C (Kesarwani/Harrison) to adopt Resolution No. 70,240-N.S. affirming the Zoning Adjustments Board (ZAB) decision to approve Administrative Use Permit #ZP2020-0034 to: 1) add a 520 square-foot two-story addition with an average height of 21 feet 9 inches at the rear of the existing building; 2) add a major residential addition of more than 15 percent of the lot area, including 44 square feet at the first floor; 3) legalize the enclosure of the front porch in the non-conforming front setback; and 4) add an unenclosed hot tub, on a 2,783 square-foot lot that contains a one-story 824-square-foot single-family dwelling, and dismiss the appeal.

Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

Action Calendar – New Business

27. Southside Complete Streets Project Conceptual Designs
From: City Manager
Recommendation: Adopt a Resolution approving the conceptual designs for the Southside Complete Streets Project on Dana Street from Dwight Way to Bancroft Way; Bancroft Way from Milvia Street to Piedmont Avenue; Fulton Street from Dwight Way to Bancroft Way; and Telegraph Avenue from Dwight Way to Bancroft Way, and directing the City Manager to direct staff to proceed with the detailed engineering design of the project.
Financial Implications: None
Contact: Liam Garland, Public Works, (510) 981-6300
Action: Moved to Consent Calendar. Adopted Resolution No. 70,241–N.S. as revised in Supplemental Reports and Communications Packet #2 by the City Manager; to adopt the City Manager referral as submitted in Supplemental Reports and Communications Packet #1 from Councilmember Robinson; and to refer the comments from the DBA and the TBID to the City Manager.

Resolution Adopting the Resolution of Intention of Amendment to the Miscellaneous CalPERS Contract Pursuant to California Government Code 20516; Adopt First Ordinance Reading authorizing an amendment to the contract between the City Council of the City of Berkeley and the Board of Administration of the California Public Employees' Retirement System
From: City Manager
Recommendation:
1. Adopt the Resolution of Intention in order to approve the amendment of the contract between the Board of Administration, California Public Employees' Retirement System and the City Council for the City of Berkeley pursuant to California Government Code 20516 to effectuate changes to the cost sharing agreement between the City and PEPRA members of Service Employee International Union, Local 1021 Maintenance and Clerical (SEIU MC), Public Employees Union Local 1 (Local 1), Community Services & Part-Time Recreation Leaders Associations Local 1021 (SEIU CSU/PTRLA), and the Unrepresented Employees Group.
2. Adopt first reading of an Ordinance amending the City's contract with CalPERS to effectuate changes to the cost sharing agreement between the City and PEPRA members of Service Employee International Union, Local 1021 Maintenance and Clerical (SEIU MC), Public Employees Union Local 1 (Local 1), Community Services & Part-Time Recreation Leaders Associations Local 1021 (SEIU CSU/PTRLA), and the Unrepresented Employees Group.
Financial Implications: See report.
Contact: Donald E. Ellison, Interim Director of Human Resources, 981-6807
Action: 2 speakers. M/S/C (Arreguin/Wengraf) to adopt Resolution No. 70,242–N.S. and to adopt first reading of Ordinance No. 7,801-N.S. Second reading scheduled for March 8, 2022.
Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Arreguin; Noes – None; Abstain – None; Absent – Bartlett, Droste.

Action Calendar – New Business

28. Resolution Adopting the Resolution of Intention of Amendment to the Miscellaneous CalPERS Contract Pursuant to California Government Code 20516
From: City Manager
Recommendation: Adopt the Resolution of Intention in order to approve the amendment of the contract between the Board of Administration, California Public Employees' Retirement System and the City Council for the City of Berkeley pursuant to California Government Code 20516 to effectuate changes to the cost sharing agreement between the City and PEPRA members of Service Employee International Union, Local 1021 Maintenance and Clerical (SEIU MC), Public Employees Union Local 1 (Local 1), Community Services & Part-Time Recreation Leaders Associations Local 1021 (SEIU CSU/PTRLA), and the Unrepresented Employees Group.
Council adopted Resolution #70,156-N.S. at its December 14, 2021 meeting authorizing an amendment to the City's CalPERS Miscellaneous contract. Council must now pass a Resolution of Intention in order to approve the amendment to the contract between the City and the Board Administration of the Public Employees' Retirement System
Financial Implications: See Report.
Contact: Don Ellison, Human Resources, (510) 981-6807
Action: Item removed from the agenda by City Manager.

Information Reports

29. City Council Short Term Referral Process – Quarterly Update
From: City Manager
Contact: Mark Numainville, City Clerk, (510) 981-6900
Action: Received and filed.

30. Age-Friendly Berkeley Update
From: City Manager
Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400
Action: Received and filed.

31. LPO NOD: 1325 Arch Street – Application LMSAP2021-0003
From: City Manager
Contact: Jordan Klein, Planning and Development, (510) 981-7400
Action: Received and filed.

32. Update on the Implementation of Fair and Impartial Policing Task Force Recommendations
From: City Manager
Contact: Jennifer Louis, Police, (510) 981-5900
Action: Moved to Action Calendar. M/S/C (Arreguin/Harrison) to schedule Item 32 for the March 8, 2022 meeting.

Information Reports

Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Bartlett.

33. 2021 Year End Crime and Collision Data
From: City Manager
Contact: Jennifer Louis, Police, (510) 981-5900
Action: Scheduled for March 8, 2022.

Public Comment – Items Not Listed on the Agenda – 2 speakers.

Adjournment

Action: M/S/C (Arreguin/Hahn) to adjourn the meeting.
Vote: Ayes – Kesarwani, Taplin, Harrison, Hahn, Wengraf, Robinson, Arreguin; Noes – None; Abstain – None; Absent – Bartlett, Droste.

Adjourned at 9:14 p.m.

I hereby certify that the foregoing is a true and correct record of the regular session meeting held on February 22, 2022.

____
Mark Numainville
City Clerk

Communications

Council rules limit action on Communications to referral to the City Manager and/or Boards and Commissions for investigation and/or recommendations. All communications submitted to Council are public record.

Item #25: Support for AB 1602: Student Housing Revolving Loan Fund Act
1. Grayson Peters
2. Riya Master
3. Tomas Castro
4. Sammy Raucher
5. Stephanie Wong
6. Marisol Medina
7. Cerys Rotondo
8. Jalen Gooch
9. Kendalyn Smith
10. Samuel Groven
11. Jerry Xu

12. Avram Gur Arye

Item #27: Southside Complete Streets Project Conceptual Designs
13. Marc Hedlund
14. Carol Denney

City Management Not Being Truthful
15. Nathan Dahl

Plastic Bag Ordinance
16. Heather Phipps

Milvia Bike Infrastructure
17. Kendra Levine
18. Erika Shore (2)

4-Hour Parking Limits Near Gilman Street
19. Ryan Thomas on behalf of Bolt Lighting Rentals

Graffiti
20. David Lerman

Tenants Opportunity to Purchase Act (TOPA)
21. Elania Nanopoulos
22. Diana Bohn
23. Alan Thomsen
24. Donna Carter

Wood Burning
25. David Lerman

Keep Our Patrol Officers
26. Robin Kibby

Public Commenters
27. Barbara Gilbert

Housing Scarcity
28. Charles Clarke

Confederated Villages of Lisjan Tribe
29. Corrina Gould, Tribal Chair

Planning to Attend Meeting
30. Kirk

Tibetan Uprising Day
31. Tenzin Lungrig, on behalf of the Tibetan Association

Peace Teacher: Thich Nhat Hanh
32. Chimey Lee

Splitting South Berkeley
33. Diana Bohn

Accessing Infrastructure Funds
34. Dan Smuts

Heaters for the Unhoused
35. Summer Brenner

Affordable Healthcare Now
36. Senator Nancy Skinner

East Bay Community Energy
37. EBCE (2)

URL's Only
38. Vivian Warkentin

Honoring Labor Contract Rights – SEIU 1021
39. Alberto Flores
40. Jacob Kahn

Supplemental Communications and Reports 1

Item #24: Budget Referral: South Sailing Basin Dredging
41. Robert Ofsevit
42. Nick Goyhenetche

Item #26: ZAB Appeal: 1527 Sacramento Street, Administrative Use Permit #ZP2020-0034
43. Joyce Lewis (2)
44. Vivian Pisano

Item #27: Southside Complete Streets Project Conceptual Designs
45. Supplemental material, submitted by Councilmember Robinson

Supplemental Communications and Reports 2

Item #21: Budget Referral: Channing Street Bike Boulevard Improvements
46. Tom Lent

Item #23: Adopt a Resolution in Support of the California State Legislature Passing AB-2546, the California Resident-Designated Support Persons Act
47. Revised material, submitted by Councilmember Harrison

Item #26: ZAB Appeal: 1527 Sacramento Street, Administrative Use Permit #ZP2020-0034
48. Norman and Gina Gold
49. Anna Talamo (2)
50. Richard and Marla Faszholz
51. Kay Schwartz
52. Hillary Brooks

Item #27: Southside Complete Streets Project Conceptual Designs
53. Revised material, submitted by Public Works
54. John Caner, on behalf of the Downtown Berkeley Association
55. Alex Knox, on behalf of the Telegraph Business Improvement District
56. Charles Siegel
57. Daryl Ross
58. Julie Saxe-Taller
59. Bhima Sheridan
60. Wesley Tam
61. Telegraph for People
62. Greg Magofna, on behalf of East Bay for Everyone
63. Emily Mullin
64. Tom Lent
65. Jesse Greenspan

Supplemental Communications and Reports 3

Item #24: Budget Referral: South Sailing Basin Dredging
66. Camille Antinori
67. Nicholas Waton

Action Calendar – New Business

Item #27: Southside Complete Streets Project Conceptual Designs
68. Jordan Burns
69. Dave Campbell, on behalf of Bike East Bay
70. Daryl Ross, on behalf of Caffe Strada
71. Ben Paulos
72. Michelle and Alex Bergtraun
73. Ryan Lau, on behalf of AC Transit

Information Reports

Item #33: 2021 Year End Crime and Collision Data
74. Charles Clarke

Urgency Items

Condemning Hate Speech, Anti-Semitism and White Supremacy
75. Urgent item, submitted by Mayor Arreguin
76. Eric Friedman

Adopt a Resolution in Support of Ukraine, Continued Diplomacy, and Adherence of Constitutional Procedure with Respect to Amend Conflict Amidst Ongoing Tensions
77. Urgent item, submitted by Councilmember Harrison

Resolution Adopting the Resolution of Intention of Amendment to the Miscellaneous CalPERS Contract Pursuant to California Government Code 20516; Adopt First Ordinance Reading authorizing an amendment to the contract between the City Council of the City of Berkeley and the Board of Administration of the California Public Employees' Retirement System
78. Urgent item, submitted by Human Resources

BERKELEY CITY COUNCIL
SPECIAL MEETING MINUTES

THURSDAY, FEBRUARY 24, 2022

5:00 P.M.

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI
DISTRICT 2 – TERRY TAPLIN
DISTRICT 3 – BEN BARTLETT
DISTRICT 4 – KATE HARRISON
DISTRICT 5 – SOPHIE HAHN
DISTRICT 6 – SUSAN WENGRAF
DISTRICT 7 – RIGEL ROBINSON
DISTRICT 8 – LORI DROSTE

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

Pursuant to Government Code Section 54953(e) and the state declared emergency, this meeting of the City Council will be conducted exclusively through teleconference and Zoom videoconference. The COVID-19 state of emergency continues to directly impact the ability of the members to meet safely in person and presents imminent risks to the health of attendees. Therefore, no physical meeting location will be available.

To access the meeting remotely: Join from a PC, Mac, iPad, iPhone, or Android device: Please use this https://us02web.zoom.us/j/81503774444. *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 by rolling over the bottom of the screen.*

To join by phone: Dial ***1-669-900-9128*** *or* ***1-877-853-5257 (Toll Free);*** *enter Meeting ID:* **815 0377 4444**. *If you wish to comment during the public comment portion of the agenda, Press *9 and wait to be recognized by the Chair.*

Please be mindful that the teleconference will be recorded as any Council meeting is recorded, and all other rules of procedure and decorum will apply for Council meetings conducted by teleconference or videoconference.

To submit a written communication for the City Council's consideration and inclusion in the public record, email *council@cityofberkeley.info*.

Preliminary Matters

Roll Call: 5:04 p.m.

Present: Harrison, Hahn, Wengraf, Robinson, Droste, Arreguin

Absent: Kesarwani, Taplin, Bartlett

Public Comment - Limited to items on this agenda only – 0 speakers

CLOSED SESSION:

The City Council will convene in closed session to meet concerning the following:

1. **CONFERENCE WITH REAL PROPERTY NEGOTIATORS PURSUANT TO GOVERNMENT CODE SECTION 54956.8**

Property address:	1461 University Avenue, Berkeley, CA 94702
Agency Negotiators:	Dee Williams-Ridley, City Manager; Paul Buddenhagen, Deputy City Manager
Negotiating parties:	City of Berkeley and Shree Jalasai Lodging, LP dba Rodeway Inn, Berkeley
Property owner:	City of Berkeley
Under negotiation:	Price and terms

Action: No reportable action taken.

2. **CONFERENCE WITH LABOR NEGOTIATORS; GOVERNMENT CODE SECTION 54957.6**

Negotiators: Dee Williams-Ridley, City Manager, Paul Buddenhagen, Deputy City Manager, LaTanya Bellow, Deputy City Manager, Don Ellison, Interim Human Resources Director, Abe Roman, Fire Chief.

Employee Organizations: Berkeley Fire Fighters Association Local 1227, Berkeley Fire Fighters Association, Local 1227 I.A.F.F. / Berkeley Chief Fire Officers Association.

Action: No reportable action taken.

OPEN SESSION:

No reportable action taken.

Adjournment

Action: M/S/C (Arreguin/Robinson) to adjourn the meeting.
Vote: Ayes – Hahn, Wengraf, Robinson, Droste, Arreguin; Noes – None; Abstain – None; Absent – Kesarwani, Taplin, Bartlett, Harrison.

Adjourned at 5:50 p.m.

I hereby certify that the foregoing is a true and correct record of the closed session meeting held on February 24, 2022.

Mark Numainville, City Clerk

05

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Eleanor Hollander, Economic Development Manager

Subject: Amendment to the Berkeley Revolving Loan Fund Administrative Plan to allow management of the COVID-19 Resiliency Loan Program (RLP) by Working Solutions, a certified Community Development Financial Institution; Authorize a $60,000 contract with Working Solutions to provide technical assistance and small business support to Berkeley's RLP participants

RECOMMENDATION

Adopt two Resolutions:

1. Approving changes to the Administrative Plan of the Berkeley Revolving Loan Fund (RLF) to allow for third party administration of the COVID-19 Resiliency Loan Program (RLP).

2. Authorizing the City Manager to execute a sole source contract and any amendments with Working Solutions, a certified Community Development Financial Institution, not to exceed $60,000 of ARPA funds to provide additional small business support and technical assistance to Berkeley's RLP participants for the period beginning March 31, 2022 through the five-year term of the RLP loan repayments (anticipated ending date December 31, 2027).

FISCAL IMPACTS OF RECOMMENDATION

There is no immediate fiscal impact in approving the revised RLF Administrative Plan. Over time, staff anticipates that the modification of the RLF Administrative Plan will result in the origination of significantly more loans from the RLP program and an increased economic benefit to the City as a whole due to the potential creation of new Berkeley businesses and business licenses. The RLP program was established in July 2020 with funds from the federal CARES Act Recovery Assistance Grant. The $60,000 contract for small business support and technical assistance to RLP participants will be underwritten in full by funds from the federal American Rescue Plan Act (ARPA).[1]

[1] A portion of Berkeley's ARPA funds were identified for small business support and approved by the Berkeley City Council with the FY22 Budget, June 29, 2021.

CURRENT SITUATION AND ITS EFFECTS

In July of 2020, the City of Berkeley was granted $814,000 of Economic Development Administration (EDA) Coronavirus Aid, Relief, and Economic Security (CARES) Act recovery assistance funding to administer and provide small business loans to coronavirus-impacted businesses in Berkeley. Berkeley's existing Revolving Loan Fund (RLF) Administrative Plan and program were modified to accept the EDA CARES Act grant, and to establish a second loan fund, the COVID-19 Resiliency Loan Program (RLP).[2]

The COVID-19 Resiliency Loan Program's (RLP) goal is to provide low interest rate loans to Berkeley businesses negatively impacted by the COVID-19 pandemic. To date, 11 RLP loans (totaling $520,000) have been granted and disbursed to Berkeley businesses in need of support. This task was accomplished with extensive staff time from the Office of Economic Development (OED); and the loan underwriting support services from the Bay Area based non-profit, Working Solutions. Working Solutions is a certified Community Development Financial Institution (CDFI) that specializes in financial services, technical support, lending, and loan servicing for small businesses.

In order to comply with the terms of the EDA CARES Act grant, the City is obligated to disburse the remaining RLP loan fund balance by July 2022, as well as service the existing 11 RLP loans. The executed RLP loans are slated to begin repaying in May of 2022; and staff has identified a critical need to increase loan servicing and lending capacity rapidly. As Working Solutions specifically provided the city (including the Loan Administration Board) with the capacity to complete the RLP loan application reviews and underwriting services for the 11 existing RLP loans, and has proven expertise administering revolving loan funds for other Bay Area cities including San Francisco and Oakland, staff recommends that the remaining balance of the RLP award be transferred to Working Solutions through a sub-grantee award agreement certified by the EDA.

By executing a sub-grantee award agreement, a qualified third party may review, approve, and service the existing and future loans in the RLP program in partnership with the City of Berkeley. The sub-grantee award agreement will not impact costs to Berkeley borrowers (RLP program participants), and additional funding will be provided in a separate contract for Working Solutions to provide enhanced technical assistance for RLP loan recipients. Together these actions will provide for a vastly improved experience for loan applicants, program participants, Loan Administration Board (LAB) advisors, and program staff.

In order to facilitate this process, the RLF Administrative Plan must be amended to allow for a third-party administrator of the RLP loan fund to be approved by the LAB

[2] Addendum to the Berkeley Revolving Loan Fund (RLF) Administrative Plan to augment the RLF with a COVID-19 Resiliency Loan Program, Item 4, Berkeley City Council Meeting, October 17, 2020.

(achieved January 27, 2022), ratified by the City Council, and accepted by the U.S. EDA, the federal governing body for all Revolving Loan Fund programs.

Loan Administration Board (LAB) Action
On January 27, 2022, the LAB reviewed and approved the proposed amendments to the RLF Administrative Plan to allow a third-party administrator to govern the origination and servicing of the RLP loans.[3] The full text of the revised RLF Administrative Plan is provided (Exhibit A) and the changes to the document are noted on pages 7 and 23-25. The modifications to the RLP lending criteria, borrower description, and loan terms, include removing the cap on number of employees (previously 50) and striking the business tenure requirement (previously 2 years). In addition, the RLP application fee has been adjusted down to $50 to align with the RLF "legacy" loan program, and the RLP interest rates have been set to be between 1-7% to align with the current interest rate set for legacy RLF loans which is set at the prime interest rate[4] plus 2 points (currently 5.25%).

Next Steps
The EDA requires that the City of Berkeley, in addition to the Loan Administration Board, adopt the attached resolution presenting the revised RLF Administrative Plan which allows for a third party, Working Solutions, a qualified CDFI lender, to govern the origination and servicing of the *COVID-19 Resiliency Loan Program (*RLP) loans.

In addition, to enhance the Berkeley borrowers lending experience, and to help provide for a successful program transfer, a new separate contract with Working Solutions must be established through the term of the existing RLP loans (5 years). The attached resolution authorizes the City Manager to execute a sole source contract and any amendments with Working Solutions, a certified Community Development Financial Institution, not to exceed $60,000 of American Rescue Plan Act (ARPA) funds to provide additional small business support and technical assistance to Berkeley's RLP participants for the period beginning March 31, 2022 through December 31, 2027.

BACKGROUND
In 1980, the City of Berkeley received a $500,000 grant from the EDA, a federal agency operating underneath the auspices of the Department of Commerce. The grant was issued to administer a commercial revolving loan fund to all eligible small businesses in the fund's Target Area, which at the time of the award was a small geographic area of approximately 35 blocks in South Berkeley. Since then, the program has expanded twice geographically, including the 2010 expansion to the City's borders, making the loan program available to all business (including non-profits) located in the City of Berkeley.

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[3] Loan Administration Board, Meeting Minutes (1/27/22), motion by Board Member Illgen (M), Seconded by Board Member Shoaf (S). Vote: 7- Ayes -0 Nays -0 Abstentions.
[4] View current prime rate here: https://www.bankrate.com/rates/interest-rates/prime-rate.aspx.

The City of Berkeley RLF program offers loans to businesses with interest rates and terms that are below market. Loans are available for use in funding business expansion, fixed assets, equipment, working capital, and real estate. As loan recipients make payments on an issued loan, these funds are used to provide additional loans to new loan recipients; in that way, the fund ‘revolves’ over time. The principal goals of the RLF are to support the creation and retention of permanent full-time jobs, facilitate investment and commercial growth, and direct economic development efforts at revitalizing commercial corridors and businesses throughout the City of Berkeley.

The LAB, a City of Berkeley Commission appointed by the Mayor and City Council, provides oversight for the RLF program. Office of Economic Development (OED) staff serves as the secretary to the LAB commission, and the LAB meetings are open to the public and subject to the Brown Act. There are special criteria for the LAB members; of the nine seated commissioners, two must have demonstrated business expertise, three must have credit and banking experience, and one must be a lawyer. The LAB outlines policy, guidelines and lending criteria articulated in the Berkeley RLF Administrative Plan based on EDA’s Terms and Conditions. Final approval for all loans, including determination of the loan amount, rests with the LAB, informed by recommendations issued from a contracted third-party underwriter. The maximum allowable size of any one loan can only be 25% of the RLF’s capital base at the time of the loan.

The loan fund is designed as a tool for equitable economic development; ideal borrowers are businesses that provide services or jobs for people in low-income communities, and women- and minority-owned businesses. The fund is primarily intended to provide financing for businesses that are unable to secure traditional private financing. In 2019, the City Council approved an addendum to the RLF Administrative Plan to make the RLF more accessible to worker owned cooperatives seeking to obtain financing.[5] With the outbreak of COVID-19 in early 2020 many Berkeley businesses faced revenue shortfalls that compromised their ability to cover operating expenses like payroll, rent, loan payments, and utilities. To respond, the City of Berkeley applied for a federal EDA CARES Act Recovery Assistance Grant to further capitalize the City’s existing RLF program.

On July 29, 2020 the City of Berkeley was granted $814,000 of EDA CARES Act funding to further capitalize and administer the RLF to provide small business loans to coronavirus-impacted businesses in Berkeley. Subsequently, the RLF Administrative Plan was amended and approved first by the LAB and then by the City Council and on October 17, 2020 a new program, the RLP, was established.[6] The RLP’s goal is to provide low interest rate loans to Berkeley businesses negatively impacted by the

[5] Referral Response: Supporting Worker Cooperatives, Item 22, Berkeley City Council Meeting, February 19, 2019

[6] Addendum to the Berkeley Revolving Loan Fund (RLF) Administrative Plan to augment the RLF with a COVID-19 Resiliency Loan Program, Item 4, Berkeley City Council Meeting, October 17, 2020.

COVID-19 pandemic. To date, 11 RLP loans (totaling $520,000) have been granted and disbursed to Berkeley businesses in need of support.

Under the RLF's Administrative Plan, up to 50% of interest payments on outstanding loans can be used to pay for program marketing or administrative costs including retaining the services of a professional underwriter. Since 2018, Working Solutions has been under contract to serve in this role. The City of Berkeley performs the loan servicing in house for the RLF loans (in collaboration with the departments of Health Housing and Community Services, Finance, and the Office of Economic Development) using software licensed from Grants Management System (GMS). The RLF Program is subject to the single audit review of the City's federally funded programs performed by outside auditors.

ALTERNATIVE ACTIONS CONSIDERED
In the absence of a servicing provider and assistance through a third party, the City of Berkeley would possibly have to return the full balance of the undeployed RLP funds to the EDA grantor due to lack of capacity.

CONTACT PERSON
Eleanor Hollander, Economic Development Manager, 510-981-7536
Kieron Slaughter, Chief Strategist, Economic Innovation, 510-981-2490

Attachments:
1. Resolution
   Exhibit A: Berkeley RLF Administrative Plan with revised COVID-19 Resiliency Loan Program Addendum, approved by the Loan Administration Board, January 2022.
2. Resolution Authorizing the City Manager to Execute a Contract with Working Solutions using ARPA funds to provide additional small business support and technical assistance to Berkeley's COVID-19 Resiliency Loan Program (RLP) participants.

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

APPROVING AN AMMENDMENT TO THE BERKELEY REVOLVING LOAN FUND (RLF) ADMINISTRATIVE PLAN TO ALLOW FOR THE THIRD-PARTY ADMINISTRATION OF THE COVID-19 RESILIENCY LOAN PROGRAM (RLP)

WHEREAS, the City of Berkeley received a $500,000 grant from the federal Economic Development Administration (EDA) in 1980 to administer a commercial Revolving Loan Fund (RLF) for eligible businesses in the South Berkeley Target Area; and

WHEREAS, the City approved revisions to the RLF Administrative Plan in 2005 and 2010, which included two expansions of the original target lending area to the entire City; and

WHEREAS, in the year 2020, the City of Berkeley received an additional $814,000 grant from the federal Economic Development Administration (EDA) funded by the CARES Act to swiftly provide low interest rate loans to Berkeley businesses negatively impacted by the COVID-19 pandemic; and

WHEREAS, the City of Berkeley approved a revision to the RLF Administrative Plan in 2020, which permitted the City to create and administer the COVID-19 Resiliency Loan Program (RLP) to disburse such funds; and

WHEREAS, in order to comply with the terms of the EDA CARES Act grant which funded the RLP, the City is obligated to disburse the remaining RLP loan fund balance by July of 2022, as well as service the existing 11 RLP loans which are slated to begin repaying in May of 2022; and

WHEREAS, there is critical need to increase loan servicing and lending capacity rapidly, and Working Solutions, a CDFI lender, has proven expertise administering revolving loan and grant funds for other Bay Area cities including San Francisco and Oakland, and has provided underwriting services for the 11 executed RLP loans; and

WHEREAS, the remaining balance of the RLP award can be transferred to a third-party administrator through a sub-grantee award agreement certified by the EDA; and

WHEREAS, on January 27, 2022, the Loan Administration Board approved the recommended amendments to the RLF Administrative Plan to permit third party review, approval and servicing of the COVID-19 resiliency loan program (RLP).

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley hereby approves the revised Administrative Plan for the Berkeley Revolving Loan Fund as required by the Economic Development Administration (EDA). A copy of said Plan shall be placed on file with the City Clerk.

Exhibits
A: Berkeley RLF Administrative Plan with revised COVID-19 Resiliency Loan Program (RLP) Addendum, approved by the Loan Administration Board, January 2022

City of Berkeley Revolving Loan Fund Administrative Plan

OFFICE OF ECONOMIC DEVELOPMENT

CITY OF BERKELEY, CA

1/27/2022

CITY OF BERKELEY REVOLVING LOAN FUND ADMINSTRATIVE PLAN

EDA #07-39-02523

Approved by the Loan Administration Board,

Adopted by Berkeley City Council Resolution No.______–N.S.,

Approved by the Economic Development Administration

TABLE OF CONTENTS

PART 1: THE REVOLVING LOAN FUND (RLF) STRATEGY

The RLF is designed to address areas of economic distress in the City of Berkeley and help implement the City's economic development strategy for the Target Area as summarized below.

Small businesses and start-ups often are unable to access private capital for financing business expansion and improvements. Those who can meet private capital procurement requirements may do so at higher prices. In order to lessen this burden to local businesses, the RLF is designed to supplement private financing for tenant improvements and fixed assets such as equipment for businesses. Use of RLF funds in tandem with private financing can reduce the cost of private financing, thereby increasing the availability of private capital to businesses that are located in Berkeley.

A. TARGET AREA OVERVIEW

1. The Changing Economic Climate in Berkeley

At the inception of the RLF in 1980, the Target (lending) Area was exclusively in South Berkeley, where many of the City's lowest income and minority residents were clustered. Though South Berkeley continues to be one of the economically depressed areas in the City, poverty and unemployment are somewhat less geographically concentrated in South Berkeley than they were in the 80s, 90s, and the aughts (00s).

Expansion of the Target Area in 2011 to the full City of Berkeley did not mean that the RLF ceased lending in South Berkeley, or ceased lending to retail businesses. In fact, the opposite occurred. Once the program had a larger target area, it netted more applicants to the loan program, and increased visibility of this viable business assistance resource. In order to promote small business growth and add jobs to the Berkeley employment base, the RLF continues to need the flexibility to consider loan requests from businesses throughout all of Berkeley that have the potential to create more and better-quality jobs.

This RLF Administrative Plan update stems from a regional strategy document, Building on Our Assets[1] that has been reviewed by the Economic Development Administration (EDA) and certified as a Comprehensive Economic Development Strategy (CEDS).[2]

There are also several area plans that dictate the direction of economic development activity in the City of Berkeley. Within the boundaries of the Target Area there are specific area plans in place, including:

- Adeline Corridor Plan (2020)
- Southside Plan (2011)
- Berkeley General Plan (2003)
- South Shattuck Strategic Plan (1997)
- University Avenue Strategic Plan (1996)
- West Berkeley Plan (1993)
- Downtown Plan (1990)
- South Berkeley Area Plan (1990)
- Waterfront Master Plan (1986)

[1] East Bay Economic Development Alliance, *Building on Our Assets, Economic Development & Job Creation in the East Bay,* A regional economic assessment, October 2011. See: http://www.eastbayeda.org/ebeda-assets/reports/2013/Econ%20Report_Building_on_Our_Assets_Report_2011.pdf

[2] For more on the region-wide CEDS update, see: http://abag.ca.gov/planning/economic.html, 2017.

All other areas that do not fall within the area plans specified fall within the jurisdiction of the City of Berkeley's General Plan's Economic Development and Employment Element.

2. Target Area Resources and Assets

The commercial areas within the Target Area are primarily developed with a mix of residential and business clusters/corridors. The South Berkeley area can be characterized as neighborhood commercial districts on arterial streets: Adeline Avenue, Shattuck Avenue, Sacramento Street/San Pablo Avenue have a mix of smaller retail and service-sector businesses. Additionally, some light industrial and food processing establishments also exist along San Pablo Avenue. Research and Development (R&D) firms are highly concentrated in, but not limited to, the West Berkeley area. In the past decade, West Berkeley has experienced continued growth in biotechnology, pharmaceuticals, environmental services and food processing. While there was a vested effort to attract growth in the previous (pre-2011) Target Area (South Berkeley), there was very little success in doing so. The 2011 Target Area Expansion provided an opportunity to assist these growing sectors in their development, while continuing to assist traditional retail businesses along the south Berkeley commercial corridors.

The expansion of the Target Area continues to possess a number of resources and potential opportunities for synergistic economic development and growth, including:

- Availability of commercial zoned vacant or underutilized parcels along major traffic corridors,
- Numerous commercial districts with unique tenant mixes;
- Organized merchant associations in many districts of the city;
- Recent and planned public improvements along major corridors and BART stations;
- A high degree of community involvement and support for economic development and revitalization efforts;
- Commitment of a significant amount of City and federal resources, including the recent development projects and public improvements around the Downtown Berkeley and Ashby BART stations, transportation enhancements along San Pablo Avenue and University Avenue; and
- Availability of high quality educational and job-training resources through the neighboring University of California, the Berkeley Community College (Peralta District), and the City's First Source employment program and other local employment training programs.
- Unique to the City of Berkeley, the neighboring University of California, Berkeley and the Lawrence Berkeley National Laboratories are major draws for high tech businesses, many of which have ongoing business relationships with both the City and the University.

3. Implementation Programs and Activities

The City is implementing the following supportive programs in the Target Area:

a) Business retention and attraction programs specific to unique commercial districts the Target Area

b) Proactively engaging with financial institutions to access private capital for business expansion and attraction
c) Encouraging participating businesses to utilize the RLF in tandem with private financing
d) Providing a list of additional resources to assist borrowers in applying for financing
e) Distributing information on local employment and business assistance programs
f) Informing business owners on upcoming development of key properties, relevant capital improvement programs specific to the commercial area.

B. THE BUSINESS DEVELOPMENT STRATEGY

1. Objectives of the Business Development Strategy

The RLF is designed to assist in achieving the following economic development objectives and benefits for the Target Area:

- Provide financing mechanisms through which public investment will stimulate simultaneous private investment in the revitalization of commercial districts within the Target Area that otherwise would not have occurred;
- Provide a programmatic framework for the effective rehabilitation and conservation of commercial or industrial facilities;
- Provide incentives for the retention, expansion, and location of firms that will promote increased employment opportunities for residents, present a stronger non-residential tax base, and provide more opportunity for local participation in economic activities;
- Increase minority enterprise development;
- Increase women-owned business development;
- Link RLF borrowers with the City's First Source Employment program to increase local hires;
- Increase the growth potential of local businesses;
- Establish linkages with the surrounding commercial area's existing economy to ensure the RLF Funds are not used as a substitute but instead as a supplement for private investment;
- Generate additional tax revenues (from increased sales etc.) for the City of Berkeley;
- Assist firms in meeting local environmental standards; and
- Encourage the development of vacant land and the rehabilitation of dilapidated or vacant buildings for commercial purposes.

2. Targeted Sectors

The City has targeted the following industry clusters in the Target Area for business assistance:

- Healthcare, including pharmaceuticals, medical devices, biotechnology and healthcare services;
- Environmental, including environmental technology and environmental services;
- Business services, including locally serving professional services, business related services, technical services, finance, and real estate services;
- Light manufacturing, including food processing; and
- Retail Trade.

3. Types of Business Assistance

The Office of Economic Development (OED) assists businesses in the Target Area with a full range of local economic development activities, including:

- Attracting new businesses to the City of Berkeley in the targeted sectors by identifying and marketing vacant sites and buildings in close collaboration with the commercial real estate community.
- Assisting new businesses in obtaining permits and financing. Assistance is provided to existing businesses to expand, including assistance with financing through the RLF and other available financing.
- Referral of new and existing businesses interested in business planning to community business counseling resources such as SCORE Easy Bay andthe Alameda County Small Business Development Center (SBDC).
- Providing assistance in obtaining qualified employees that are also local residents through the City's First Source Employment Program.
- Providing technical assistance to businesses interested in the worker cooperative model as a succession plan.

C. FINANCING POLICIES

RLF loans may be made to qualifying businesses for tenant improvements, fixed assets such as equipment and machinery, working capital, and real estate transactions. Loan funds may also be used to finance the conversion of a qualifying business to worker ownership if the applicant can demonstrate that (1) the business would close, downsize, or be significantly harmed if the business does not convert to a cooperative, and (2) jobs would be retained or gained through the conversion.

1. Loan Size – The standard loan size is $35,000. The LAB may approve loan amounts larger than the standard maximum on an exception basis. The maximum individual loan size, per Economic Development Administration (EDA) program-wide policy, is to be no more than 25% of the RLF program's capital base at the time of the loan application.

2. Interest Rates - Interest rates on loans will be fixed. The standard RLF interest rate on RLF loans will be equivalent to the prime interest rate quoted in the *Wall Street Journal* plus 2% at the time of loan approval by the LAB. The RLF operator will follow the state's usury law, which determines the maximum legal interest rate. The minimum or floor interest rate for RLF loans is five percent (5 %) or seventy-five (75%) of the prime interest rate listed in the Wall Street Journal. According to 13 CFR 307.15, the only exception for the above policy is if the prime interest rate listed in the *Wall Street Journal* exceeds fourteen (14%) percent, the minimum RLF interest rate is not required to be raised above ten (10%) if doing so compromises the ability of the RLF program to implement the financing policy.

3. Application Fee - There will be a $~~2~~50 fee for each loan application. The application fee will be credited towards the loan underwriting fee.

4. Payment Terms - Payments will generally be made monthly; however, customized payment structures may be extended to borrowers depending upon their individual cash flow needs. In the case of multiple disbursement loans for equipment or tenant improvements, there may be an interest-only period until the loan is fully disbursed, generally not more than 180 days. Temporarily reduced or deferred payments may be considered as options in structuring a workout plan.

5. Loan Terms - The standard loan terms will be 5-10 years fully amortized, depending on loan amount. In general, loan terms will not exceed the average useful life of the assets being financed. The loan term will be the lesser of the average useful life of the asset being financed or the term based upon the borrower's ability to pay. Smaller loans will generally have shorter terms.

6. Private Leveraging/Participation - RLF recipients are highly encouraged to participate in other financing institutions' loans and/or lines of credit. To provide context for this goal, there is an Economic Development Administration (EDA) portfolio-wide requirement in which the full RLF (all participants collectively) will leverage a minimum of two private dollars for each RLF dollar loaned. That is, the leveraging requirement applies to the portfolio as a whole rather than to the individual loan. Private "leveraging/participation" is defined as capital invested to the business by the borrower, others (partners) or financing from private entities such as banks or crowd-sourced funding.

7. Equity/Borrower Injection General Requirement - The RLF will require all borrowers to inject owner equity as a percentage of the requested loan amount; this may be in form of owner equity and/or private financing. The borrower's equity injection should be as follows: at least 10% of requested loan amount for existing businesses and at least 20% of requested loan amount for startup businesses. In the case of a worker cooperative, the RLF will allow a group of principals to produce 10% of the equity for an existing cooperative or a business converting to a cooperative, or 20% for a startup cooperative. Additionally, startup business will be required to demonstrate significant industry experience or the equivalent. They will also be required to provide a secondary source of repayment and a complete business plan. Exceptions may be made on a case-by-case basis depending upon the particular project. In general, existing equity or existing cash injection into the business indicates a reasonable level of commitment to the business; therefore, consideration will be given to existing equity in determining new equity required as a result of the project being financed.

8. Collateral- Collateral pledged and personal guarantees for each loan will depend upon the loan amount, the overall risk of the credit, and the availability of personal and business assets to be pledged as collateral. Loans will be secured by collateral to the maximum extent possible to ensure an adequate secondary source of repayment. Generally, collateral pledged through UCC-1 filings for RLF loans shall not be pledged to other lenders or for other obligations of a business.

9. Credit Memorandums - Each application will be reviewed for standard underwriting criteria. A credit memorandum summarizing the applicant's satisfaction of the criteria will be presented to the Loan Administration Board (LAB) prior to board consideration of loan approval. Generally, the credit memo will address the following qualities: location in the Target Area, management ability, market feasibility, primary source of repayment, secondary source of repayment, leverage, environmental issues, job creation, worker ownership opportunities, credit history, and the project or applicant's overall economic impact. Credit memorandums will also address other program requirements, such as the ratio of funds loaned to jobs created. Such memorandums may be prepared by consultants under contract to the City and supervised by the OED.

10. <u>Financing Restrictions</u> – RLF Capital may **not** be used to:
    a) Acquire an equity position in a private business;
    b) Subsidize interest payments on an existing loan;
    c) Provide the equity contribution required of borrowers under other Federal loan programs;
    d) Enable a borrower to acquire an interest in a business, either through the purchase of stock or through the acquisition of assets, unless the need for RLF financing is sufficiently justified and documented in the loan write-up/credit memo. Acceptable justification could include acquiring a business to substantially save it from imminent foreclosure, or acquiring it to facilitate a significant expansion or increased investment, or acquiring it by the workers to convert the business to a worker cooperative;
    e) Provide loans to a borrower for the purpose of investing in interest bearing accounts, certificates of deposit or other investment not related to the objectives of the RLF;
    f) Refinance debt unless:
        1. The loan application is determined "exempt" by EDA.
        2. It is sufficiently documented in the attendant credit memo that the RLF loan is not replacing private capital solely for the purpose of reducing the risk of loss to an existing lender(s), or
        3. An RLF loan is used to purchase the rights of a prior lien holder during an in-process foreclosure action in order to preclude a significant loss on an RLF loan. This action may be undertaken only if there is a high probability of receiving compensation within 18 months from the sale of assets sufficient to cover the RLF's expenses plus a reasonable portion of the outstanding loan obligation
    g) Finance any activity that serves to relocate jobs from one commuting area to another. (A commuting area is that area defined by the distance people travel to work to and from the Berkeley area) unless:
        1. The applicant has moved or will move into the Target Area for reasons unrelated to RLF assistance;
        2. The applicant has relocated to the Target Area prior to the date of the applicant's request for RLF assistance;
        3. The applicant will expand employment in the Target Area substantially beyond employment in the area where the business was originally located;
        4. The applicant is relocating from technologically obsolete facilities to remain competitive;
        5. The applicant is expanding into the new area by adding a branch affiliate of subsidiary while maintaining employment levels in the old area(s);

Additionally, all businesses that receive an RLF loan will sign First Source hiring agreements with the City as part of the standard loan contract procedure. The hiring agreement with ensure that businesses utilize the City of Berkeley's First Source Program for the recruitment, referral, and consideration of Berkeley applicants for new and replacement employment.

D. PORTFOLIO STANDARDS AND TARGETS

1. Lending Targets

The goal of the RLF is to target industry clusters to produce the following ranges for allocation of the portfolio:

- Healthcare, environmental services, business services: 50-65%
- Light industry: 10-35%
- Retail: 15-25%

An additional goal of the RLF is to allocate a minimum of 10% of the portfolio to worker cooperatives or businesses converting to democratic worker ownership.
A *maximum* of 25% of the portfolio shall be loaned to start-up businesses. Exceptions made to exceed this target shall be made only in situations where repayment is guaranteed through a very strong collateral position. Worker cooperatives shall not be considered start-ups for purposes of this section.

2. Private Investment Leveraging Ratio

As specified in the EDA Terms and Conditions, the portfolio shall maintain a private leverage ratio of 2:1, or $2 of private dollars or funds to every $1 in EDA funding.

3. Cost per Job

   a. Every project shall have a new job creation or jobs saved component.
   b. The portfolio shall target a cost per job ratio of $20,000 or less.
   c. The maximum cost per job for any single loan will generally not exceed $30,000.

E. LOAN SELECTION CRITERIA

Priority in processing loan applications will be given to applications that further the targeting of RLF funds as outlined above. Loan applications will be considered for processing, if:

1. Staff can demonstrate credit worthiness based upon the financing policies of this plan;
2. The project is consistent with the business development strategy;
3. The loan will meet program goals to facilitate in the creation of higher paying, higher skilled, private sector jobs, diversify and strengthen the economy, and stimulate private investment. Priority will be given to those projects that provide the highest economic benefit, which may be evidenced by creation of worker-owned jobs; and
4. The loan is consistent with the goal of maintaining a diversified portfolio.

F. PERFORMANCE ASSESSMENT PROCESS

The portfolio goals will be monitored at the time of the semi-annual report to EDA. If targets are out of line or a trend is noticed in this direction, these trends will be analyzed to determine if any modifications to the Plan and/or portfolio are required. This will be accomplished by utilizing the current database software that is utilized to generate the EDA report.

The EDA Administrative Plan will be reviewed annually as part of the annual certification. Changes will be made to the plan as deemed appropriate to ensure the plan is consistent with the area's current economic development strategy and that the RLF is being operated in accordance with policies and procedures contained in the approved plan. (13 CFR 308.14).

PART 2: REVOLVING LOAN FUND ORGANIZATIONAL STRUCTURE AND OPERATIONAL PROCEDURES

A. ORGANIZATIONAL STRUCTURE

1. Overview

The City's Office of Economic Development Department (OED) is responsible for the implementation of the program and administration of the RLF. An RLF Program Manager, under the general direction of the Economic Development Manager, is responsible for responsible for developing, completing, coordinating, and servicing the loans generated by the RLF. OED staff works closely with private lenders to secure financing for businesses in coordination with City financing mechanisms. The City of Berkeley will provide referral assistance to RLF clients for services, including loan packaging and business counseling, and to coordinate technical assistance resources including assistance from banks, colleges, minority business development assistance centers, business development organizations and trade associations. The OED is responsible for receiving payments of all RLF loans using standard loan servicing software. The Program Manager provides monthly reports, upon request, on the status of all outstanding loans to OED Manager and the EDA for monitoring purposes.

2. Loan Administration Board (LAB)

The Loan Administration Board will generally schedule meetings "as needed", and will agree to review transactions requiring quick action on an "as needed" basis. Organizational and operational matters, including loan decisions, will be made by a majority vote of the appointed members of the Board. A quorum will exist whenever at least half of appointed members are in attendance. However, at least one LAB member with financing experience (similar to the type of loans to be made) must be present for each loan decision. No loan will be committed, no major loan modification or waiver agreed to, no loan foreclosure action initiated without formal prior review and comment (in the form of LAB minutes) of the Loan Board. Staff will recommend on interest rates, terms and conditions for all loans. The LAB will make the final determination on the pricing and other terms of all loans from the RLF.

3. Conflict of Interest

No officer, employee, or member of the City Council, LAB or other City board or commission that advises, approves, recommends or otherwise participates in decisions concerning loans or the use of RLF funds, or person related to the officer, another employee, or any member of the City Council, LAB or other City board or commission by immediate family, law, or business arrangement, may receive any benefits resulting from the use of RLF loan or grant funds.

In addition, the City may not lend RLF funds to an employee of the City or any member of the City Council, or the LAB. Former board members and members of his or her immediate family shall not receive a loan from the RLF for a period of two (2) years from the date that board member last served on the board. Immediate family is defined as domestic partner or significant other, parents, grandparents, siblings, children and grandchildren, but does not include more distant relatives, including cousins, unless they live in the same household.

Exception: A benefit or loan may be conferred if the officer, employee, LAB member, City Council member or other board or commission member affected first discloses to the City on the public record the proposed or potential benefit and receives the City Attorney's written determination that the benefit involved is not so substantial as to reflect adversely upon or affect the integrity of the RLF's decision process or of the services of the officer, employee, or member of the City Council, LAB or other City board or commission. LAB members are responsible for disclosing any possible conflict of interest that may exist with respect to a particular action of the LAB, and recusing themselves from all relevant votes on said loan as appropriate.

An officer, employee, or member of the City Council, LAB or other board or commission shall not solicit or accept, directly or indirectly, any gift, gratuity, favor, entertainment or any other thing of monetary value, for him or herself or for another person, from any person or organization seeking to obtain a loan or any portion of the RLF funds. Former LAB members and/or officers are ineligible to apply for or receive loan or grant funds for a period of one year from the date of termination of his/her services.

Loan board members that have other professional relationships (i.e., a banker with loan to borrower) with a prospective borrower cannot be present for deliberations, but may respond to questions from other members of the LAB, to avoid the appearance of a conflict of interest. All LAB members will be required to comply with local and state conflict of interest policies and filing requirements (see: 13 CFR 300.3).

B. LOAN PROCESSING PROCEDURES

1. Standard Application Requirements

Each potential borrower will be required to initially complete the City's standard loan application. Staff will review the application to determine if it meets the general intent and purpose of the RLF. In evaluation of applicants, staff will consider whether the project/loan:

- Meets the targeting criteria and is in one of the targeted clusters
- Demonstrates a reasonable assurance of repayment
- Is consistent with the portfolio job/cost ratio established for the RLF

Potential borrowers are required to submit the following documents (as applicable) with their loan application:

Financial Statement – Prior 3 years and current within 90 days, including:

- Balance Sheets
- Income/Expense Statement
- Articles of Incorporation/By Laws or Partnership Agreement (If Applicable)
- Resume(s) of Principal(s) (normally those with 20% ownership or more; worker cooperatives with no 20% or more owner shall submit resumes for all members)
- Certificate of Good Standing (corporations only)

Pro Forma Financial Projections - including:

- 1-year Income/Cash Flow Statement (Month to Month)
- Additional 2 years Cash Flow Projections

- Explanation of the underlying assumption supporting the cashflow projections

Aging of Accounts Receivable and Payable- including:

- Accounts aging within 90 days and list of vendors and addresses and account numbers for any accounts over 30 days.

Schedule of Business Debts- including:

- original amount of debt,
- current balance outstanding,
- payment amount(s),
- interest rate,
- collateral,
- status (current/delinquent)

Individual Federal Income Tax Return – (if proprietorship or partnership)
Business Federal Income Tax Return – Prior year.
IRS Form 4506 (Request for Copy of Tax Return)
Verification of business space- including:

- (i.e. Deed of Trust, Lease/Rental Agreement, Purchase Agreement as applicable)

Agreement of Landlord (for tenant improvement loans)
Proof of Hazard and Liability Insurance
Appraisals or independent evaluations on assets offered as collateral
Evidence of Private Lender Commitment or Denial of funds letter(s)
Proof of Berkeley Business License

Borrowers shall be approved based upon a reasonable assurance and determination of repayment ability and potential economic benefits to the community, i.e., number and quality of jobs they will create, worker ownership opportunities created, amount of taxes generated, extent to which they expand a targeted industry cluster and relation to other businesses and services.

2. Credit Reports

Standard commercial and personal credit reports on all principals owning 20% or more of a business under consideration for a loan and the business will be ordered and reviewed by the contracted underwriting party. In the case of a worker cooperative with no members owning more than 20%, a credit report on multiple designated members, whose interests together equal 50% or more, shall be ordered and reviewed. Adverse credit deficiencies that would cause the underwriter to question the ability and or willingness of the potential borrower to repay the loan will be deemed a valid reason for declining the request. A summary review of the results of the credit reports shall be a part of the loan write-up.

3. Uniform Commercial Code (UCC) Lien Search and/or Title Report

A UCC search may be completed to determine any existing liens, where personal property is being taken as security (i.e. equipment, or business assets). A real estate title report may be required in those instances where real property is being taken as collateral.

4. Appraisal Reports

Appraisal reports or other valuation determinations may be obtained, where existing fixed assets and/or real properties are being used as primary collateral. If completed appraisals will utilize qualified appraisers having expertise appropriate to the assets being pledged.

5. Environmental Reviews

The RLF Administrator with the assistance of appropriate staff, shall assess the significance of all environmental impacts of activities to be financed in compliance with the National Environmental Policy Act of 1969 and other Federal environmental mandates, as per the Assurances (SF 424D as revised) executed with the Economic Development Administration (EDA). No activity shall be financed which would result in a significant adverse environmental impact unless the impact is to be mitigated to the point of insignificance. When necessary to ensure compliance, any required mitigation shall be made part of the loan conditions.

No project shall be approved which would result in the alteration of or have an adverse impact on any wetland without prior consultation with the U.S. Department of the Interior, Fish and Wildlife Service, and, if applicable, obtaining a section 404 permit from the Army Corps of Engineers.

Consistent with E.O. 11988, no project shall be approved which would result in new above ground development in a 100-year flood plain. This determination will be made by reviewing the proposed development against FEMA Flood Insurance Rate Maps.

The State Historic Preservation Officer, (SHPO) shall be notified of each loan proposal that involves significant new construction or expansion and asked to submit comments on the effect of the proposed activity on historic and archaeological resources. The RLF Administrator shall work with the SHPO and EDA in cases where the SHPO has recommended actions or has been determined an adverse impact.

All loan applicants shall be requested to provide information indicating whether or not there was hazardous materials such as EPA listed (see 40 CFR 300), hazard substances, leaking underground storage tanks, asbestos, polychlorinated biphenyls (PCB), or other hazardous materials on site that have been improperly handled and have the potential of endangering public health. If deemed necessary, loan applicants may be required to perform or provide evidence of a Phase I site assessment to identify possible sources of contamination, a Phase II site assessment to test soil and/or groundwater samples, and a Phase III site remediation involving mitigation of applicable contaminants. In cases where there are unresolved site contamination issues, the RLF Administrator shall work with the loan applicant and the appropriate state environmental agency office to resolve these outstanding issues.

6. Standard Collateral Requirements

Loans will be secured to the fullest extent possible to protect the interests of the RLF as a secondary source of repayment. Loans may be secured with the following types of assets:

- Real property
- Machinery & equipment
- Inventory
- Accounts Receivable
- Stock pledges
- Patents and other intellectual properties
- Securities
- Intangibles
- Personal and/or corporate guarantees

A personal guarantee will be required of any principal having a 20% or more ownership in the company being considered; it shall also be required of the principal(s) trust(s) deemed to be controlled by him or her. In the case of worker cooperatives in which no single member has a 20% or more ownership interest, the cooperative shall designate multiple members, whose interests together equal 50% or more, to provide a limited (several) personal guarantee. This ownership panel shall be submitted to the LAB as an Exhibit. The panel may be amended over time, allowing for release of liability if a member leaves the cooperative, so long as the cooperative substitutes the personal guarantee of another member. The cooperative shall update the LAB on any amendment to the ownership panel, but no amendment to the Loan Agreement will be required. Personal guarantees may be collateralized with liens or property. Appropriate hazard and liability insurance shall be required, and key man life insurance shall be considered depending on the size and nature of the transaction and the health and ages of the principals. The City of Berkeley shall be named as a Loss Payee on the appropriate insurance policies. Trust deeds may be obtained and supported by lenders title policies in those cases where real property is pledged as collateral. Liens on all personal property will be perfected by UCC-1 filings. UCC searches will be conducted to determine encumbrances and to ensure the RLF obtains desired lien position. All RLF program funding is subject to the Davis-Bacon Act and Related Acts, which establishes a requirement for paying the local prevailing wages on public works projects for laborers, unless the EDA determines that loan amounts are so de minimis that property cannot be purchased or renovated with the loan.

7. Standard Equity Requirements

Existing businesses may be required to inject at least 20% of the requested loan amount; start-up businesses are required to inject at least 20% of the requested loan amount. Assets (e.g. equipment), which are added to a project from outside sources, may be considered part of the equity investment, provided they are lien free.

8. Loan Write-Up/Credit Memos

Written loan presentations (“credit memos”) to the Loan Administration Board will contain at a minimum the following information:

1. Evidence that the Borrower is in the Target Area approved by EDA.
2. Recommendation: Support funding recommendation based on analysis of the business' industry, its place in that industry, financial analysis, and ability torepay.
3. Findings: Indicate if borrower is eligible, under criteria established in the RLF Plan and EDA Grant Agreement.
4. Description of Business

5. Background and History of Business Operation: Describe the history and background of the business, including a brief industry analysis.
6. Detailed description of the borrower; i.e., is it a corporation, partnership, sole proprietorship, list owners and their percentage of the business.
7. List of names and relationships of the guarantors to the owners of the business as appropriate.
8. Provide loan details:
    (a) Loan Request: State the amount of the request and state the recommended monthly amortization and term.
    (b) Interest: Indicate the rate, specifying a fixed rate.
    (c) Use of Funds by category.
    (d)
9. Purpose: Describe in detail the purpose of the loan by category, i.e., fixed asset financing, tenant improvements, etc. Be specific about sources and uses of proceeds to complete the project. Any proposed exceptions to loan policies need to be explained.
10. Credit Report: Indicate the results of the credit reports obtained on the principals, guarantors, and company.
11. Financial Analysis: Indicate the source of information for the analysis. Describe the company's financial performance as reflected by its financial statements, with special emphasis on revenues and operating income, leverage, cash flow, and debt capacity. Projection should be consistent with historical performance unless there is an extraordinary event such as a new contract. Any significant changes in financial positions or performance of the company must be explained.
12. Personal Financial Analysis: Write an analysis of the principal's and guarantor(s) personal financial statements. Any significant changes in financial position or performance must be explained.
13. Collateral: Describe the collateral pledged for this loan, and indicate the secured position of the RLF. If property is being pledged, show the present market value and the net equity available for all properties pledged. Date of appraisal, name of appraiser and loan to value must also be included.
14. Job/Cost Ratio: Divide the total loan amount by the number of jobs saved and/or created as a result of this loan. Recall, that the RLF program is subject to the Davis-Bacon Act and Related Acts, applying to contractors and subcontractors performing on federally funded or assisted contracts in excess of $2,000 for the construction, alteration, or repair (including painting and decorating) of public buildings or public work.
15. Public Benefit: Describe the benefit of this loan in terms of jobs retained and/or created. Indicate the value of this borrower to the community. Specify whether this loan would create or preserve worker-owned jobs. Jobs saved are defined as jobs that would be imminently lost without RLF assistance.
16. Environmental Problems: Discuss any environmental review in connection with the loan, including, any City environmental review and the results of any required Phase I or Phase II environmental study. Attach an environmental checklist or other review that is relevant to consideration of the loan. Indicate what actions the borrower must take to comply with any environmental findings orrequirements.

9. Procedure for Loan Approvals

When a loan is approved, staff will draft a memo stipulating the terms of approval and obtain the signature of the chairperson of the Loan Administration Board. The minutes of the LAB meeting shall reflect this approval and be circulated to all members of the Loan Board. RLF staff shall be directed to prepare and send a commitment letter with a time expiration date signed by the Manager of Economic Development to the prospective borrower, stating the terms and conditions of the committed loan consistent with the written credit memo to the LAB, and any provisions or changes recommended by the LAB. It shall also state *"this commitment is based on the fact that there have been no material adverse changes in the credit condition of the borrower since statements and information has been submitted to the RLF. If any such material adverse changes have taken place, this commitment is void and not in effect."*

10. Loan Decline – Appeal Process

The LAB will act upon recommendations for loan approval with the knowledge that the due diligence and underwriting on each loan has been completed, and upon reliance that the financial exhibits provided in the application are correct. Where a loan is denied by the LAB, an applicant may request further review by the LAB if the applicant can provide additional information that addresses the concerns of the LAB about the proposed loan. However, LAB decisions on loans are final and binding and cannot be appealed to the City Council.

C. LOAN CLOSING AND DISBURSEMENT PROCEDURES

1. General Closing Requirements
   a. Proof of equity, such as current bank account statements showing the needed funds on deposit, will be required for all loans requiring an equity injection;
   b. If existing debt is being converted to equity, or subordinated, evidence such as a subordination agreement, the original note, the conversion agreement, corporate resolutions and copies of shares issued will be required.
   Where another lender is involved in the financing of a business an inter-creditor agreement setting forth the respective rights of the parties shall be required where appropriate for the protection for the RLF.

2. Loan Closing Documentation Requirements
   a. All loans will require a promissory note and a loan agreement.
   b. All loan documents will be reviewed and approved by the Office of the City Attorney prior to loan closing.
   c. Sole proprietorships using a “doing business as/dba” will be required to provide copies of fictitious name filings.
   d. Partnerships will be required to provide copies of the partnership agreements and buyout agreements if applicable.
   e. Corporations will normally be required to provide copies of the Articles of Incorporation, By Laws, certificates of good standing, and corporate resolution to borrow.
   f. All loans will require a security agreement where personal property secures a loan.

g. Perfection of collateral will require UCC-1 filings on equipment and fixtures, inventory and receivables, recording deeds of trust on real property, and certificates of title or stock registration, as appropriate.
h. UCC searches will be performed before loan board review to determine position. UCC searches may also be performed after loan closing and UCC filings to confirm that the desired lien position was actually obtained.
i. Borrower will be advised if Lenders Title insurance will be required for all financed real property.
j. Borrower will be advised if vehicle titles will be required to show the City of Berkeley as lien holder. If a third party owns the collateral, hypothecation and assignment agreements shall be required.
k. All principals with 20% or more ownership (or multiple worker cooperative members who together own 50% or more) will normally be required to provide continuing guarantees, and subordination agreements, as appropriate.
l. Inter-creditor Agreement, if necessary, to preclude prior lien holder from increasing debt, and/or to delineate collateral and responsibilities of lenders.
m. Prior to closing, the borrower will present the required hazard and liability insurance policies, and any other insurance coverage such as key life insurance, as required
n. Lease assignments will be taken as appropriate.

The Loan Agreement shall contain covenants that shall require the borrower to comply with Federal statutory and regulatory requirements that apply to activities carried out with RLF loans. The Loan Agreement shall contain a provision to protect and hold the Federal government harmless from and against all liabilities that the Government may incur as a result of providing an award to assist (directly or indirectly) in site preparation or construction as well as the renovation or repair of any facility or site. This applies to the extent that such liabilities are incurred because of ground water, surface, soil or other conditions caused by operations of the RLF Recipient or any of its predecessors on the property. The Loan Agreement shall also include a list of the Federal requirements that apply to RLF Borrowers as provided in the U.S. Department of Commerce Economic Development Administration Revolving Loan Fund Standard Terms and Conditions.

3. Loan Disbursement Requirements
   a. The borrower will certify in the loan agreement that the funds are to be used for the purposes intended as specified in the loan application. A positive covenant shall be included in the loan agreement stating the purpose of the loan. A breach of this covenant shall be deemed an event of default and the loan may be called.
   b. In instances where construction is in progress, a building control account may be established as necessary to avoid mechanics liens.

D. LOAN SERVICING PROCEDURES

1. Loan Payment and Collection Procedures

The Office of Economic Development (OED) staff, including the RLF program manager, will provide borrowers with payment coupons annually and upon request, receive and deposit loan and interest payments into an interest bearing RLF bank account, and, upon request, advise OED Department Manager when funds are received. Additionally, upon request, the RLF Program Manager will provide monthly reports of disbursements, receipts of interest and principal and any past due accounts. Timely notification of any payment due and not paid will be provided to borrowers.

Late fees (which will be incorporated in the body of the Promissory note) shall be 5% of the payment outstanding and begin accruing on the next calendar day after the payment is due. If the loan is past due more than 15 business days, late fees shall commence.

2. Loan Monitoring Procedures

a. Annual financial statements (defined to include a balance sheet and profit and loss statement, compiled by an independent accountant or certified by the chief financial officer and president) may be required on all loans. RLF staff shall monitor these and other dated requirements such as insurance renewals, and UCC renewals. If documents are not received on a timely basis as stipulated by the Loan Agreement, designated staff will be responsible for correcting the deficiency. Provisions will be made in the Loan Agreement that audited statements may be required.
b. OED staff may visit each borrower on an as needed basis to determine whether the business is in line with its stated business plan. Each visit will be documented by memorandum, and will contain a summary of the progress the business is making (or not making) from a marketing and financial perspective, as well as an assessment of the business' future. This report shall be provided to the LAB.
c. As part of the required semi-annual reports, jobs saved/created data will be compiled by OED staff and supplied to the EDA. All jobs will be reported in full time equivalents.
d. All other required loan documentation and special provisions will be monitored by OED staff.

3. Late Payment Follow-up Procedures

a. Upon being advised that a payment due was not made, RLF staff will contact the borrower promptly to determine the problem, if any exists.
b. The loan servicer will send a written notice of delinquent payment 5 working days after due date with notification of late penalty, and will notify the RLF staff in writing.
c. RLF staff will send a second written notice 30 days after the due date.
d. RLF staff will send a third written notice 60 days after the due date.
e. RLF staff will send a fourth written notice 90 days after the due date.
f. During the first 30 days of delinquency, written and oral communication, as well as site visits by RLF staff will be utilized to resolve the delinquency.
g. If, after 90 days a delinquency still exists and the loan has not been renegotiated or brought current, the loan will generally be determined to be in default and recovery of the security will commence.
h. Any renegotiation of loan terms to remedy a default must be approved the LAB.
i. If at any time during this 90-day period, the Economic Development Manager believes that the borrower cannot or will not bring the loan current, with Loan Administrative Board approval, RLF staff can declare the loan in default and begin recovery against collateral, if deemed appropriate.

4. Collection Procedures

The RLF staff will work to exercise all rights and privileges of a lender in order to collect the proceeds on delinquent loans. To ensure that the delinquent loan is collected in an appropriate, efficient, and timely manner, staff will:

a. Prepare a plan of action with guidance by the Loan Administrative Board for collecting the loan and taking action against the collateral.
b. Make sure all required loan documentation is in order.
c. Consult with the City Attorney on all default notices and collection efforts and to insure that no laws or regulations will be violated by the collection effort and that all legally required actions are taken.
d. Contact all other co-lenders as appropriate.
e. List defaulted or chronically delinquent loans with credit bureaus.
f. Notify the guarantors of the default and put them on notice that they are expected to make payment, in full, upon demand.
g. Begin collection procedures and/or asset liquidation process.

5. Write-off Policy and Procedures

Loans with an outstanding balance that have been placed in default and remain outstanding after 180 days will generally be written off. However, collection efforts will continue until determined not to be cost effective or prospects for recovery no longer exist. A reasonable loss through defaults will be considered without establishing a loan loss reserve. All write-offs must be directed to the City's Finance Department for approval by the City Council.

E. ADMINISTRATIVE PROCEDURES

1. Procedures for Loan Files and Record Retention

All original primary loan documents will be maintained in the Loan/Collateral file, which will be stored in a secure location by the City Clerk. This file will contain the original note(s), loan agreement, collateral perfection documents (UCC-1 filings, deeds of trust, etc.), and all other original legal documents. All files will be filed and recorded as specified by the EDA Terms and Conditions. Each individual borrower will have a loan file consisting of two items: i) a credit file and ii) an application file.

The Credit File will contain copies of the appropriate legal documents needed to monitor the loan, as well as the original credit memo to the LAB, financial statements and tax returns, credit reports, personal financial statements, a copy of the commitment letter, copies of proof of insurance, site visit memorandum, job reports, and any other correspondence relating to the relationship between the borrower and the RLF. A chronological record shall be maintained recording all significant events by date with a brief description.

The Application File shall be established to contain the original application, business plan, financials, business plan evaluation, and any other documentation provided to evaluate the application. Every effort will be made to maintain confidentiality of applicant records/applications. There will be a public file which will can be reviewed by the public with all personal information (eg. Social Security numbers, loan and credit card numbers redacted. A private file that will include all documentation including, but not limited to, application, credit memorandum, third party evaluations and non-confidential reports and

UCC-1 filings.

Record Retention Loan files and related documents and records must be retained for the life of the loan and for a seven-year period from the date of final disposition of the loan. The City will maintain four different kinds of file records: 1) an application file, 2) a loan file, 3) a decline file and 4) a closed loan file. This will ensure that we have records of all decisions made by the LAB for public review. The date of final disposition of the loan is defined as the date of: (a) Full payment of the principal, interest, fees, penalties, and other costs associated with the loan; or (b) Final settlement or write-off of any unpaid amounts associated with the loan

Administrative records The OED staff or loan servicer must maintain adequate accounting records and source documentation to substantiate the amount and percent of RLF income expended for eligible RLF administrative costs and retain records of administrative costs incurred for activities and equipment relating to the operation of the RLF for five years from the date the costs were claimed.

The loan servicers must also make any retained records, even those retained for longer than the period described, available for inspection. The record retention periods, described above, are minimum periods and such prescription is not intended to limit any other record retention requirement of law or agreement.

2. Procedures for Complying with EDA Reporting Requirements

The RLF program will follow the EDA guidelines articulated in the Revolving Loan Funds Capital Utilization Standard Program. During the 'revolving phase', the City of Berkeley must manage their repayment and lending schedules to provide that at all times at least seventy-five (75%) percent of their RLF capital is loaned or committed.

When the percentage of loaned RLF capital falls below the application capital utilization percentage, the dollar amount of the RLF funds equivalent to the difference between the actual percentage of RLF capital loaned and the applicable capital utilization percentage is referred to as "excess funds."

Sequestration of excess funds If the City of Berkeley fails to satisfy the applicable utilization percentage requirements for two (2) consecutive reporting periods, EDA may require the City to deposit excess funds in an interest- bearing account. The portion of interest earned on the account holding excess funds attributable to the Federal Share of the RLF Grant shall be remitted to the U.S. Treasury. The City must obtain EDA's written authorization to withdraw any sequestered funds.

Persistent non-compliance The City, as a long standing RLF program administrator, will generally be allowed a reasonable period of time (as determined by EDA) to lend excess funds and achieve the applicable capital utilization percentage. However, if the City fails to achieve the applicable capital utilization percentage after a reasonable period of time, as determined by EDA, it may be subject to sanctions such as suspension or termination.

Loan Default Rates The EDA shall monitor the City's loan default rate to ensure proper

protection of the Federal Share of the RLF property, and request information from the City as necessary to determine whether it is collecting loan repayments and complying with the financial obligations under the RLF Grant.
Such information may include:

- A written analysis of the City's portfolio, which shall consider the Recipient's business plan, loan and collateral policies, loan services and collection policies and procedures, the rate of growth of the RLF Capital Base, and detailed information on any loan in default; and
- A corrective action plan subject to EDA's approval, which shall include specific actions the RLF recipient must take to reduce the loan default rate; and
- A quarterly status report indicating the City's progress on achieving the milestones outlined in the corrective action plan.

Failure to provide the information requested and to take steps to protect the Federal Share may subject the City to enforcement action under §307.21 and the terms and conditions of this grant. A collection account has been established and maintained in coordination with the City Attorney and the City's Finance Department in accordance with City regulations governing collections.

3. Grantee Control Procedures
RLF staff shall, periodically review the loan files to determine if they are consistent, complete and correct. All accounts, books, records and loan files shall be reviewed and audited in accordance with City Auditor standards, and Federal Administrative and Audit Standards.

4. Plan Amendment Procedures
Any changes to this Administrative Plan must be approved by the LAB and City Council and shall be submitted to the EDA in writing for approval consistent with requirements of the EDA.

PART 3: COVID-19 RESILIENCY LOAN PROGRAM (RLP) ADDENDUM TO CURRENT ADMINISTRATIVE PLAN

COVID-19 Resiliency Loan Program Borrower Description:
Small businesses, non-profits, cooperatives, and other business firms located in Berkeley, CA that are suffering substantial economic injury as a result of the COVID-19 pandemic are now eligible for low-interest "*COVID-19 Resiliency Loans*" for working capital. Berkeley business, including current RLF borrowers that have been financially impacted as a direct result of the COVID-19 pandemic may qualify for a *COVID-19 Resiliency Loan* to help meet financial obligations and operating expenses which could have otherwise been met by the enterprise had the disaster not occurred.

The COVID-19 Resiliency Loan Program will supplement the existing RLF Program subject to the following guidelines, criteria, and terms:

COVID-19 Resiliency Loan Program Guidelines:

- Allocated $814,000 of available EDA funds to the COVID-19 Resiliency Loan Program which will be part of the City of Berkeley's existing RLF program.
- The maximum loan amount from COVID-19 Resiliency Loan Program seed funds will be set at 25% of the RLP capital base.
- The remaining funding for this loan program shall be transferred to a third-party organization selected by the City Manager and/or his/her designee for the purpose of making loans to qualified businesses and organizations in Berkeley.
- Loans shall be reviewed and approved by a third-party organization selected by the City Manager and/or his/her designee.
- Loans shall be serviced by a third-party organization selected by the City Manager and/or his/her designee.
- ~~The City Manager and/or his/her designee is empowered to administratively approve loans of $25,000 and below~~ ~~*(i.e. A loan of this size or under would not require a full Loan Administration Board (LAB) approval).*~~
- The requirement for loan applicants to leverage additional capital is removed for loans funded with COVID-19 Resiliency Loan Program dollars. (Currently, loans in the traditional RLF portfolio are required to leverage a minimum of two private dollars for every RLF dollar loaned).

COVID-19 Resiliency Loan Program Criteria:

- Loan Applicants are to demonstrate that the applying entity (business or nonprofit) is ~~has been in operation in~~in good standing in the City of Berkeley.~~, in good standing for at least two years.~~
- ~~Loan Applicants are to have 50 or fewer full time employees (or full-time equivalents).~~
- Loan Applicants are to provide a completed CaliforniaA ~~2019~~ Tax Return and/or Certified Public Accountant prepared financials and/or an IRS Form 990 showing positive earnings (Profit).
- Loan Applicants are to demonstrate that receipt of a City of Berkeley COVID-19 Resiliency Loan has the potential to create or save existing jobs.

- For City of Berkeley COVID-19 Resiliency Loan applicants, the existing RLF requirement to demonstrate a declination from a traditional lender is waived.

COVID-19 Resiliency Loan Program Terms:

- ~~Payments and interest accruals are deferred for six (6) months from the date the loan is issued.~~
- Payments shall be made to a third-party organization selected by the City Manager and/or his/her designee.

- The loan interest rate for COVID-19 Resiliency Loans shall be between ~~0 and~~ 1% and 7% depending on loan amount and risk level as determined by a third party loan reviewer *(the current rate for "standard" RLF loans is the prime interest rate + 2 points).*
    - ~~*Existing standard RLF loan recipients may submit a request to the Loan Administration Board for review and approval of a rate reduction or a pause in payments.*~~
- Five (5) Year Repayment Period.
- Additional deferrals and payment term modifications may be granted by approval on a loan by loan basis, subject to the approval of the ~~LAB~~ third-party organization selected by the City Manager and/or his/her designee.

List of Exhibits:

Exhibit A

Organizational Chart

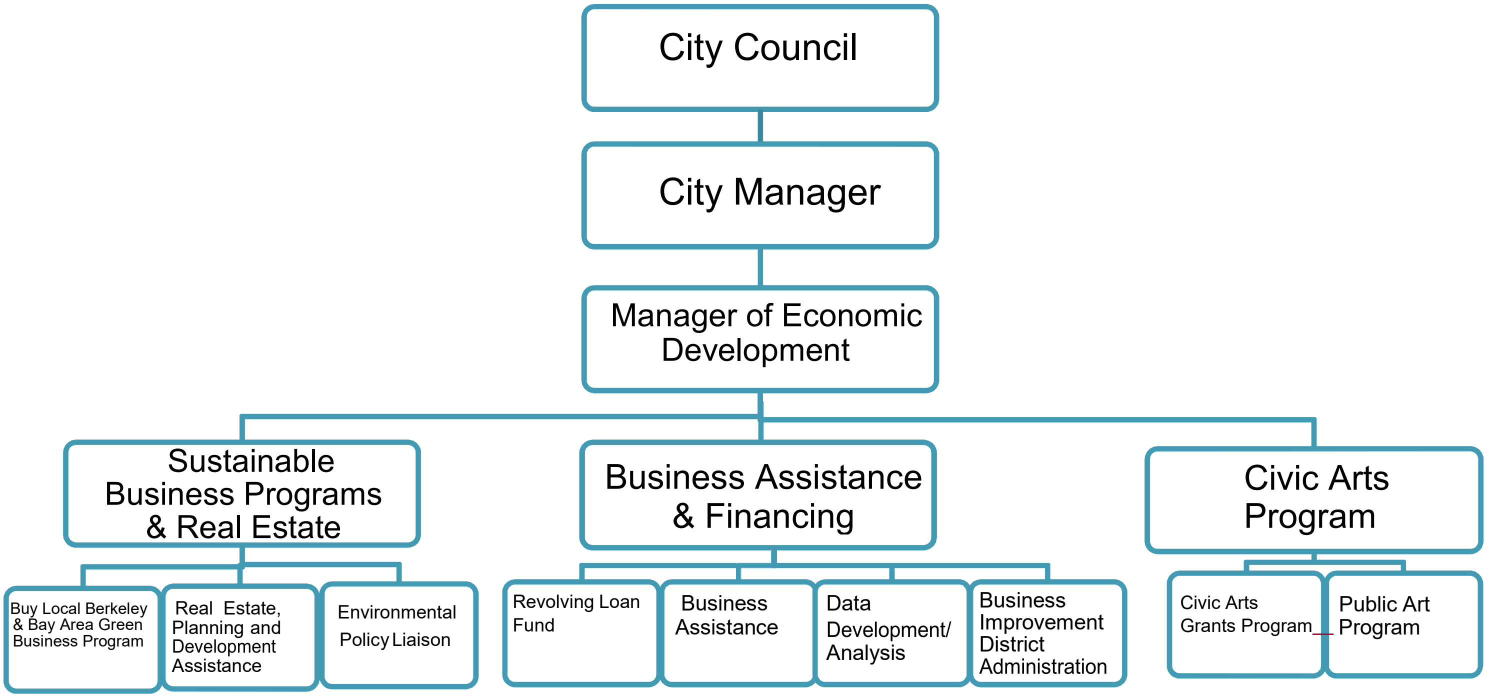


Exhibit B

City of Berkeley Revolving Loan Fund
Loan Application

CITY OF BERKELEY REVOLVING LOAN FUND (RLF)
1. RLF LOAN APPLICATION

Amount of City RLF loan request: $____________________

I. APPLICANT INFORMATION

Applicant's Name: ____

Title:______________________________ Date: _______________

Name of Business:
____

Ownership (Check one):
Proprietorship______Partnership______Corporation______Non-Profit _______

Business Address: ____

Phone:_____________________________ SS# __________________________

Co-applicant:______________________________ Phone: ___________________

Address: ____

[ ] Business New to Berkeley
OR
[ ] Existing Berkeley Business - Date Established ______________

Business License #__________________Federal Tax I.D. # _______________________

Landlord:____________________________________ Phone: __________________

Landlord Address: ____

Terms of Lease: ____

II. PROJECT FINANCING:

A. Amount of City Loan Request: $__________________
B. Applicant Equity Contribution*: $__________________

Purpose of Loan:
____

____

Source of Loan Repayment:
____

____

*Equity contribution: Value of money and other assets the Applicant invested in the business during the past 12 months or will invest in the business. Please submit evidence of all private funds (bank statements, letter of commitment, etc).

III. USE OF FUNDS:

	Amount of City Loan Request (listed on line A above)	(Plus)	Applicant's Equity Contribution (listed on line "B" above)*	(Equals)	TOTAL PROJECT COST
Inventory	$	+	$	=	$
Equipment & Machinery	$	+	$	=	$
Leasehold Improvements	$	+	$	=	$
Other	$	+	$	=	$
TOTAL	$		$	=	$

*Plus any additional Funds to be used for this project- including additional loans/ private funds.

IV. BUSINESS INFORMATION:

Briefly describe your business, the distinct function of your product / service, your intended customers, your marketing strategy, and how the RLF loan will assist your business development. Please submit a prepared business plan with this application. If no business plan available, please provide explanation

____

____

____

____

____

V. COLLATERAL OFFERED:

Collateral	Name(s) of Owner(s)	Present Market Value
Real Estate		$
Equipment & Machinery		$
Inventory		$
Other Assets		$
TOTAL		$

Other Collateral (Please Explain): ____

____

____

VI. BUSINESS DEBT SCHEDULE: This list should contain all long term loans for contracts and notes payable for the business, including credit cards. Please list EVERYTHING the business owes. If you need more room, please attach a separate sheet.

CREDITOR	Account Number		Original Amount ($)	Maturity Date	Collateral Held
	Date of Loan	Interest Rate %	Current Balance ($)	Monthly Payment ($)	
1.			$		
		%	$	$	
2.			$		
		%	$	$	

3.			$		
		%	$	$	
4.			$		
		%	$	$	
5.			$		
		%	$	$	
6.			$		
		%	$	$	
7.			$		
		%	$	$	
8.			$		
		%	$	$	

VII. PUBLIC BENEFIT: As a result of the loan, will your business:

a. Create jobs? [ ] YES [ ] NO

Estimate how many jobs the business will create in the next two years: ______

b. Retain existing jobs? [ ] YES [ ] NO

c. Create worker ownership opportunities? [ ] YES [ ] NO

d. Expand a manufacturing enterprise? [ ] YES [ ] NO

e. Have a positive environmental impact? [ ] YES [ ] NO

f. Strengthen a key commercial corridor or Re-use a long vacant property? [ ] YES [ ] NO

g. Provide goods/ services presently not available? [ ] YES [ ] NO

h. Substantially increase tax revenues? [ ] YES [ ] NO

Please describe the public benefits and quantify, where possible.

____

____

____

____

VIII. EMPLOYMENT

	TOTAL		WHITE		BLACK		ASAN		HISPANIC		AM. IND		OTHER	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Current Employees														
Management														
Professional														
Office/Clerical														
Skilled Workers														
Service / Maintenance														
Other														

New Job Creation :

Job Title and brief description	Full - Time	Part - Time	$ / Hour	Proj. Hire Date

How did you hear about the City's Revolving Loan program?

____

Are you familiar with the City's First Source Employment Program? [ ] YES [ ] NO

After this application is reviewed by City staff and determined to meet all appropriate lending criteria, additional supplemental material and a credit check may be requested.

We appreciate your interest in the economic revitalization of Berkeley.

I hereby certify that the information provided, contained herein and attached hereto is accurate and correct to the best of my knowledge.

______________________________	______________________________
APPLICANT Date	CO-APPLICANT Date
______________________________	______________________________
(Print Name)	(Print Name)

SUPPLEMENTAL MATERIAL CHECKLIST (please complete)

Please submit the following information with your application:

- A detailed list of exactly what the requested RLF loan would be used for.
- Most recent year-end financial statement, including income and expenses and balance sheet along with this pre-application form.
- Sources of funds need to be documented, including denial of bank for additional funds.
- Financial statement- prior 3 years and current within 90 days.
- a. Balance sheets
- b. Income/expense statement
- c. Articles of incorporation/ by-law or partnership agreement (if applicable)
- d. Resume(s) of principal(s) (normally those with 20% ownership or more; worker cooperatives should submit resumes of all members)
- e. Certificate of good standing (corporations only)
- Pro forma financial statements/ projections (including notes and schedules).
- a. One (1) year income/cash flow statement (month to month)
- b. Additional 2 years cash flow projections
- c. Explanation of the underlying assumptions supporting cash flow assumptions
- Individual Federal Income Tax Return – (if proprietorship or partnership) - prior 3 years.
- Business Federal Income Tax Return – prior 3 years.
- Plans, cost estimates/bids for construction or equipment.
- Appraisals or independent evaluations on assets offered as collateral.
- Aging of accounts receivable and payable within 90s days and list of vendors and addresses and account numbers for any accounts over 30 days.
- Schedule of Business Debts (including the following: original amount of debt, current balance outstanding, payment amount(s), payment amount, interest rate, collateral, status (current/delinquent).
- Private lender commitment or denial of funds letter(s).
- Verification of business space (i.e. deed of trust, lease/rental agreement,

purchase agreement as applicable).
- Agreement of Landlord (for tenant improvement loans).
- Copy of business license.
- Copy of Hazard and Liability Insurance.
- Business Plan for expansion or start-up loans.

Loan Fee:
If approved, the following will be required:
- **Application fee for RLF loan in the amount of $250.00 made payable to the City of Berkeley or to a third-party organization selected by the City Manager and/or his/her designee..**

The loan fee will be credited towards the 1% loan fee and will be refunded, if not approved.

Please send the above information to the following address:

Revolving Loan Fund Program – Application
City of Berkeley c/o Office of Economic Development
2180 Milvia Street, Fifth Floor
Berkeley, CA 94704

Exhibit C

Credit Authorization

**CREDIT AUTHORIZATION FOR THE CITY OF BERKELEY
REVOLVING LOAN FUND**

The following information is required to complete a credit investigation with respect to your loan fund application. This form is to be completed by every applicant, and each partner or shareholder holding a 20% or more interest in the business concern. In the case of a worker cooperative where no member holds a 20% or more interest, two or more members whose interests total at least 50% should each complete this form.

Legal Name: ______________________________________

Social Security #: ______________________________________

Birth Date: ______________________________________

Home Address: ______________________________________

____

Occupation: ______________________________________

"With my signature below, I hereby authorize the City of Berkeley's contracted loan underwriters to contact and obtain credit reports from credit reporting agencies (Equifax, Dun and Bradstreet, etc.) And creditors with regard to the status of any past, outstanding or current indebtedness for the life of the loan."

By: ______________________________________
Signature

____
Printed Name

Date: ______________________________________

Exhibit D

Applicant Checklist

CITY OF BERKELEY REVOLVING LOAN FUND APPLICATION
SUPPLEMENTAL INFORMATION

Applicant should submit the following items as applicable.

[ ] Financial Statement – Prior 3 years and current within 90 days
  a. Balance Sheets
  b. Income/Expense Statement
  c. Articles of Incorporation/By Laws or Partnership Agreement (If Applicable)
  d. Resume(s) of Principal(s) (normally those with 20% ownership or more)
  e. Certificate of Good Standing (corporations only)

[ ] Pro Forma Financial Projections (Including Notes & Schedules)
  a. 1 year Income/Cash Flow Statement (Month to Month)
  b. Additional 2 years Cash Flow Projections
  c. Explanation of the underlying assumption supporting the cash flow projections

[ ] Individual Federal Income Tax Return – (if proprietorship or partnership) – Prior 3 years.

[ ] Business Federal Income Tax Return – Prior 3 years.

[ ] IRS Form 4506, Request for Copy of Tax Return

[ ] Verification of business space (i.e. Deed of Trust, Lease/Rental Agreement, Purchase Agreement as applicable)

[ ] Agreement of Landlord (for tenant improvement loans)

[ ] Proof of Hazard and Liability Insurance

[ ] Plans, Cost Estimates/Bids for Construction or Equipment

[ ] Appraisals or independent evaluations on assets offered as collateral.

[ ] Aging of Accounts Receivable and Payable within 90 days and list of vendors and addresses and account numbers for any accounts over 30 days.

[ ] Schedule of Business Debts (Include the following: original amount of debt, current balance outstanding, payment amount(s), payment amount, interest rate, collateral, status (current/delinquent)

[ ] Private Lender Commitment or Denial of funds letter(s).

[ ] Copy of Business License

[ ] Environmental Checklist (if required for project)

The City of Berkeley and/or the RLF program underwriters will be conducting a credit check of your business and personal payment record, if applicable.

Exhibit E

Sample Loan Administration Board (LAB) Resolution

LOAN ADMINISTRATION BOARD
of the
CITY OF BERKELEY

The Loan Administration Board (LAB) administering the City of Berkeley's Revolving Loan Fund (RLF) met on , 20xx to discuss the RLF loan to___________and passed the following motion:

Moved by___________to approve loan with the requirements recommended in the underwriter's credit memo, and with the following additional requirements; 1) specific UCC-1 filing on____________; 2) blanket UCC-1 filing on all business assets; 3) direct disbursement of loan proceeds to vendors for equipment and to contractor for improvements; 4) 1st position on collateral; 5) signed tax returns; 6) audited financial statements for 200_; 7) other conditions:.

The staff recommendation on loan terms is as

follows: Principal Amount: $______
Loan Term: Due in months, amortized over months
Interest Rate: ____%
Monthly Payment: $_______per month

Seconded by_____________.

The Board vote with respect to this Motion was_Ayes,_Noes,Abstentions.
Board Members Absent:______________________________

____
Chairperson
Loan Administration Board

Exhibit F

Sample Commitment Letter

Loan Administration Board

Date:

Name of Borrower:
Re: Loan Approval/Intent to Lend

Dear Borrower:

This commitment letter will confirm that on behalf of the Berkeley Revolving Loan Fund, the Loan Administration Board of the RLF approved a commitment to make funds available to you substantially upon certain terms and conditions. This approval was made on_________________________.

1. Amount and Nature of Loan. Loan Amount ($000,000.00) associated with the business located at:
____

2. Purpose. The loan funds will be used solely for the acquisition of the commercial equipment,______, and related soft costs.

3. Maturity and Payment of Loan. The amortization of loan will be_____months , with a____-month call, and will be payable as follows: Principal and Interest payments, with interest commencing from date of note, with interest accruing at_______% fixed. The estimated payment amount is $___________per month, with first payment due the first day of the month following the original note date.

4. Interest. The stated interest rate on the loan will be_________percent (______%). Following any default, the interest rate shall increase to the maximum rate allowed by State of California Law after any default. Interest will be calculated based upon a 365-day year.

In the event any payment is more than fifteen (15) days past due, you will be assessed a late charge of five percent (5%) of the amount of such payment for each thirty (30) day period for which the payment is overdue.

Evidence of Obligation. The loan will be evidenced by a Loan Agreement and Promissory Note executed by you, together with the documents necessary to create and perfect security interests described herein.

5. Fees and Expenses. You shall pay all out-of-pocket expenses incurred by the RLF in connection with this transaction, including legal fees and disbursements of counsel and including by way of illustration, but not limited to appraisal costs, title insurance premiums and other related title company costs, escrow fees, UCC search fees and all recording fees, even in the event the transaction is not consummated.

6. Security Arrangements. The loan will be secured by a second position deed of trust on the commercial real property located at______________________; a first security filing on equipment of___________________, guarantees of____________________, __________________, and___________________; deed of trust on _____________________ personal residence at___________________; and deed of trust on______________________personal residence at_______________.

7. Conditions of Lending. The loan will be conditioned upon satisfaction of all required elements, for example, the following:

a. Execution by you of all documents required by the RLF to evidence the loan or any of the security interests described herein.

b. Approval by the RLF of the results of a title report and lien searches on equipment and fixtures.

c. The absence of any adverse change in your business or financial condition.

d. The City is satisfied that no hazardous waste or substances, toxic, waste, substances or pollutants are or have been used, generated, stored or removed on or from the real property to be covered by the deeds of trust described herein in violation of any federal, state or local law, rule or regulation. You will be required to indemnify the City against any such violations.

e. Your obtaining irrevocable written commitments from other lenders and providing such additional funds as are reasonably necessary in the discretion of the City to permit you to complete the acquisition and purchase of the property located at: _____________.

f. Your provision of evidence that__________________is organized and qualified to do business in this state.

g. A copy of your current business license from the City of Berkeley.

h. Payment of a loan fee in an amount equal to_____percent (%) of the loan at closing.

8. Covenants. In connection with the loan, you will be required to comply with all of the following:

1. Within time periods specified in the Loan Agreement you will be required to provide annual, CPA compiled financial statements to the RLF.

2. You will be required to provide evidence of adequate liability and property damage insurance in an amount and with a company satisfactory to the RLF as stipulated in the Loan Agreement.

9. Default: The Loan Agreement and other loan documents will contain provisions making any breach of any term or condition thereof a default.

10. Miscellaneous:
Funds used by the RLF to make the loan are be provided by the Economic Development Administration, (EDA), and as a consequence will be subject to certain restrictions and requirements, all of which will be described in the Loan Agreement.

You will not have any right to assign the loan or any of your interest therein. Time is of the essence in the performance of all of your obligations hereunder. This letter and the loan shall be construed and interpreted in accordance with the laws of the state of California.

ORAL AGREEMENTS, PROMISES, OR COMMITMENTS TO LOAN MONEY, EXTEND CREDIT, MODIFY OR AMEND ANY TERMS OF THE LOAN, RELEASE ANY GUARANTOR, FORBEAR FROM ENFORCING REPAYMENT OF THE LOAN OR EXERCISING ANY REMEDY UNDER THE LOAN DOCUMENTS, OR MAKE ANY OTHER FINANCIAL ACCOMMODATION PERTAINING TO THE LOAN ARE NOT ENFORCEABLE UNDER CALIFORNIA LAW.

This commitment is conditioned upon the preparation, execution and delivery of legal documentation in form and substance satisfactory to the RRLF and to its counsel, which documentation in addition to incorporating substantially the terms set forth above will include such other terms as are customary for transactions of this type. This commitment is further conditioned upon the strict compliance by the Borrower with all requirements of this commitment letter before the expiration date hereof.

Please evidence your approval of the foregoing to signing and returning the lender the enclosed copy (accompanied by the commitment fee referred to above) on or before ______________. If such executed copy (and fee) is not received by the RLF by such date, then this commitment shall automatically expire and be of no further force or effect.

Sincerely yours,

____

Economic Development Manager

Accepted this______day of_______, 200x.

BORROWER:

By:______________________________
Its:___________________________

Exhibit G

Sample Closing Checklist

CLOSING CHECKLIST
Applicant Name: ____________________
Approved: ____________________

ITEM REQUIRED				
	Required		**Received/Complete**	
	Yes	No	Yes	No
A. DOCUMENTS RECEIVED				
ATTORNEY ENGAGEMENT LETTER				
1. Commitment letter completed				
1a. Commitment letter returned				
2. Loan Agreement				
3. Note				
3.a. Amended Note				
4. Deed of Trust				
4a. Title Policy				
1. Assignment of Rents				
2. Assignment of (Commercial) Lease				
5. Guaranty (s)				
5.a. Acknowledgment and Consent				
6. Security Agreement				
6a. List of equipment for UCC.				
7. UCC-1 and/or UCC-2				
7a. UCC 11R				
8. Estoppel Certificate (8a/parties to Estoppel)				
9. Assignment of Cash Value/Life Insurance				
9a. Copy of Insurance Policy				
9b. Personal residence				

CLOSING CHECKLIST

Account Name: ____

Approved: ____

ITEM REQUIRED				
	Required		**Received/Complete**	
	Yes	No	Yes	No
B. FINAL CLOSING PROCESSS AND CROSS CHECK LIST				
1. Escrow/Disbursement Instructions				
2. Copy of lender(s) approval/commitment/decline letter				
3. Tenant and owner lease agreements received				
4. Title Commitment				
4. (a) Title Policy #				
Contact Name:				
5. Organizational documents and borrowing resolutions				
6. Liability and fire protection insurance binders				
7. Copy of purchase agreement/and amendments				
8. Bills/invoices to be paid from escrow				
9. Copies of architect, engineer, and construction contracts				
10. Receipt of performance bond, as required				
11. Copies of all construction lien releases				
12. Copies of all reports, certificates, or other documents furnished by construction lender				
13. Real estate appraisal and all addendum and/or amendments				
14. A certified survey with a legal description conforming to the title policy and the deed of trust				
15. Evidence that required equity has been provided				
16. Other (list below)				
16a. Order check for closing				
16b. Final review of documents				
16c. All insurance binders received				
16d. Prepare data entry sheet				

CLOSING CHECKLIST

Account Name: ______________________________

Approved: ______________________________

ITEM REQUIRED				
	Required		**Received/Complete**	
	Yes	No	Yes	No
C. DOCUMENTS TO BE REVIEWED AND/OR MODIFIED				
1. Promissory Note				
2. Security Agreement				
3. Loan Agreement				
3.a. UCC Filings				
4. Participation Agreement				
5. Continuing Guaranty				
6. Other documents				
7. Warrant Agreement				
8. Copies of Subordinated Debt				
9. Copies of Other Notes/Warrants				
10. Inter-creditor Agreement				

Exhibit H

Loan File Checklist

LOAN FILE CHECKLIST
Applicant: ____

APPLICANT: ____

MAILING ADDRESS: ____

CONTACT ADDRESS: ____

PHONE:(   )____________________________FAX:(   )____________________________
PROJECT ADDRESS: ____

CHECK ONLY THOSE REQUIRED FOR APPLICATION:

( ) Application	( ) Business Plan	( ) Balance Sheet & Income Statement (projected)	( ) Tax Returns
( ) Interim Statements	( ) Aging of A/R, A/P & Taxes	( ) Projected Cash Flow (12) months	( ) Personal Financial Statement

( ) Personal Tax return	( ) Business Tax return	( ) Personal credit report
( ) Business credit report	( ) Purchase & sale agreement	( ) Construction schedule
( ) Bid or cost estimates	( ) Appraisal or valuation	( ) List of other collateral
( ) Legal or Parcel Numbers	( ) Organizational documents	( ) List of existing loans, commitments, or equity investment
( ) Copies of tenant leases	( ) Copies of building leases	( ) Environmental Questionnaire
( ) NEPA/CEQA or other environmental reporting requirements.	( ) Completed loan write-up	( ) Other

COMMENTS: ____

____

Completed By: ______________________ Date:_____________

Does reviewer recommend this application for consideration & approval?

_____Yes __________No

Reviewed By:_________________________________ Date: ___________________

Exhibit I

Sample Servicing Report

LOAN SERVICING REPORT
Insurance, Jobs Report and Site Visits

START-UP LIST OF EXISTING AND PROJECTED JOBS:_____________

JOBS REPORTS DUE:______________________________________
JOB CREATION OBJECTIVE: (____) MET:_________________(Date)
JOB RETENTION OBJECTIVE: (____) MET:_________________(Date)

Job Creation/Retention Reports Received:

Date:	Employee Status:
Date:	Employee Status:
Date:	Employee Status:
Date:	Employee Status:
Date:	Employee Status:

Insurance Certificate with the RLF listed as Loss Payee Required on:

( ) FF&E ( ) Vehicles ( ) Real Estate ( ) Inventory
( ) Personal Residence ( ) Key Man Life Insurance
Other ( ) General Liability

Company Name: ____
Collateral Covered:____
Agent Name: ______________________Agent Phone:________________
Expires: ____

Company Name: ____
Collateral Covered: ____
Agent Name:____________________________Agent Phone:______________________

Expires:____________________________
Comments on Expirations/Change of Coverage:
____
____

LOAN MONITORING and SITE VISIT REPORT											
BORROWER:											
CONTACT NAME:											
PHONE NUMBER:			REPORT DATE								
REVIEWER NAME:											
NAME OF STAFF INTERVIEWED:											
PROJECT SITE VISIT:	Yes	No	FILE REVIEW ONLY?	Yes	No						
ORIGINAL LOAN PURPOSE (Use of Proceeds):											
			Days Delinquent								
STATUS OF LOAN:	Current										
	Delinquent										
G. LOAN AGREEMENT IN COMPLIANCE	Yes	No									
Comments											
JOB CREATION and/or RETENTION											
Full-time #	Part-time #	Minority/Ethnic Group									
	Hours worked per week:	Asian Pacific Islander									
FOLLOW-UP and/or REQUESTS TO BORROWER:											
DATE OF NEXT REVIEW:											

Exhibit J

Sample Default Notification Letter

LOAN DEFAULT NOTIFICATION LETTER

Date:

Borrower Name
Address
City, State, Zip

Loan #:
RE Account:
Amount Past Due:
Late Charges:

Dear (Borrower):

You are hereby notified that due to your failure to make the monthly payments due for (time-span, year), for the total amount indicated above, pursuant to the terms of that certain Promissory Note dated_______________in the original principal amount of $______________(the Note) given to you by the Berkeley Revolving Loan Fund (RLF), you are in default under the terms of the Note.

Pursuant to the terms of the Note, the City hereby demands that you pay all payments now due, together with accrued interest, late charges, and any costs or fees incurred by the Authority in connection with the default as provided in the Note.

The current principal balance of the Note is $___________as of____________, with interest accruing on the principal balance from_____________, the date of your default, at the rate of_____________(________%) per annum. In addition, you are required to pay a late charge equal to five percent (5%) of the amount of the monthly payment due for each thirty day period after fifteen days from the due date of such payment. Late charges accrued are indicated above.

All payments must be made to the City of Berkeley RLF at…………………………….

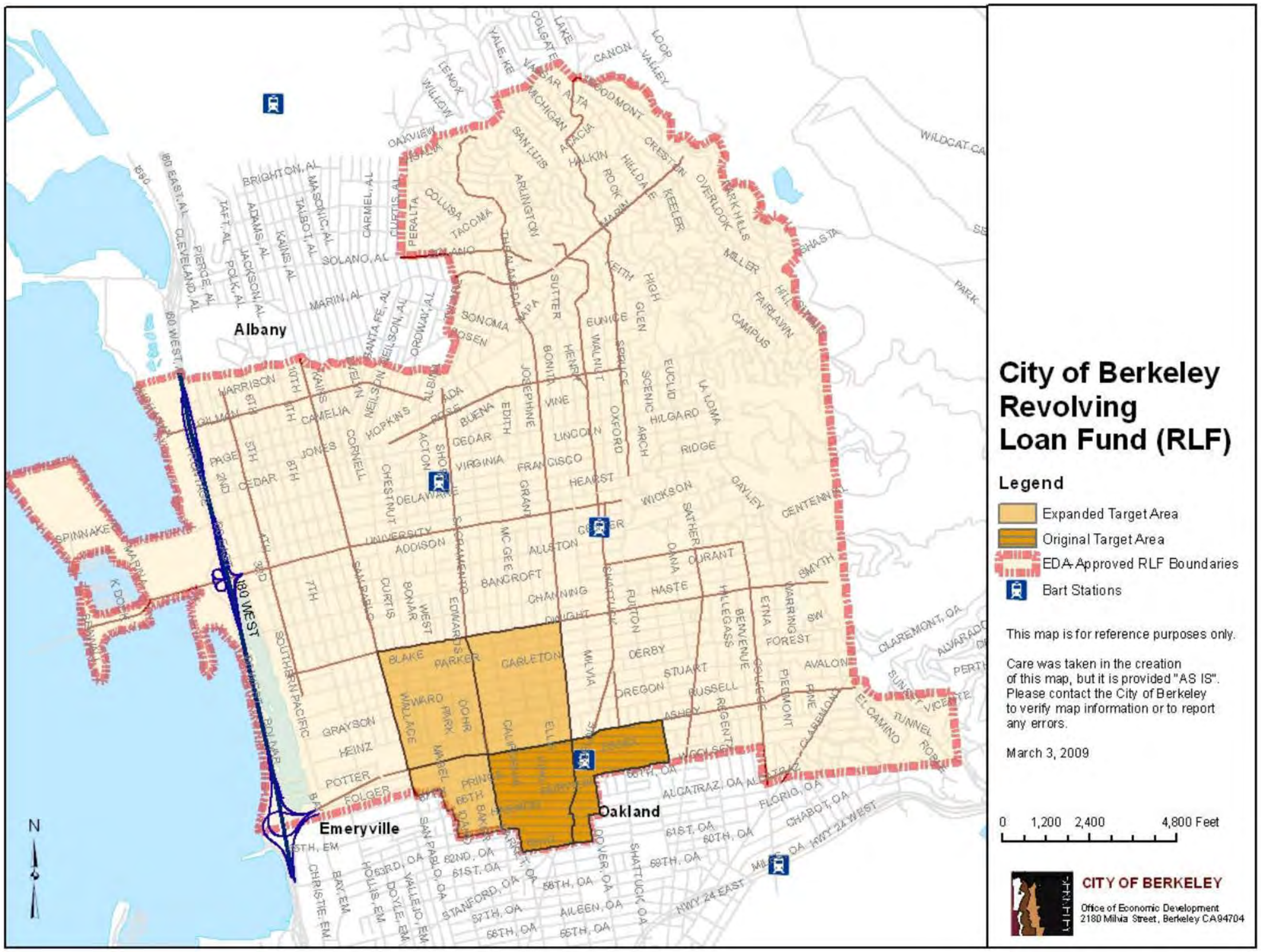
You are being given 30 days from the date of this letter to bring these payments current. Failure to do so will result in legal action against the corporation, and youpersonally.

Sincerely yours,

Economic Development Manager

Exhibit K

Map of Target Area



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

AUTHORIZING THE CITY MANAGER TO EXECUTE A SOLE SOURCE CONTRACT AND ANY AMENDMENTS WITH WORKING SOLUTIONS TO PROVIDE ADDITIONAL SMALL BUSINESS SUPPORT AND TECHNICAL ASSISTANCE TO BERKELEY'S COVID-19 RESILIENCY LOAN PROGRAM (RLP) PARTICIPANTS

WHEREAS, Working Solutions (a CDFI lender) has proven to be an effective partner implementing the underwriting services for the City of Berkeley's Revolving Loan Fund (RLF) since 2018; and

WHEREAS, Working Solutions has been a tremendous partner in providing underwriting services the COVID-19 Resiliency Loan Program (RLP) since its establishment 2020; and

WHEREAS, Working Solutions has worked steadily for more than two decades to develop and implement programs that address a wide range of important supports for small businesses and is a certified CDFI lender and is a successful well-regarded revolving loan and grant fund administrator in the Bay Area; and

WHEREAS, the Revolving Loan Fund's Administrative Plan, which governs both the RLF and the RLP loan programs, has been amended to incorporate the ability of a third-party administrator of the RLP program; and

WHEREAS, Working Solutions, a qualified CDFI lender, will now perform this role and will govern the origination and servicing of the *COVID-19 Resiliency Loan Program (*RLP) loans; and

WHEREAS, the efforts of Working Solutions will enhance the Berkeley RLP borrowers lending experience, and provide supplemental support and technical assistance to RLP program participants; and

WHEREAS, the anticipated term of the RLP loans is a period of five years, this engagement for supplemental technical assistance and support for RLP program participants shall correspond in length; and

WHEREAS, the City of Berkeley has been granted American Rescue Plan Act (ARPA) funds to provide additional support to small businesses impacted by the COVID-19 pandemic, assures a source of revenue for the service.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is hereby authorized to execute a contract and any amendments with Working Solutions not to exceed $60,000 of ARPA funds to support the RLP loan recipients for the period March 31, 2022 to December 31, 2027. A record signature copy of said contract and any amendments are to be filed in the Office of the City Clerk.

Office of the City Manager

06

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Henry Oyekanmi, Director, Finance

Subject: Formal Bid Solicitations and Request for Proposals Scheduled for Possible Issuance After Council Approval on March 22, 2022

RECOMMENDATION

Approve the request for proposals or invitation for bids (attached to staff report) that will be, or are planned to be, issued upon final approval by the requesting department or division. All contracts over the City Manager's threshold will be returned to Council for final approval.

Total estimated cost of items included in this report is **$12,952,000**.

PROJECT	**Fund**	**Source**	**Amount**
Micro-segmentation Solutions	011	General Fund	$360,000
FY 2022 Sidewalk Repair Project	511 501	Measure t1 Capital Improvements	$1835,000
Stormwater Master Plan (FY 23-24)	616	Clean Storm Water	$1,257,000
FY 2022 Streetlight Maintenance Project	142	Street Lighting	$500,000
On-Call Civil Engineering Services	501 511	Capital Improvements Measure T1	$5,000,000
On-Call Transportation Planning Services	306 307 134 135	Capital Grants – State Capital Grants – Local Measure bb – Local Streets and RD Measure BB – Bike and Pedestrian	$4,000,000
Total:			**$12,952,000**

CURRENT SITUATION AND ITS EFFECTS

On May, 6, 2008, Council adopted Ordinance No. 7,035-N.S. effective June 6, 2008, which increased the City Manager's purchasing authority for services to $50,000. As a result, this required report submitted by the City Manager to Council is now for those purchases in excess of $100,000 for goods; and $200,000 for playgrounds and construction; and $50,000 for services. If Council does not object to these items being sent out for bid or proposal within one week of them appearing on the agenda, and upon final notice to proceed from the requesting department, the IFB (Invitation for Bid) or RFP (Request for Proposal) may be released to the public and notices sent to the potential bidder/respondent list.

BACKGROUND

On May 6, 2008, Council adopted Ordinance No. 7,035-N.S., amending the City Manager's purchasing authority for services.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

The Finance Department reviews all formal bid and proposal solicitations to ensure that they include provisions for compliance with the City's environmental policies. For each contract that is subject to City Council authorization, staff will address environmental sustainability considerations in the associated staff report to City Council.

RATIONALE FOR RECOMMENDATION

Need for the services.

ALTERNATIVE ACTIONS CONSIDERED

None.

CONTACT PERSON

Darryl Sweet, General Services Manager, Finance, 510-981-7329

Attachments:

1: Formal Bid Solicitations and Request for Proposals Scheduled For Possible Issuance After Council Approval on March 22, 2022

1) Micro-segmentation Solutions
2) FY 2022 Sidewalk Repair Project
3) Stormwater Master Plan (FY 23-24)
4) FY 2022 Streetlight Maintenance Project

5) On-Call Civil Engineering Services

6) On-Call Transportation Planning Services

Note: Original of this attachment with live signature of authorizing personnel is on file in General Services.

NEXT 30 DAYS
DATE SUBMITTED: March 22, 2022

Attachment 1

SPECIFICATION NO.	DESCRIPTION OF GOODS / SERVICES BEING PURCHASED	APPROX. RELEASE DATE	APPROX. BID OPENING DATE	INTENDED USE	ESTIMATED COST	BUDGET CODE TO BE CHARGED	DEPT. / DIVISION	CONTACT NAME & PHONE
22-11501-C	Micro-segmentation Solutions	3/23/2022	4/14/2022	Micro-segmentation will enable the City of Berkeley (COB) visibility, alerting, policy creation, and policy enforcement from the network level to the individual process level. Implementing Micro-segmentation will reduce attack surface, introduce adaptive context-based access, limit lateral movement, offer more granular visibility, and control, rapid time-to-policy, and policy enforcement (global and selective).	$360,000	011-35-363-382-0000-000-472-612990-	Information Technology (IT)	Thomas Ray 981-6542
Dept TOTAL					$360,000			
22-11504-C	FY 2022 Sidewalk Repair Project	3/23/2022	4/21/2022	Repair sidewalk from the 50-50 Sidewalk Program backlog	$1,835,000	511-54-623-674-0000-000-431-665110-PWT1SW2201 (1,750,000) 501-54-623-674-0000-000-431-665110-PWT1SW2201 (85,000)	Public Works - Engineering	Joe Enke 981-6411 Terrence Salonga 981-6447

NEXT 30 DAYS
DATE SUBMITTED: March 22, 2022

SPECIFICATION NO.	DESCRIPTION OF GOODS / SERVICES BEING PURCHASED	APPROX. RELEASE DATE	APPROX. BID OPENING DATE	INTENDED USE	ESTIMATED COST	BUDGET CODE TO BE CHARGED	DEPT. / DIVISION	CONTACT NAME & PHONE
22-11505-C	Stormwater Master Plan (FY 23-24)	3/23/2022	4/15/2022	Prepare master plan document to plan, estimate costs for and prioritize future repairs, rehabilitation, and improvements to storm drainage within the City of Berkeley by using methods and inputs from the Watershed Master Plan (WMP), the Green Infrastructure Plan (GI Plan), and stormwater NPDES Permit. Other related Plans may also be utilized to support this Master Plan.	$1,257,000 Not to exceed: $1,257,000 ($628,500 from FY 2023; $628,500 from FY 2024)	616-54-623-675-0000-000-472-612310	PW/ Eng	Samantha Kinstrey, 981-6337 Ricardo Salcedo, 981-6407 Joe Enke, 981-6411
22-11506-C	FY 2022 Streetlight Maintenance Project	3/22/2022	4/15/2022	Purchase and installation of streetlight poles throughout Berkeley.	$500,000	142-54-623-674-0000-000-426-664110- PWENEL2201	PW Eng	Reeve Battle 981-6336
22-11507-C	On-Call Civil Engineering Services	3/23/2022	4/14/2022	On-call civil engineering design and construction management services for various infrastructure programs/projects including pavement rehabilitation, storm drain and green infrastructure	$5 million over 3 years	Funding is project based and subject to available funding. Initial funding will be from: 501-54-623-673-0000-000-431-612310: $50,000 511-54-623-673-0000-000-431-612310: $50,000	Public Works / Engineering	Joe Enke 981-6411

DATE SUBMITTED: March 22, 2022

SPECIFICATION NO.	DESCRIPTION OF GOODS / SERVICES BEING PURCHASED	APPROX. RELEASE DATE	APPROX. BID OPENING DATE	INTENDED USE	ESTIMATED COST	BUDGET CODE TO BE CHARGED	DEPT. / DIVISION	CONTACT NAME & PHONE
22-11508-C	On-Call Transportation Planning Services	3/23/2022	4/22/2022	Under direct supervision of City transportation planning staff, consultant will provide on-call transportation planning and conceptual project design services to the City. The RFQ will be used to procure four to five firms, with each contract having a not-to-exceed amount of $800,000 to $1 million.	FY23-FY26 Total of four (4) years $4,000,000	Funds anticipated to be charged in the first year include: 306 State Capital Grants: 30% 306-54-622-662-0000-000-431-612990-* 307 Local Capital Grants: 25% 307-54-622-662-0000-000-431-612990- * 134 Measure BB Local Streets & Roads: 20% 134-54-622-662-0000-000-431-612990- 135 Measure BB Bicycle & Pedestrian Program: 25% 135-54-622-662-0000-000-431-612990- *accounts for these grants will need to set up in the Planning division or will be budgeted to subdiv 668 instead	Public Works/ Transportation	Beth Thomas 981-7068
Dept TOTAL					$12,592,000			
DEPT. TOTAL					**$12,952,000**			

Office of the City Manager

07

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Abraham Roman, Fire Chief

Subject: Donation of Fire Apparatus and Equipment

RECOMMENDATION
Adopt a Resolution donating a surplus fire truck, Auto 910 and equipment, to the Livermore Pleasanton Department.

FISCAL IMPACTS OF RECOMMENDATION
Donation of fire apparatus will result in loss of funds from auctioning of the equipment. Estimated maximum value of auctioned equipment is $5,000 or less and the surplus fire equipment has little or no operational value due to its age.

CURRENT SITUATION AND ITS EFFECTS
The Livermore Pleasanton Fire Department in Northern California, has contacted the Berkeley Fire Department about the possibility of a donation of surplus apparatus and equipment.

The Livermore Pleasanton Fire Department provides fire protection, rescue and emergency medical services for the Cities of Livermore and Pleasanton in Alameda County. They require a used aerial ladder truck to provide training for their firefighters who drive and operate front line aerial apparatus for their department.

The donation of this fire truck will assist one of our mutual aid partners to conduct in service training for its members and also strengthens the already strong relationship between the two fire departments.

BACKGROUND
The Berkeley Fire Department has made donations of fire apparatus and equipment in the past. Usable equipment has been either maintained for use during major emergencies or disasters; when apparatus or equipment are no longer needed or become too expensive to maintain, they are sent to auction. The specialized nature of fire equipment means the demand for such equipment at auctions is usually low. Donation of equipment has provided more benefit in good will and help to communities in need than the small amount of revenue that may be achieved through auction.

The City has made donations of fire and police equipment in the past, including:

Date	**Beneficiary**	**Type of Surplus Equipment**
September, 2020	Bomberos Nayarit, Mexico	Two Fire Engines
September 20, 2015	Berkeley School District	Ambulance
March 9, 2010	El Bolson Fire Department, Argentina	Fire Engine
March 9, 2010	The Cities of: Izalco and Delgado, El Salvador	Two Fire Engines
March 9, 2010	Jocotenango Sacatepequez Fire Department, Guatemala	Ambulance
July 14, 2009	Berkeley Boosters Association	Passenger Vans and Trailers
September 23, 2008	El Bolson Fire Department, Argentina	Ambulance
September 23, 2008	East Cape Community/Social Service Foundation	Two Ambulances

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
There are no identifiable environmental effects or opportunities associated with the action requested in this report.

RATIONALE FOR RECOMMENDATION
The apparatus and equipment can be sent to auction, however due to the specialized nature of the equipment and its current condition (purchased in 1997) doing so would result in little interest except for parts. Donation of equipment has provided more benefit in good will and help to communities in need than the small amount of revenue that may be achieved through auction.

ALTERNATIVE ACTIONS CONSIDERED
The equipment can be sent to auction. However, the high-mileage, current condition, and specialized nature of the apparatus has typically resulted in little interest and low revenue.

CONTACT PERSON
Abe Roman, Fire Chief, (510) 981-3473

Attachments:
1: Resolution

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

DONATION OF FIRE APPARATUS AND EQUIPMENT

WHEREAS, City regulations require that surplus equipment and vehicles be disposed of through an auction procedure; and

WHEREAS, from time to time groups and organizations request donations of surplus equipment and/or vehicles; and

WHEREAS, the Livermore Pleasanton Fire Department has requested donation of one surplus fire truck to assist them in delivery of training for its members; and

WHEREAS, the surplus vehicle will result in little value at auction; and

WHEREAS, donation of the equipment and vehicles will generate good will and no additional costs to the City.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the surplus fire truck, Auto 910 be donated to the Livermore Pleasanton Fire Department.

08

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Abraham Roman, Fire Chief

Subject: Contract: Pinnacle for Occupational Physicals

RECOMMENDATION

Adopt a Resolution authorizing the City Manager to execute a contract and any amendments with Pinnacle Training Systems, LLC (Contractor) for occupational health and pre-employment medical examinations including cancer and cardiac screening for firefighters, paramedics, emergency medical technicians, police officers and other designated staff through March 22, 2026 in an amount not to exceed $325,000 per fiscal year with an option to extend for three additional two-year terms, for a total ten-year potential contract not to exceed $3,250,000.

FISCAL IMPACTS OF RECOMMENDATION

The base term of this contract runs for four (4) years from March 23, 2022 through March 22, 2026 not to exceed $325,000 per year. There is an option to extend for three additional two-year terms for a total term of ten years with cost increases in year three (2.5%), five (3.0%), seven (3.0%) and nine (3.0%). Funding for the annual physical program is already budgeted annually in the Fire Department budget: 147-72-742-835-0000-000-422-612410.

CURRENT SITUATION AND ITS EFFECTS

There is an existing contractor in place that is supposed to be delivering services. This existing contractor has demonstrated an inability to provide services meeting contact and city of Berkeley requirements. This includes frequently being unresponsive to staff communications via phone and email, conducting incomplete physical examinations that do not adhere to the City's specifications, and providing inaccurate or incomplete medical results to City employees. The current contractor also does not specialize in providing public safety physical examinations.

The City conducted a competitive bid process and Pinnacle Training Systems, LLC successfully met the bid requirements and ranked highest for annual physicals and cancer prevention among all bidders. The pricing is deemed to be fair and reasonable. The proposed Contractor is a woman-owned, California small business and has a long history of providing occupational physicals for first responders in California. Current agencies utilizing this contractor include; Clovis, Union City, Citrus Heights, Menifee, Placer County, Roseville, Alhambra, Fresno, Cosumnes, Novato, Healdsburg, Sanger, San Gabriel, Hanford, Selma, Stinson Beach, and Woodland. The Contractor also specializes in providing screening and early detection of acute and chronic health conditions that are common in first responders that lead to lost time and workers compensation cases. Services meet the standards articulated in *The Fire Service Joint Labor Management Wellness-Fitness Initiative, Fourth Edition* and *NFPA 1582: Standard on Occupational Medical Programs for Fire Departments.*

BACKGROUND

First responders have a higher rate of chronic medical and psychological injury and illness that has been directly correlated to shift work, traumatic experiences and stress, and exposure to carcinogens (Daniels, 2013) (Sritharan, 2017). Until recently there has been a stigma associated with coming forward with admission of psychological or medical conditions related to the work, thereby the data has been grossly under reported. Along with more funding dedicated to scientific research over the past several decades on these topics, it is now widely accepted that there are direct correlations from these disease processes to the work. Establishing and maintaining a complete annual physical and wellness program is critical in reducing lost time, mental illness, substance abuse and preventing or early detection of long-term chronic health conditions including cancer and heart disease within the first responder population.

Impacts of Shift Work

First responders routinely work shifts that cause disruption of the normal sleep/wake cycle. Nocturnal melatonin suppression and circadian rhythm disruption caused by night shift work function as carcinogens that increase the incidents of malignant tumors (Daniels, 2013) (Tsai, 2016). In addition to cancer, shift work has been associated with higher rates of Type II diabetes, heart disease, stroke, metabolic disorders, sleep disorders, increased risk for reproductive issues, such as irregular menstrual cycles, miscarriage, and preterm birth, chronic stress and depression (Smith, Cardiovascular Strain of Firefighting and the Risk of, 2016). Circadian disruption can harm biologic systems that help prevent cancer. For example, in addition to promoting sleep, melatonin can also inhibit tumor growth and protect against the spread of cancer cells.

Increase Risk of Cancer & Prevention

Research spanning decades, continents, and more than 80,000 firefighters validates the connection between firefighting and occupational cancer. Cancer is the most dangerous threat to firefighter health and safety today.

- Cancer caused 66 percent of the career firefighter line-of-duty deaths from 2002 to 2019, according to data from the International Association of Fire Fighters (IAFF). Heart disease caused 18 percent of career LODDs for the same period.
- Cancer caused 70 percent of the line-of-duty deaths for career firefighters in 2016 (Smith, Cardiovascular Strain of Firefighting and the Risk of, 2016).
- Firefighters have a 9 percent higher risk of being diagnosed with cancer and a 14 percent higher risk of dying from cancer than the general U.S. population, according to research by the CDC/National Institute for Occupational Health and Safety (NIOSH).

Firefighters' risks are significantly higher for some types of cancer than the general population, these include:

- testicular cancer – 2.02 times the risk (100% = double = 2 times);
- mesothelioma – 2.0 times greater risk;
- multiple myeloma -1.53 times greater risk;
- non-Hodgkin's lymphoma – 1.51 times greater risk;
- skin cancer – 1.39 times greater risk;
- malignant melanoma – 1.31 times greater risk;
- brain cancer -1.31 times greater risk;
- prostate cancer – 1.28 times greater risk;
- colon cancer -1.21 times great risk; and
- leukemia – 1.14 times greater risk (Daniels, 2013).

Continual and early screening is key. Screening is done when employees have no signs or symptoms. These tests help detect cancer at an early stage, before symptoms appear. When abnormal tissue or cancer is found early, it is often easier to treat or cure. By the time signs and symptoms appear, the cancer may have grown and spread making it more difficult, costly, or impossible to treat or cure.

Mental Health

First responders are more likely to die by suicide than in the line of duty. In 2017, there were at least 103 firefighter suicides and 140 police officer suicides in the US. In contrast, 93 firefighters and 129 police officers died in the line of duty. Suicide is a result of mental illness, including depression and PTSD, which stems from constant exposure to death and destruction.

There are a number of factors contributing to mental health issues among first responders and what leads to their elevated rate of suicide. One study found that on average, police officers witness 188 ‘critical incidents’ during their careers. This exposure to trauma can lead to several forms of mental illness. For example, PTSD and depression rates among firefighters and police officers have been found to be as much as 5 times higher than the rates within the civilian population, which causes these first responders to commit suicide at a considerably higher rate (firefighters: 18/100,000; police officers: 17/100,000; general population 13/100,000). Even when suicide does not occur, untreated mental illness can lead to poor physical health and impaired decision-making.

In addition, the Firefighter Behavioral Health Alliance (FBHA) estimates that approximately 40% of firefighter suicides are reported. If these estimates are accurate, the actual number of 2017 suicides would be approximately 257, which is more than twice the number of firefighters who died in the line of duty.

Entry level and comprehensive annual physicals are known to reduce healthcare costs, reduce absenteeism and reduce workers compensation costs associated with injuries and illness (Pinnacle, 2018) (Lynn Hancock, 2017). Additionally, responders that are healthy are more resilient, make better decisions and are more likely to be at work. The Contractor will provide entry level and annual physicals inclusive of screening for common acute and chronic health conditions.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Contractor will also be providing all services within the City of Berkeley, whereas previous contracts required employees to travel outside the City to participate in physicals and follow up examinations.

RATIONALE FOR RECOMMENDATION

The City conducted a competitive bid process and Pinnacle Training Systems, LLC successfully met the bid requirements and ranked highest for annual physicals and cancer prevention among all bidders. The pricing is deemed to be fair and reasonable.

The contract with Pinnacle Training Systems, LLC will benefit the City by affording a long-term continuity of excellent medical surveillance services to identify and/or prevent acute and chronic conditions that may otherwise go unidentified by vendors that have less specialized experience. Pinnacle provides occupational health services to a wide variety of emergency services providers within California.

ALTERNATIVE ACTIONS CONSIDERED

Staff considered remaining with the current vendor, but this is not a viable solution if the City wishes to meet a commitment to providing the initial and on-going annual screening that will detect chronic disease development early. Additionally, the current vendor has consistently demonstrated poor customer service including frequently being unresponsive to staff communications, conducting incomplete employee physicals, providing inaccurate or incomplete medical results and providing employee's medical information to the wrong employees.

CONTACT PERSON
Abraham Roman, Interim Fire Chief, (510) 981-3473

Attachments:

1. Resolution
2. Daniels, a. a. (2013). Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950− 2009). *Occupational & Environmental Medicine*.
3. Lynn Hancock, M. (2017). *Law Enforcement Fitness Policies in Relation to Job.* Walden Dissertations and Doctoral Studies.
4. Nord, e. a. (2011). Accuracy of peak VO2 assessments in career. *Journal of Occupational Medicine and Toxicology*.
5. Pinnacle. (2018). Evidence that Wellness Programs Reduce Worker's Compensation Costs for Police Departments.
6. Poplin, e. a. (2013). The Association of Aerobic Fitness With Injuries in the Fire Service. *American Journal of Epidemiology*.
7. Smith, e. a. (2011). Firefighter Fitness: Improving Performance. *Current Sports Medicine Reports*.
8. Smith, e. a. (2016). Cardiovascular Strain of Firefighting and the Risk of. *Exercise and Sport Sciences Reviews*.
9. Sritharan, e. a. (2017). Prostate cancer in firefighting and police. *Environmental Health*.
10. Tsai, e. a. (2016). Risk of Cancer Among Firefighters in California, 1988–2007. *Am J Ind Med.*

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

Contract: Pinnacle Training Systems, LLC for occupational health annual and pre-employment medical examinations;

WHEREAS, first responders have a higher rate of chronic medical and psychological injury and illness that has been directly correlated to shift work, traumatic experiences and stress, and exposure to carcinogens, and

WHEREAS, cancer caused 66 percent of the career firefighter line-of-duty deaths from 2002 to 2019, according to data from the International Association of Fire Fighters (IAFF), and

WHEREAS, firefighters have a 9 percent higher risk of being diagnosed with cancer and a 14 percent higher risk of dying from cancer than the general U.S. population, and

WHEREAS, PTSD and depression rates among firefighters and police officers have been found to be as much as 5 times higher than the rates within the civilian population, which causes these first responders to commit suicide at a considerably higher rate (firefighters: 18/100,000; police officers: 17/100,000; general population 13/100,000), and

WHEREAS, routine annual physicals have been proven to reduce healthcare and workers compensation costs associated with injuries and illness, and

WHEREAS, first responders that are healthy (medically and psychiatrically) are more resilient, make better decisions and are more likely to be at work.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute a contract and any amendments with Pinnacle Training Systems, LLC (Contractor) to provide occupational health annual and pre-employment medical examinations including cancer screening for the first responders from March 23, 2022 through March 22, 2026 in an amount not to exceed $325,000 per fiscal year with an option to extend for three additional two-year terms, for a total ten-year potential contract amount not to exceed $3,250,000.

Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950–2009)

Robert D Daniels, Travis L Kubale, James H Yiin, et al.

Occup Environ Med published online October 14, 2013
doi: 10.1136/oemed-2013-101662

Notes

OEM Online First, published on October 14, 2013 as 10.1136/oemed-2013-101662

ORIGINAL ARTICLE

Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950–2009)

Robert D Daniels,[1] Travis L Kubale,[1] James H Yiin,[1] Matthew M Dahm,[1] Thomas R Hales,[1] Dalsu Baris,[2] Shelia H Zahm,[2] James J Beaumont,[3] Kathleen M Waters,[1] Lynne E Pinkerton[1]

▸ Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/oemed-2013-101662).

[1]Division of Surveillance, Hazard Evaluations, and Field Studies, National Institute for Occupational Safety and Health, Cincinnati, Ohio, USA
[2]Division of Cancer Epidemiology and Genetics, National Cancer Institute, Gaithersburg, Maryland, USA
[3]UC Davis Department of Public Health Sciences, Davis, Sacramento, California, USA

Correspondence to
Dr Robert D Daniels, Division of Surveillance, Hazard Evaluations, and Field Studies, National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Mailstop R-13, Cincinnati, OH 45226, USA; rtd2@cdc.gov

Received 12 June 2013
Revised 10 September 2013
Accepted 23 September 2013

ABSTRACT

Objectives To examine mortality patterns and cancer incidence in a pooled cohort of 29 993 US career firefighters employed since 1950 and followed through 2009.

Methods Mortality and cancer incidence were evaluated by life table methods with the US population referent. Standardised mortality (SMR) and incidence (SIR) ratios were determined for 92 causes of death and 41 cancer incidence groupings. Analyses focused on 15 outcomes of a priori interest. Sensitivity analyses were conducted to examine the potential for significant bias.

Results Person-years at risk totalled 858 938 and 403 152 for mortality and incidence analyses, respectively. All-cause mortality was at expectation (SMR=0.99, 95% CI 0.97 to 1.01, n=12 028). There was excess cancer mortality (SMR=1.14, 95% CI 1.10 to 1.18, n=3285) and incidence (SIR=1.09, 95% CI 1.06 to 1.12, n=4461) comprised mainly of digestive (SMR=1.26, 95% CI 1.18 to 1.34, n=928; SIR=1.17, 95% CI 1.10 to 1.25, n=930) and respiratory (SMR=1.10, 95% CI 1.04 to 1.17, n=1096; SIR=1.16, 95% CI 1.08 to 1.24, n=813) cancers. Consistent with previous reports, modest elevations were observed in several solid cancers; however, evidence of excess lymphatic or haematopoietic cancers was lacking. This study is the first to report excess malignant mesothelioma (SMR=2.00, 95% CI 1.03 to 3.49, n=12; SIR=2.29, 95% CI 1.60 to 3.19, n=35) among US firefighters. Results appeared robust under differing assumptions and analytic techniques.

Conclusions Our results provide evidence of a relation between firefighting and cancer. The new finding of excess malignant mesothelioma is noteworthy, given that asbestos exposure is a known hazard of firefighting.

What this paper adds

- From previous studies, there is limited epidemiological evidence of increased risk of cancer from firefighting.
- We examined cancer in 30 000 career firefighters by pooling information from urban fire departments in three large US cities. The large sample size and long follow-up period improved risk estimates compared with previous studies.
- We report that firefighting may be associated with increased risk of solid cancers. Furthermore, we report a new finding of excess malignant mesothelioma among firefighters, suggesting the presence of an occupational disease from asbestos hazards in the workplace.

Linked

▸ http://dx.doi.org/10.1136/oemed-2013-101803

To cite: Daniels RD, Kubale TL, Yiin JH, *et al*. *Occup Environ Med* Published Online First: [*please include* Day Month Year] doi:10.1136/oemed-2013-101662

INTRODUCTION

There are approximately 1.1 million volunteer and career firefighters in the US.[1] During firefighting activities, these workers may be exposed to many known carcinogens (eg, polycyclic aromatic hydrocarbons (PAHs), formaldehyde, benzene, 1,3-butadiene, asbestos and arsenic) in volatilised combustion and pyrolysis products or debris.[2] These exposures have raised concerns of increased cancer among firefighters and have prompted a number of exposure assessment and epidemiologic investigations. Some studies have found excess cancers of the brain,[3–8] digestive tract,[4 5 7–10] genitourinary tract[5 7 11 12] and lymphohematopoietic organs.[6 8 13] In a recent meta-analysis of 32 studies, significant excess risk was reported for brain, stomach, colon, rectum, prostate, testes, multiple myeloma and non-Hodgkin lymphoma (NHL).[14] Similarly, the International Agency for Research on Cancer (IARC) reviewed 42 studies and reported significant summary risks for prostatic and testicular cancers and NHL.[2] Given limited evidence, however, IARC concluded that firefighter exposures were only possibly carcinogenic to humans (Group 2B).

Most studies have examined mortality, but not cancer incidence, among relatively few firefighters recruited from one fire department. The current study examines mortality and cancer incidence in a pooled cohort of firefighters employed in three major US cities. Malignancies of the brain, stomach, oesophagus, intestines, rectum, kidney, bladder, prostate, testes, leukaemia, multiple myeloma and NHL were of a priori interest in the current study, based on possible sites identified in previous reviews.[2 14] Lung cancer and chronic obstructive pulmonary disease (COPD) were also of interest because inhalation is a major pathway for firefighter exposures, and there is evidence of chronic and acute inflammatory respiratory effects in firefighters, which may be linked to cancer.[2] Breast cancer was included as a result of interests shared in researcher discussions with firefighters.

METHODS

Data collection methods

This research was approved by the Institutional Review Boards of the National Institute for Occupational Safety and Health (NIOSH) and the National Cancer Institute (NCI). Personnel records and previous study data were used to assemble the study roster, which comprised male and female career firefighters of all races employed for at least 1 day in fire departments serving San Francisco, Chicago, or Philadelphia, from 1 January 1950, through 31 December 2009. Fire departments were selected based on size, location, work experience, records availability and the willingness of labour and city management to participate. 'Career firefighter' status was determined from job titles categorised by researchers and vetted by each fire department. Selected job titles included general classifications of firefighters, firefighter paramedics, and fire department arson investigators. Persons of known race were mostly Caucasian (81%) and those missing race (2.5%) were hired in earlier periods of lower minority hiring (median year at hire=1955). Therefore, persons missing race were assumed Caucasian and retained in main analyses to maximise study size. Analyses were also conducted excluding persons of unknown race.

Vital status was ascertained from the National Death Index-Plus (NDI-Plus), the Social Security Administration Death Master File (SSA-DMF), personnel and pension board records, and records from the previous studies.[9 10] Firefighters not found to be deceased were confirmed alive by matches to employment records, Internal Revenue Service (IRS) records, and data accessible through LexisNexis (a private vendor of residential information).

Causes of death were obtained from previous studies,[9 10] NDI-Plus, and death certificates collected from state vital records and retirement boards. Deaths of Philadelphia firefighters through 1986 were previously determined by Baris *et al*,[9] who retrieved and coded death certificates to the ninth revision of the International Classification of Diseases (ICD-9). San Francisco firefighter deaths were determined through 1982 by Beaumont *et al*.[10] In that and the current study, causes of death were coded to the ICD revision in effect at the time of death. The underlying cause of death determined by a trained nosologist was used for all mortality analyses.

Incident cases were defined as all primary invasive cancers, and in situ bladder cancers among firefighters matched to state cancer registries on name, gender, race, date of birth and Social Security number. The last known residence and the state of death were used to narrow inclusion of registries for case ascertainment to 11 states (ie, Arizona, California, Florida, Illinois, Indiana, Michigan, Nevada, New Jersey, Oregon, Pennsylvania and Washington) where nearly 95% of all deaths in known states occurred (see online supplementary table S1). The site and histology of each tumour were used to classify cancers in one of 41 diagnostic groups using the International Classification of Diseases for Oncology, 3rd Edition (ICD-O-3).[15] The conversion from ICD-O-3 to ICD-10 used the Surveillance, Epidemiology and End Results Program (SEER) recodes (dated 27 January 2003) following slight modification to align with mortality groupings and to account for recent classification changes. Diagnosis dates were assigned as of 1 July of the year of diagnosis if only the diagnosis year was known, and on the 15th of the month of diagnosis if only the diagnosis month and year were known. The death date was used when death preceded the estimated date.

Statistical methods

The NIOSH Life Table Analysis System (LTAS.NET) was used to examine mortality and cancer incidence.[16] Main analyses used the US population as referent. In all analyses, person-years at risk (PYAR) were stratified by gender, race (Caucasian, other races), age (age 15–85+ years in 5-year categories), and calendar year (in 5-year categories). Confidence limits for risk measures were estimated based on a Poisson distribution for the observed outcome, with exact limits for outcomes with 10 or fewer occurrences.

For mortality analyses, PYAR began on the latest of 1 January 1950 or the date of cohort inclusion, and ended the earliest of the date of death (DOD), the date last observed (DLO), or 31 December 2009. US mortality rates (1950–2009) were used to estimate the expected numbers of deaths for all causes, all cancers and 92 categories of underlying cause of death.[17] Additional mortality rates were developed to separately report on cancers of the small intestine, large intestine and testes to coincide with incidence rates; however, these rates were limited to time periods after 1959. In both cases, the subsites of interest (ie, colon and testes) account for the largest proportion of the deaths in the respective aggregate site (ie, intestine or male genital organs excluding prostate); therefore, the aggregate site reasonably approximates the subsite. The standardised mortality ratio (SMR) was calculated as the ratio of the observed to the total number of expected deaths.

Two approaches were used to examine cancer incidence. The main analyses included first and later primary cancers (ie, multiple-cancer approach) occurring within the risk period. PYAR accrued from the date of statewide ascertainment by the respective fire department's state cancer registry (eg, 1 January 1988 for San Francisco firefighters (see online supplementary table S1)) or cohort inclusion, whichever was latest, and ended at the earliest of the DOD, DLO, or 31 December 2009. Secondary analyses were restricted to the first occurrence of invasive cancer (ie, first-cancer approach). In these analyses, PYAR for cases ended on the date of first diagnosis. In both approaches, the standardised incidence ratio (SIR) was calculated as the ratio of observed malignancies to the expected number of cases estimated using US incidence rates (1985–2009) calculated from SEER data.[18] Additional steps required for first-cancer analyses were: selecting the most common cancer when diagnoses included multiple primary tumours on the same day (n=21), excluding firefighters known to have a cancer diagnosis prior to the start of the risk date (n=55), and adjusting US rates for cancer prevalence using methods described by Merrill *et al*.[19]

Heterogeneity in fire department-specific SMRs and SIRs was examined using Poisson regression modelling. To control for gender, age, calendar year and race, an offset term was set to the expected number of deaths or cases in each stratum of the classification table. To address differences between fire departments, a mixed model was used that specified a random intercept term. Thus, the model intercept is the log of the pooled SMR, adjusted for heterogeneity among the fire departments. The significance of heterogeneity was assessed by likelihood ratio test (significance level of 0.05).

Several sensitivity analyses were conducted. First, we examined the effects of including prevalent hires (workers employed before 1950) and short–term workers (those employed <1 year) in mortality analyses. Prevalent hires must be employed long enough to be recruited into the study; thus, these workers may have a survival advantage compared with persons hired during the follow-up period (ie, incident hires).[20] Short-term workers include temporary hires and probationary firefighters whose health and lifestyle patterns may differ from those employed one or more years. Short-term workers may also have had substantial occupational histories other than as firefighters, possibly in jobs with hazardous exposures. Second, we examined age effects on risk estimates in two age-at-risk categories (17–64, 65+ years). Testing of an effect across all 5-year age groups was accomplished using mixed models adjusted for age-at-risk groups. Third, we conducted SMR analyses restricting observation to age 84 years or less. Including PYAR for ages 85+ years could bias results from: rates used in analyses that are open-ended, more uncertainty in underlying cause of death at later ages, and subjects who are incorrectly traced as alive having a disproportionate effect in the open-ended age group.[21] Fourth, we calculated SMRs using California, Illinois and Pennsylvania State populations as referent for firefighters from San Francisco, Chicago and Philadelphia, respectively. Last, SMRs and standardised rate ratios (SRRs) were calculated for categories of employment duration (<10, 10–<20, 20–<30, 30+ years). Trend slopes with Wald-based two-sided p values (significance level of 0.05) were calculated for the change in SRRs with increasing duration.

RESULTS

There were 29 993 firefighters available for study, contributing 858 938 PYAR (table 1). The cohort was largely male (97%), with mean age at first employment and total years employed of 29 and 21 years, respectively. Fewer than 5% of firefighters were short-term workers and approximately 30% were first employed prior to 1950. A higher percentage of women (9.4%) were short-term workers compared with men (4.3%) (see online supplementary table S2). Prevalent hires, on average, tended to be employed longer (+7.9 years, t test p<0.001) and had a greater attained age (+17.0 years, t test p<0.001) than incident hires. Persons eligible for incidence analyses using the multiple-cancer approach (n=24 453) contributed 403 152 PYAR. The first-cancer approach included 24 398 persons contributing 383 577 PYAR. There were 4461 malignant tumours distributed among 3903 firefighters with cancer. Among these, 488 reported cancers at multiple primary sites. Mortality and cancer incidence results are summarised in table 2 and in online supplementary tables S3–S5. To aid in comparisons with previous studies, table 2 also shows summary risk estimates (SREs) reported by LeMasters *et al*[14], whose meta-analysis included studies published through 2003.

Mortality

With the US population referent, all-cause mortality was at expectation (SMR=0.99, 95% CI 0.97 to 1.01, n=12 028). Ischaemic heart disease was the leading cause of death (SMR=1.01, 95% CI 0.98 to 1.04, n=3619). There was significantly decreased mortality in other outcomes that may be related to healthy worker selection and survivor effects (HWE), such as non-malignant respiratory diseases (SMR=0.80, 95% CI 0.74 to 0.86, n=796), cerebrovascular disease (SMR=0.91, 95% CI 0.84 to 0.98, n=636), diabetes mellitus (SMR=0.72, 95% CI 0.62 to 0.83, n=175), nervous system disorders (SMR=0.80, 95% CI 0.69 to 0.93, n=187), and alcoholism (SMR=0.61, 95% CI, 0.41 to 0.86, n=31). In particular, there was a strong decrease in COPD mortality (SMR=0.72, 95% CI

Table 1 Demographic characteristics of the cohort by fire department and combined (1950–2009)

Description	All fire departments	San Francisco	Chicago	Philadelphia
Study cohort:				
Eligible for mortality analysis	29 993	5313	15 185	9495
PYAR	858 938	154 317	419 414	285 207
Years of follow-up; avg. (SD)	29 (16)	29 (16)	28 (16)	30 (16)
Race (%):				
White	24 244 (80.8)	4254 (80.1)	11 736 (77.3)	8254 (86.9)
Other	5008 (16.7)	986 (18.6)	2808 (18.5)	1214 (12.8)
Unknown	741 (2.5)	73 (1.4)	641 (4.2)	27 (<1.0)
Gender (%):				
Male	29 002 (96.7)	5009 (94.3)	14 694 (96.8)	9299 (97.9)
Female	991 (3.3)	304 (5.7)	491 (3.2)	196 (2.1)
Vital status:				
Alive (%)	17 965 (59.9)	3239 (61.0)	9241 (60.9)	5485 (57.8)
Deceased (%)	12 028 (40.1)	2074 (39.0)	5944 (39.1)	4010 (42.2)
Unknown cause of death	144	9	91	44
Attained age*; avg. (SD)	60 (16)	62 (16)	59 (16)	61 (16)
LTFU	175	1	32	142
PYAR potentially LTFU (%)	8809 (1.0)	59 (<1.0)	1483 (<1.0)	7267 (2.5)
Employment:				
Avg. hire year	1968	1967	1970	1965
Age at hire; avg. (SD)	29 (5)	29 (5)	29 (5)	27 (5)
Employment years; avg. (SD)	21 (11)	22 (11)	21 (11)	21 (11)
Hired before 1950 (%)	8085 (27)	1682 (32)	3294 (22)	3109 (33)
Employed <1 year (%)	1328 (4.4)	194 (3.7)	891 (5.9)	243 (2.6)

*Age attained at earliest of the date of death, date LTFU or 31 December 2009.
Avg., average; LTFU, lost to follow-up; PYAR, person-years at risk.

Table 2 Standardised mortality and incidence ratios in firefighters for select outcomes compared to results from a recent meta-analysis

	Current study results (US population referent)						Meta-analysis of LeMasters *et al*[14]*	
	Mortality (1950–2009)†		Cancer incidence (1985–2009)					
			All cancers		First cancer			
Underlying cause (ICD-10 codes)	**Obs**	**SMR (95% CI)**	**Obs**	**SIR (95% CI)**	**Obs**	**SIR (95% CI)**	**Studies**	**SRE (95% CI), Likelihood rating**
All cancers (C00-C97)	3285	1.14 (1.10 to 1.18)	4461	1.09 (1.06 to 1.12)	3890	1.09 (1.06 to 1.12)	25	1.05 (1.00 to 1.09), 3
MN oesophagus (C15)	113	1.39 (1.14 to 1.67)	90	1.62 (1.31 to 2.00)	80	1.71 (1.36 to 2.13)	8	1.16 (0.86 to 1.57), 3
MN stomach (C16)	110	1.10 (0.91 to 1.33)	93	1.15 (0.93 to 1.40)	72	1.02 (0.80 to 1.28)	13	1.22 (1.04 to 1.44), 2
MN intestine (C17-C18)	326	1.30 (1.16 to 1.44)	398	1.21 (1.09 to 1.33)	351	1.29 (1.16 to 1.43)	NA	NA
MN large intestine (C18)	264	1.31 (1.16 to 1.48)	381	1.21 (1.09 to 1.34)	335	1.28 (1.15 to 1.43)	25	1.21 (1.03 to 1.54), 2
MN small intestine (C17)	8	1.66 (0.72 to 3.27)	17	1.15 (0.67 to 1.85)	16	1.43 (0.82 to 2.33)	NA	NA
MN rectum (C19-C21)	89	1.45 (1.16 to 1.78)	166	1.11 (0.95 to 1.30)	140	1.09 (0.91 to 1.28)	13	1.29 (1.10 to 1.51), 2
MN lung (C33-C34)	1046	1.10 (1.04 to 1.17)	716	1.12 (1.04 to 1.21)	602	1.13 (1.04 to 1.22)	19	1.03 (0.97 to 1.08), 3
MN breast (C50)	8	1.39 (0.60 to 2.73)	26	1.26 (0.82 to 1.85)	24	1.32 (0.84 to 1.96)	NA	NA
MN prostate (C61)	282	1.09 (0.96 to 1.22)	1261	1.03 (0.98 to 1.09)	1176	1.03 (0.97 to 1.09)	13	1.28 (1.15 to 1.43), 1
MN other male genital (C60, C62-C63)	<5	0.47 (0.13 to 1.20)	17	0.62 (0.36 to 0.99)	17	0.67 (0.39 to 1.07)	NA	NA
MN testes (C62)	<5	0.73 (0.15 to 2.14)	15	0.75 (0.42 to 1.24)	15	0.79 (0.44 to 1.30)	4	2.02 (1.30 to 3.13), 2
MN kidney (C64-C66)	94	1.29 (1.05 to 1.58)	166	1.27 (1.09 to 1.48)	129	1.24 (1.04 to 1.48)	12	1.07 (0.78 to 1.46), 3
MN bladder (C67-C68)‡	84	0.99 (0.79 to 1.22)	316	1.12 (1.00 to 1.25)	272	1.18 (1.05 to 1.33)	11	1.20 (0.97 to 1.48), 3
MN brain (C47, C70-C72)	73	1.01 (0.79 to 1.27)	51	1.02 (0.76 to 1.34)	48	1.06 (0.78 to 1.41)	19	1.32 (1.12 to 1.54), 2
NHL (C46.3, C82-C85, C88.0, C88.3, C91.4, C96)§	123	1.17 (0.97 to 1.40)	170	0.99 (0.85 to 1.15)	145	0.99 (0.83 to 1.16)	8	1.51 (1.31 to 1.73), 1
Leukaemia (C91.0-C91.3, C91.5-C91.9, C92-C95)	122	1.10 (0.91 to 1.31)	100	0.94 (0.77 to 1.15)	85	0.93 (0.74 to 1.15)	8	1.14 (0.98 to 1.31), 2
Multiple myeloma (C88.7, C88.9, C90)	42	0.89 (0.64 to 1.20)	36	0.72 (0.50 to 0.99)	33	0.75 (0.52 to 1.06)	10	1.53 (1.21 to 1.94), 1
Other cancers:¶								
Mesothelioma (C45)	12	2.00 (1.03 to 3.49)	35	2.29 (1.60 to 3.19)	26	2.00 (1.31 to 2.93)	NA	NA
MN buccal and pharynx (C00-C14)	94	1.40 (1.13 to 1.72)	174	1.39 (1.19 to 1.62)	148	1.41 (1.20 to 1.66)	9	1.23 (0.96 to 1.55), 2

*Results from Table 5 of LeMasters *et al*[14]; likelihood of cancer risk by meta-analysis criteria: 1=probable, 2=possible, 3=unlikely.
†SMRs restricted to 1960–2009 for MN large intestine, MN small intestine, and MN testes and 2000–2009 for mesothelioma.
‡Urinary bladder incidence included in situ (D09.0) and invasive cases as per SEER protocol.
§NHL incidence data exclude Kaposi sarcoma (C46.3).
¶Sites not listed among cancers of a priori interest but reporting statistically significant excess mortality and cancer incidence.
ICD-10, International Classification of Diseases, 10th Revision; MN, malignancy; NA, not applicable; NHL, non-Hodgkin lymphoma; Obs, observed; SEER, Surveillance, Epidemiology and End Results; SIR, standardised incidence ratio; SMR, standardised mortality ratio; SRE, summary risk estimate.

0.65 to 0.80, n=367). Few non-malignant outcomes were elevated, although statistically significant excess mortality was observed for cirrhosis and other chronic liver disease (SMR=1.26, 95% CI 1.12 to 1.41, n=299) and acute glomerulonephritis with renal failure (SMR=1.56, 95% CI 1.07 to 2.20, n=32). Deaths from falls (SMR=1.31, 95% CI 1.08 to 1.58, n=113) and other accidents (SMR=1.17, 95% CI 1.01 to 1.34, n=197) were also elevated.

By contrast with non-malignant outcomes, we observed excess overall cancer mortality (SMR=1.14, 95% CI 1.10 to 1.18, n=3285) table 2). The elevation was largely attributable to excess cancers of the lung (SMR=1.10, 95% CI 1.04 to 1.17, n=1046), oesophagus (SMR=1.39, 95% CI 1.14 to 1.67, n=113), intestine (SMR=1.30, 95% CI 1.16 to 1.44, n=326) rectum (SMR=1.45, 95% CI 1.16 to 1.78, n=89) and kidney (SMR=1.29, 95% CI 1.05 to 1.58, n=94). There was little evidence of excess mortality from the remaining cancers of a priori interest; however, statistically significant SMRs were apparent for buccal and pharynx cancers (SMR=1.40, 95% CI 1.13 to 1.72, n=94), malignancies of the liver, gall bladder and biliary tract (SMR=1.30, 95% CI 1.06 to 1.57, n=107), and malignant mesothelioma (SMR=2.00, 95% CI 1.03 to 3.49, n=12).

Women and non-Caucasians

All-cause mortality among women was near expectation (SMR=0.91, 95% CI 0.59 to 1.33, n=26). Accidental death was the leading cause (SMR=2.79, 95% CI 1.21 to 5.50, n=8) resulting in 31% of the total deaths among women. While there was little evidence of excess overall cancer mortality among women (SMR=0.74, 95% CI 0.27 to 1.61, n=6), most cancer deaths were from breast cancer (SMR=1.46, 95% CI 0.30 to 4.26, n<5). Bladder cancer mortality was statistically significant (SMR=33.51, 95% CI 4.06 to 121.05, n<5) based on few cases. Non-Caucasian males were characterised by decreased all-cause mortality (SMR=0.68, 95% CI 0.62 to 0.74, n=453) and all-cancers (SMR=0.80, 95% CI 0.65 to 0.97, n=104). They had few observed deaths in any a priori outcome, and lung cancer mortality was below expectation (SMR=0.67, 95% CI 0.44 to 0.97, n=27). Only prostate cancer mortality showed an excess approaching statistical significance (SMR=1.64, 95% CI 0.95 to 2.63, n=17) among non-Caucasian males (table 3).

Cancer incidence

There was little difference in SIRs when comparing analysis approaches; therefore, reporting focused on results from the multiple-cancer approach (table 2). All-cancer incidence was slightly above expectation (SIR=1.09, 95% CI 1.06 to 1.12, n=4461). Observed elevations in cancers of a priori interest were generally consistent with mortality data as evidenced by significant excess cancers of the oesophagus (SIR=1.62, 95% CI 1.31 to 2.00, n=90); large intestine (SIR=1.21, 95% CI 1.09 to 1.34, n=381); kidney (SIR=1.27, 95% CI 1.09 to 1.48, n=166) and lung (SIR=1.12, 95% CI 1.04 to 1.21, n=716). As in mortality analyses, there were excess buccal and pharynx cancers (SIR=1.39, 95% CI 1.19 to 1.62, n=174) and malignant mesothelioma (SIR=2.29, 95% CI 1.60 to 3.19, n=35). Of those diagnosed with mesothelioma, 31 (88.6%) were pleural. Excess laryngeal cancer incidence was also observed (SIR=1.50, 95% CI 1.19 to 1.85, n=84). The incidence of most remaining cancer sites was near expectation; however, multiple myeloma was significantly decreased (SIR=0.72, 95% CI 0.50 to 0.99, n=36).

Women and non-Caucasians

Overall cancer incidence among women was elevated, but not significantly (SIR=1.24, 95% CI 0.89 to 1.69, n=40). Consistent with mortality, female bladder cancer incidence was statistically significant but based on few cases (SIR=12.53, 95% CI 3.41 to 32.08, n<5). Nearly half of all cases were breast cancer (SIR=1.45, 95% CI 0.86 to 2.29, n=18). Nearly all breast cancers were diagnosed prior to the attained age of 55 years, with the highest SIR between the ages of 50 and 54 years (SIR=2.66, 95% CI 0.86 to 6.21, n=5). Left-sided disease appeared more frequent (61%, n=11). Overall cancer incidence among non-Caucasian male firefighters was near expectation (SIR=0.92, 95% CI 0.81 to 1.05, n=240). There was excess prostate cancer (SIR=1.26, 95% CI 1.02 to 1.54, n=94) but decreased lung cancer (SIR=0.67, 95% CI 0.43 to 1.00, n=24) (tables 3 and 4).

Sensitivity analyses

Except for COPD and cancers of the lung, prostate and brain, there was little evidence of heterogeneity in SMRs (see online supplementary table S6) or SIRs (see online supplementary table S7) across fire departments for outcomes of a priori interest. For mortality, the between-department variance was largely attributable to outlying decreased lung cancer (SMR=0.76, 95% CI 0.64 to 0.89, n=142) and COPD (SMR=0.53, 95% CI 0.40 to 0.69, n=57) in San Francisco firefighters, and excess cancers of the prostate (SMR=1.28, 95% CI 1.08 to 1.50, n=152) and lung (SMR=1.23, 95% CI 1.13 to 1.34, n=566) in Chicago firefighters. The between-department variance in mortality persisted when using state populations as referent (see online supplementary table S8). Similarly, heterogeneous lung cancer incidence stemmed from decreased cases among San Francisco firefighters (SIR=0.70, 95% CI 0.56 to 0.87, n=81); however, there was outlying excess prostate cancer incidence among San Francisco firefighters (SIR=1.22, 95% CI 1.08 to 1.37, n=276). Brain cancer SIRs varied widely across fire departments; excess cancer was observed in San Francisco firefighters (SIR=1.95, 95% CI 1.14 to 3.12, n=17), while decreased cancer was reported for Chicago (SIR=0.53, 95% CI 0.28 to 0.91, n=13).

Restricting analyses to firefighters with one or more years of employment had negligible effects (see online supplementary table S9). Slight increases in SMRs were observed for most a priori outcomes when restricting the cohort to incident hires, although these differences were not statistically significant. Age-at-risk differences in mortality also lacked statistical significance, but SMRs generally appeared greater at older ages. SMRs for cancers of the breast (SMR=1.42, 95% CI 0.46 to 3.32, n=5), oesophagus (SMR=1.41, 95% CI 1.05 to 1.86, n=51), and kidney (SMR=1.47, 95% CI 1.09 to 1.95, n=48) were highest among workers less than 65 years of age (see online supplementary table S10). Significant age-at-risk differences in SIRs were evident for prostate ($p<0.001$) and bladder ($p=0.002$) cancers (see online supplementary table S11). The heterogeneity was largely attributable to significant increases in prostate (SIR=1.21, 95% CI 1.10 to 1.33, n=426) and bladder (SIR=1.33, 95% CI 1.08 to 1.62, n=97) cancer risks among firefighter aged 64 years or less. Excess prostate cancer was limited to ages 45–59 years (SIR=1.45, 95% CI 1.28 to 1.64, n=249), while the age pattern of excess bladder cancer incidence was unclear. The effects of restricting PYAR to age-at-risk <85 were inconsequential (see online supplementary table S12). Excluding firefighters without race information also had little

Table 3 Standardised mortality and incidence ratios among men compared with the US population for causes of a priori interest

	Mortality (1950–2009)				Cancer incidence (1985–2009)*			
	Caucasian		Other		Caucasian		Other	
Underlying cause (ICD-10 codes)	Obs	SMR (95% CI)	Obs	SMR (95% CI)	Obs	SIR (95% CI)	Obs	SIR (95% CI)
All causes	11 549	1.01 (0.99 to 1.03)	453	0.68 (0.62 to 0.74)	NA	NA	NA	NA
All cancers (C00-C97)	3175	1.16 (1.12 to 1.20)	104	0.80 (0.65 to 0.97)	4181	1.10 (1.07 to 1.13)	240	0.92 (0.81 to 1.05)
MN oesophagus (C15)	110	1.46 (1.20 to 1.75)	<5	0.51 (0.11 to 1.49)	87	1.70 (1.36 to 2.09)	<5	0.73 (0.15 to 2.15)
MN stomach (C16)	105	1.12 (0.92 to 1.36)	5	0.81 (0.26 to 1.89)	87	1.19 (0.96 to 1.47)	6	0.76 (0.28 to 1.66)
MN intestine (C17-C18)	319	1.32 (1.18 to 1.48)	7	0.68 (0.27 to 1.40)	379	1.23 (1.11 to 1.36)	18	0.90 (0.53 to 1.42)
MN rectum (C19-C21)	86	1.46 (1.17 to 1.81)	<5	1.21 (0.25 to 3.53)	159	1.16 (0.99 to 1.36)	7	0.62 (0.25 to 1.28)
MN lung (C33-C34)	1019	1.12 (1.05 to 1.19)	27	0.67 (0.44 to 0.97)	689	1.15 (1.07 to 1.24)	24	0.67 (0.43 to 1.00)
MN breast (C50)	5	1.43 (0.46 to 3.34)	0	NC	6	0.79 (0.29 to 1.72)	<5	3.32 (0.40 to 12.00)
MN prostate (C61)	265	1.06 (0.94 to 1.20)	17	1.64 (0.95 to 2.63)	1167	1.02 (0.96 to 1.08)	94	1.26 (1.02 to 1.54)
MN other male genital (C60, C62-C63)	<5	0.49 (0.13 to 1.26)	0	NC	16	0.64 (0.37 to 1.04)	<5	0.38 (0.01 to 2.13)
MN kidney (C64-C66)	91	1.31 (1.05 to 1.60)	<5	1.05 (0.22 to 3.07)	151	1.26 (1.06 to 1.47)	14	1.46 (0.80 to 2.45)
MN bladder (C67-C68)†	80	0.96 (0.76 to 1.19)	<5	1.19 (0.14 to 4.30)	305	1.11 (0.99 to 1.24)	7	0.92 (0.37 to 1.91)
MN brain (C47, C70-C72)	72	1.03 (0.81 to 1.30)	<5	0.44 (0.01 to 2.47)	49	1.05 (0.78 to 1.39)	<5	0.67 (0.08 to 2.42)
NHL (C46.3, C82-C85, C88.0, C88.3, C91.4, C96)‡	119	1.18 (0.98 to 1.41)	<5	1.01 (0.28 to 2.60)	161	1.02 (0.87 to 1.19)	7	0.56 (0.23 to 1.16)
Leukaemia (C91.0-C91.3, C91.5-C91.9, C92-C95)	117	1.10 (0.91 to 1.32)	5	1.28 (0.41 to 2.98)	88	0.88 (0.71 to 1.09)	11	1.90 (0.95 to 3.40)
Multiple myeloma (C88.7, C88.9, C90)	41	0.92 (0.66 to 1.25)	<5	0.35 (0.01 to 1.97)	35	0.76 (0.53 to 1.06)	<5	0.24 (0.01 to 1.32)
COPD (J40-J44)	362	0.73 (0.65 to 0.81)	5	0.50 (0.16 to 1.16)	NA	NA	NA	NA

*Incidence results based on analysis of all invasive primary cancers (ie, multiple-cancer approach).
†Urinary bladder incidence included in situ (D09.0) and invasive cases as per SEER protocol.
‡NHL incidence data exclude Kaposi sarcoma (C46.3).
COPD, chronic obstructive pulmonary disease; ICD-10, International Classification of Diseases, 10th Revision; MN, malignancy; NA, not applicable; NC, not calculated; NHL, non-Hodgkin lymphoma; Obs, observed; SIR, standardised incidence ratio; SEER, Surveillance, Epidemiology, and End Results; SMR, standardised mortality ratio.

Daniels RD, *et al. Occup Environ Med* 2013;**0**:1–10. doi:10.1136/oemed-2013-101662

Table 4 Standardised mortality ratios (US population referent) and rate ratios for select outcomes* by employment duration (lagged 10 years)

	Employment duration (years)								
	0–<10		10–<20		20–<30		30+		
Underlying cause (ICD-10 codes)	Obs	SMR (95% CI) SRR (95% CI)	Obs	SMR (95% CI) SRR (95% CI)	Obs	SMR (95% CI) SRR (95% CI)	Obs	SMR (95% CI) SRR (95% CI)	Trend slope†, p Value
MN oesophagus (C15)	13	1.17 (0.62 to 2.00)	28	1.72 (1.14 to 2.48)	53	1.40 (1.05 to 1.83)	19	1.18 (0.71 to 1.84)	
		(Reference)		2.43 (1.07 to 5.50)		1.17 (0.56 to 2.41)		0.60 (0.27 to 1.35)	-2.14×10^{-6}, 0.141
MN stomach (C16)	12	0.80 (0.41 to 1.40)	18	0.92 (0.54 to 1.45)	47	1.07 (0.79 to 1.43)	33	1.53 (1.06 to 2.15)	
		(Reference)		0.33 (0.08 to 1.43)		0.39 (0.10 to 1.55)		0.40 (0.10 to 1.58)	3.06×10^{-7}, 0.822
MN intestine (C17-C18)	27	0.86 (0.57 to 1.26)	52	1.27 (0.95 to 1.67)	171	1.42 (1.22 to 1.65)	76	1.28 (1.01 to 1.60)	
		(Reference)		1.16 (0.38 to 3.54)		0.62 (0.27 to 1.44)		0.40 (0.17 to 0.94)	-7.54×10^{-6}, <0.001
MN rectum (C19-C21)	13	1.48 (0.79 to 2.54)	19	1.58 (0.95 to 2.46)	37	1.35 (0.95 to 1.86)	20	1.52 (0.93 to 2.34)	
		(Reference)		0.99 (0.33 to 2.97)		0.61 (0.24 to 1.52)		0.43 (0.16 to 1.14)	-1.61×10^{-6}, 0.001
MN lung (C33-C34)	123	1.02 (0.85 to 1.22)	184	1.03 (0.88 to 1.19)	523	1.14 (1.05 to 1.24)	216	1.12 (0.98 to 1.28)	
		(Reference)		1.32 (0.97 to 1.80)		1.24 (0.91 to 1.68)		0.80 (0.59 to 1.08)	-8.83×10^{-6}, 0.216
MN prostate (C61)	24	1.39 (0.89 to 2.07)	23	1.08 (0.68 to 1.62)	148	1.10 (0.93 to 1.29)	87	1.01 (0.81 to 1.25)	
		(Reference)		0.66 (0.31 to 1.41)		0.84 (0.47 to 1.50)		0.69 (0.39 to 1.22)	-2.03×10^{-6}, 0.192
MN kidney (C64-C66)	12	1.10 (0.57 to 1.92)	18	1.24 (0.73 to 1.95)	47	1.43 (1.05 to 1.90)	17	1.19 (0.69 to 1.91)	
		(Reference)		0.61 (0.26 to 1.48)		1.25 (0.58 to 2.69)		0.70 (0.29 to 1.67)	-1.05×10^{-7}, 0.924
MN bladder and other urinary (C67-C68)	8	1.05 (0.45 to 2.08)	7	0.65 (0.26 to 1.34)	46	1.08 (0.79 to 1.45)	23	0.94 (0.60 to 1.41)	
		(Reference)		0.25 (0.08 to 0.79)		1.15 (0.49 to 2.70)		1.03 (0.38 to 2.83)	2.58×10^{-6}, 0.258
MN brain and other nervous (C47, C70-C72)	12	0.65 (0.34 to 1.13)	15	0.88 (0.49 to 1.46)	32	1.17 (0.80 to 1.65)	14	1.47 (0.80 to 2.46)	
		(Reference)		0.80 (0.30 to 2.19)		1.48 (0.60 to 3.68)		1.52 (0.53 to 4.34)	1.01×10^{-6}, 0.118
NHL (C46.3, C82-C85, C88.0, C88.3, C91.4, C96)	18	0.98 (0.58 to 1.55)	9	0.51 (0.23 to 0.96)	63	1.35 (1.04 to 1.73)	33	1.47 (1.01 to 2.06)	
		(Reference)		1.18 (0.41 to 3.45)		1.15 (0.60 to 2.22)		1.04 (0.51 to 2.15)	-7.39×10^{-8}, 0.849
Leukaemia (C91.0-C91.3, C91.5-C91.9, C92-C95)	18	0.91 (0.54 to 1.44)	23	1.36 (0.86 to 2.05)	54	1.11 (0.83 to 1.45)	27	1.06 (0.70 to 1.54)	
		(Reference)		2.24 (0.92 to 5.50)		1.36 (0.65 to 2.87)		1.13 (0.48 to 2.67)	-5.10×10^{-9}, 0.997
Multiple myeloma (C88.7, C88.9, C90)	5	0.84 (0.27 to 1.96)	<5	0.52 (0.14 to 1.34)	22	0.97 (0.61 to 1.47)	11	0.99 (0.49 to 1.77)	
		(Reference)		0.56 (0.11 to 2.82)		1.59 (0.47 to 5.41)		1.25 (0.33 to 4.75)	5.27×10^{-7}, 0.407
COPD (J40-J44)	33	0.78 (0.54 to 1.10)	38	0.69 (0.49 to 0.94)	185	0.70 (0.60 to 0.81)	111	0.75 (0.62 to 0.91)	
		(Reference)		1.07 (0.60 to 1.91)		1.03 (0.67 to 1.60)		0.83 (0.53 to 1.31)	-2.80×10^{-6}, 0.005

*Excluding a priori causes with total observations <20.
†Cause-specific deaths per year of employment-person-year.
COPD, chronic obstructive pulmonary disease; ICD-10, International Classification of Diseases, 10th Revision; MN, malignancy; NHL, non-Hodgkin lymphoma; Obs, observed; SMR, standardised mortality ratio; SRR, standardised rate ratio.

effect on a priori outcomes (results not shown). Finally, there was no apparent trend in increasing risk with employment duration; however, negative trends in COPD and colorectal cancer SRRs were evident (table 4). Subsequent sensitivity analyses revealed that SRRs were largely dependent on selection of cut-points and lag periods (results not shown).

DISCUSSION

This study is among the largest examining cancer risk in career firefighters. The pooled approach and long follow-up period improved risk estimates relative to previous studies. With few exceptions, there was little evidence of significant cancer risk heterogeneity across fire departments or age groups. Furthermore, sensitivity analyses did not suggest the potential for significant bias from including short-term workers, prevalent hires, or person-time in the open-ended age-group (85+ years). Despite notable differences in the analytical approaches, we observed remarkable similarities between mortality and incidence analyses. Additionally, the results of incidence analyses were not significantly affected by the choice of including multiple primaries or only the first cancer diagnosis. The lack of significant differences in results between fire departments, end-points, and analytic techniques suggest that the pooled study findings are robust and generalisable to similar firefighter populations.

We observed decreases in many non-malignant diseases that suggest improved health in these firefighters compared with the general population. This finding is not surprising given health requirements for entering and remaining in the fire service. Nevertheless, there was a modest excess in overall cancer mortality and incidence brought about by excess solid cancers at several sites of a priori interest. With few exceptions, our results are consistent with those previously reported and similar to SREs presented in the meta-analysis by LeMasters *et al*.[14] Nevertheless, we found little evidence of excess cancers of the testes, brain and lymphohematopoietic systems, which is contrary to the synthesis by LeMasters *et al*[14] and subsequently published studies.[8 11]

We observed about a twofold increase in malignant mesothelioma mortality and incidence compared with the US population. Malignant mesothelioma is largely attributable to asbestos exposure, with sparse evidence of other causes.[22] Excess malignant mesothelioma in US firefighters was not previously described; however, excess incidence was recently observed in Nordic firefighters aged 70+ years,[23] and increased risk of asbestos-induced pulmonary and pleural fibrosis was reported in a study of New York City firefighters.[24] Although firefighter exposures to asbestos are known, the absence of previous reports of malignant mesothelioma is not surprising given the rarity and extremely long latency (20–40 years) of the disease. The average time between the date first employed and the date of diagnosis in the current study was 45 years; therefore, firefighting exposure-induced disease may be discernible only after lengthy follow-up. Also, previous studies have been hindered by the lack of specific codes for mesothelioma deaths before ICD-10.

We observed excess digestive cancers, mainly of oesophageal and colorectal sites. Information on occupational causes is sparse, although there is limited evidence suggesting asbestos and diesel exhaust exposures may be weakly associated with gastrointestinal cancers.[25 26] Still, the relation between these hazardous exposures and digestive cancers appears small compared to the effects of other factors such as diet, obesity, physical activity, tobacco use and alcohol consumption.[22 27] We also found increased risk of oral, pharyngeal and laryngeal cancers, compared with the US population. Similar to digestive cancers, important risk factors for these sites are tobacco and alcohol consumption, with lesser evidence that exposures to wood dusts, smoke, asbestos, PAHs and acid mists may also increase risk.[22 28 29]

Some insight into the degree of a potential bias from the lack of controlling for lifestyle factors can be gained from previous surveillance of firefighter behaviours. For example, the prevalence of smoking among current firefighters appears less than the general population, and is decreasing, [30–33] a trend that is consistent with observed decreases in non-malignant smoking–related diseases (eg, COPD, stroke) but contradictory to excess digestive, oral and respiratory cancers. As another example, previous studies suggest there is increased obesity among firefighters compared with the general population. [34–36] Obesity, or a dietary intake that is high in meat, fat, or overall caloric intake could contribute increased gastric or colorectal cancer risk, although concomitant elevations in health outcomes that are more strongly related to these factors (eg, ischaemic heart disease, diabetes mellitus, hypertension and stroke) were not found. Last, information on alcohol consumption within the fire service is sparse and inconsistent.[37–40] Some studies suggest that firefighter behaviours may differ from the general population, although it is not clear that any perceived behavioural difference is sufficient to explain disparities in alcohol-related health outcomes. In the current study, the information on non-malignant and potentially alcohol-related mortality was at conflict; there was excess mortality from cirrhosis and other chronic liver disease, but fewer than expected alcoholism deaths. Alternate explanations for increased cirrhosis mortality may be exposures to chemical toxins or infectious disease, [41–43] which may also account for excess acute renal dysfunction, a disease that is more common among those with chronic liver disease.

Fewer than 4% of firefighters in our study were women. There was evidence of excess female bladder and breast cancers; however, only bladder cancer mortality and incidence reached statistical significance. Modest excess bladder cancer has been observed in some occupations involving known or suspected bladder carcinogens (eg, PAHs, and diesel exhaust), yet contrary to our findings, risk patterns by occupation tend not to differ by gender.[22] There is little evidence linking female breast cancer to workplace exposures; however, prolonged shift work may be a risk factor (and to a lesser extent a risk factor for prostate, colon and endometrial cancers).[2] Moreover, similar findings had not been reported previously, although increased risk of Hodgkin lymphoma and cancers of the cervix and thyroid among women firefighters (n=2017) was recently described.[11] Given the small sample and the lack of confirmatory results, our findings on female outcomes merit cautious interpretation.

Excess bladder and prostate cancer incidence was found among firefighters less than 65 years of age. Interestingly, the prostate cancer excess was limited to ages between 45years and 59 years, which was consistent with recent observations in Nordic firefighters.[23] Similar mortality patterns were not observed. These cancers have relatively high survival; therefore, the underlying cause of death may be an inferior risk measure compared to cancer diagnoses. The early onset of these cancers suggests an association with firefighting. Prostate and bladder cancer diagnoses can occur following routine screening.[44 45] As an alternative explanation, differences in medical screening (eg, prostate-specific antigen tests) among firefighters compared to the general population could have contributed to the observed excess. Data on cancer screening practices are lacking; however, it is plausible that screening may be more frequent among firefighters with improved healthcare availability and heightened cancer awareness.

There was little evidence of increasing cancer risk with increasing employment; however, there were notable analytical shortcomings that merit discussion. First, rather than specifying cut-points and an exposure lag period specific to each outcome, we applied cut-points (10, 20 and 30 years) used in earlier studies[5 9 46] and a common exposure lag period (10 years) to all outcomes; these choices were found to be influential in subsequent sensitivity analyses. Second, our methods have limited capability to account for HWE or other sources of bias that may have masked a dose response. Last, employment duration may poorly represent exposure potential given that some jobs are prone to lower exposures compared with others. For these reasons, a detailed exposure assessment is underway to support multivariable regression modelling for improved dose-response analyses.

Death certificates and registry data used in the current study are imperfect measures of cancer risk. In the absence of a national cancer registry, coverage is limited geographically; therefore, cases occurring outside catchment areas would be missed. Cases occurring before the registries attained comprehensive coverage have also been missed. Mortality analyses have the advantage of broader temporal and spatial coverage, but may poorly characterise cancers with relatively high survival (eg, cancers of the breast, bladder, testes and larynx). Finally, there may have been errors in tracing which can also bias study results. Although errors in ascertainment cannot be ruled out, our use of multiple information sources and end points, and the low numbers of participants lost to follow-up or moving out of catchment areas, act to minimise these errors.

CONCLUSION

In this first phase of examining health effects in career firefighters, we report on mortality and cancer incidence among nearly 30 000 career firefighters followed from 1950 through 2009. Compared with the US population, we found small to moderate increases in risk for several cancer sites and for all cancers combined, stemming mostly from excess malignancies of the respiratory, digestive and urinary systems in otherwise healthy individuals. Our findings are consistent with previous studies and strengthen evidence of a relation between firefighters' occupational exposure and cancer. We found a previously unreported twofold excess of malignant mesothelioma among firefighters. Given that asbestos is the only known causal agent for malignant mesothelioma, and firefighter exposures are probable, the excess is likely to be a causal association.

This report provides the foundation for subsequent analyses of firefighter risks, some of which are ongoing. In upcoming research, detailed employment histories (eg, number and types of fire runs) and institutional knowledge (eg, use of respiratory protection and source capture ventilation of diesel exhaust) will be used to derive exposure metrics to more accurately examine dose response. Future regression modelling will also enable examination of temporal effects that are poorly suited to life-table analyses, such as time since first exposure. Expansion and continued follow-up of this cohort would enhance future analyses, particularly among women and non-Caucasian firefighters.

Acknowledgements This study was made possible through the continued cooperation of the men and women serving the Chicago, Philadelphia and San Francisco fire departments. We especially wish to acknowledge those who provided key assistance: Chicago (José Santiago, Tom Ryan, John McNalis, Mark Edingburg, Hugh Russell and Richard Edgeworth); Philadelphia (Lloyd Ayers, Henry Costo, William Gault and Thomas Garrity); San Francisco (Joanne Hayes-White, Ginny Franklin, Tom O'Connor, Rhab Boughn and Tony Stefani); and within the US Fire Administration (William Troup and Glenn Gains). We acknowledge NIOSH staff and their contractors for contributing to the collection, coding and management of study data. We also wish to thank Grace LeMasters and Paul Demers for their valued counsel during manuscript development.

Contributors RDD participated in design, data collection, analysis and manuscript development. TLK conceived the study and participated in design and data collection. JHY participated in design, data collection and analysis. MMD, TRH, DB, SHZ, JJB and KMW participated in design and data collection. LEP participated in design and critical appraisal. All authors participated in the interpretation and presentation of results and have read and approved the final manuscript.

Funding Research funding was provided by the National Institute for Occupational Safety and Health (NIOSH) by intramural award under the National Occupational Research Agenda (NORA), and by the US Fire Administration (USFA). This research was also supported, in part, by the intramural research programme of the National Institutes of Health (NIH), National Cancer Institute (NCI).

Competing interests None.

Ethics approval This research was approved by the Institutional Review Boards of the National Institute for Occupational Safety and Health (NIOSH) and the National Cancer Institute (NCI). Approvals for cancer registry access were granted by 11 states (ie, Arizona, California, Florida, Illinois, Indiana, Michigan, Nevada, New Jersey, Oregon, Pennsylvania and Washington). Approvals were also granted by vital records centres for death certificates maintained in 25 states (Alaska, Arizona, Arkansas, California, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Virginia, Washington and Wisconsin). The state public health entities provided vital status information in accordance with state policies, and disclaim responsibility for any analyses, interpretations, or conclusions herein.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement Data were supplied by the Illinois Department of Public Health and the Bureau of Health Statistics and Research, Pennsylvania Department of Health. These public health entities specifically disclaim responsibility for any analyses, interpretations, or conclusions. The Florida cancer incidence data used in this report were collected by the Florida Cancer Data System (FCDS) under contract with the Florida Department of Health (FDOH). The views expressed herein are solely those of the authors and do not necessarily reflect those of the FCDS or FDOH. The collection of cancer incidence data used in this study was also supported by the California Department of Public Health as part of the statewide cancer reporting programme mandated by California Health and Safety Code Section 103885; the National Cancer Institute's Surveillance, Epidemiology and End Results Program under contract N01-PC-35136 awarded to the Northern California Cancer Center, contract N01-PC-35139 awarded to the University of Southern California, and contract N02-PC-15105 awarded to the Public Health Institute; and the Centres for Disease Control and Prevention's National Program of Cancer Registries, under agreement #U55/CCR921930-02 awarded to the Public Health Institute. The ideas and opinions expressed herein are those of the authors, and endorsement by the State of California, Department of Public Health, the National Cancer Institute, and the Centres for Disease Control and Prevention or their contractors and subcontractors is neither intended nor to be inferred.

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2017

Law Enforcement Fitness Policies in Relation to Job Injuries and Absenteeism

Marlana Lynn Hancock
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Marlana Hancock

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Mark Stallo, Committee Chairperson,
Public Policy and Administration Faculty

Dr. Richard Worch, Committee Member,
Public Policy and Administration Faculty

Dr. James Mosko, University Reviewer,
Public Policy and Administration Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2017

Abstract

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by

Marlana L. Hancock

MA, Sam Houston State University, 1997

BA, University of Northern Iowa, 1994

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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August 2017

Abstract

After employment, job-related fitness requirements vary for law enforcement agencies within North Carolina. Police academies mandate specific job-related fitness requirements for recruits as a condition of graduation. Once employed, little is known about why some law enforcement agencies in North Carolina have physical fitness policies and others do not, particularly when injury rates and healthcare costs continue to rise. To better understand this inconsistency, the current study used a mixed methods approach to examine 6 midsized law enforcement agencies in North Carolina with varying fitness policies. The policy of each agency, along with OSHA work-related injuries and absenteeism reports, were examined quantitatively to determine if a relationship existed between policy and injuries and absenteeism. Analysis of variance (ANOVA) and post-hoc tests found a greater statistical significance between policy levels and injury rates than between policy level and absenteeism rates. An interview with agency personnel qualitatively identified common themed responses to determine whether the utility function of rational choice theory explained fitness policy implementation. It was difficult to determine whether the utilitarian component was the reason behind policy decisions, but data-driven results seemed to serve as an agent of fitness policy decision making. The results contributed to the limited academic literature on this topic although further research recommendations were made. The findings advocate for better officer health and fitness standards to reduce the risk of on-the-job injuries and absenteeism, and reduce health care costs to all involved.

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Dedication

This study is dedicated to the men and women in blue who put their lives on the line every time they put on the uniform. My prayer is that you stay healthy and steadfast to serve your community with integrity and honor. And to my beloved Ken, I will love you always…

Acknowledgments

Trust in the Lord with all thine heart; and lean not unto thine own understanding. In all thy ways acknowledge him, and he shall direct thy paths (Prov. 3: 5-6, KJV). Much has been done, but there is also much to do. A sincere thank you is not enough for those who have encouraged and helped me along this path, my mom and my dad, sisters Cindy, Debbie, Pam, and Mandy. Manders, you are my inspiration. Dr. Nancy McCurry, you gave me the courage to continue my education and in your retirement, you will be deeply missed. My co-worker and boss, Neil Weatherly, thank you for your understanding and flexibility in allowing me to occasionally use work time for school obligations. And Pastor Shook, thank you for being a blessing in my life.

Dr. Stallo, I have enjoyed our journey and appreciate the support, guidance, and encouragement when times got a bit stressful. Your leadership has helped me gain confidence to move on in the academic world. Dr. Worch, your time, feedback, and genuine interest is more than I could ask for in completing this process. Dr. Mosko, I enjoyed attending many of your writing seminar sessions and participating in the topic discussions. Your input has been enlightening and I appreciate your constructive feedback and input. Carey, your editing and suggestions were most welcomed and helpful, thank you so much for your time and writing expertise.

Last, but certainly not least, thank you so much to the law enforcement agencies who agreed to participate in my study. The time and resources that were asked of you will be remembered and is much appreciated. I hope your worthy contributions have been demonstrated in this research.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

A police officer is faced with daily unknowns on the job, which can be both physically and psychologically demanding (Guffey, Larson, & Lasley, 2014). It seems fitting that a law enforcement agency would require officers to maintain a certain standard of fitness or wellness to secure their safety and well-being as well as to benefit the agency, as a healthier lifestyle encourages fewer missed days of work and lower health care costs. However, this does not seem to be common practice among law enforcement agencies in North Carolina. Though fitness requirements for police academy cadets are mandated by state training and standard boards, not all agencies mandate fitness as a condition of continued employment. This creates a misunderstanding as to why consistency does not exist beyond academy training and what factors contribute to specific fitness policy decision-making at the agency level. This research examines (a) why state-mandated physical fitness standards for police academy cadets are used at some law enforcement agencies but not others as a condition of employment and (b) whether more stringent fitness policies contribute to reduced job-related injuries and absenteeism rates. If there is a significant relationship between certain fitness policies and work-related injury rates and absenteeism, then future research might address this issue and support efforts to improve officer health and lower agency costs due to officer injuries and absenteeism.

Background of the Study

There is little debate that the job demands of first responders (including law enforcement) place stress on and affect a body's efficiency. Physical and psychological stress go hand in hand and the effects can include lower back pain and heart disease

(Armstrong, Clare, & Plecas, 2014; Heneweer, Picavet, Staes, Kiers, & Vanhees, 2012). These job demands stress the importance of officers maintaining optimal cardiovascular endurance in order to reduce the risk of injury on the job. Given that officers must physically deal with individuals and equipment while on the job, it is not shocking that they maintain a higher heart rate compared to the general public (Armstrong et al., 2014). Over a career, exposure to these demands along with shiftwork can affect an officer's fitness for duty, especially for officers who have 20 or more years of experience (Wirtz & Nachreiner, 2012). Thus, although physical activity is known to benefit general health and promote prevention of injuries, many law enforcement agencies do not require certain fitness standards as a condition of employment. This is the case even though the North Carolina training and standards board continues to research and update task analysis standards for its police academies.

In 2015, the North Carolina Department of Justice concluded a study to update its Police Officer Physical Abilities Test (POPAT) from years past. The completion of the POPAT within a certain time limit is required of all North Carolina police academy cadets. The test is made up of various physical tasks that are designed to mirror real situations that patrol officers might encounter on the job. Its purpose is to differentiate between those who can and cannot perform the physical functions of a police officer's job at an adequate level of proficiency (North Carolina Justice Academy [NCJA], n.d.). Ensuring that people are physically fit for work by matching capabilities with physical job requirements is an important step toward reducing injury and absence rates (Rayson, 2000). A cadet's successful completion of POPAT means passing the basic law enforcement training academy. Unsuccessful completion means failing the entire academy. Nevertheless, the question is this: If the state deems certain physical tasks necessary to perform the job in the police academy setting, why are many law enforcement agencies not requiring similar standards for officers working in the field?

Plat, Frings-Dresen, and Sluiter (2011) recommended using early intervention to promote a healthy lifestyle, which can reduce the risk of future injuries. In their study, emergency medical services (EMS), fire, and military personnel were examined; however, similar effects would be expected among police officers. Even though prevention would seem beneficial no matter the occupation, this needs to be explored further.

Guffey et al. (2014) did not find a direct correlation between officer fitness and injuries specifically but did find a correlation between officer weight and injuries after efforts were made by several departments to improve officer wellness. This cannot be discounted because weight can be a contributing factor to overall wellness and fitness. Perhaps weight needs to be considered in hypothesizing that more stringent fitness policies lower work-related injury and absenteeism rates.

One way to promote work injury prevention is to educate personnel and use resources already in place. For example, North Carolina legislation provides for a full public health mandate, which includes injury prevention. This responsibility lies within the North Carolina Health and Human Services Department. To promote health and fitness, funding could be available for injury prevention programs (Stier, Thombley, Kohn, & Jesada, 2012) within a number of occupations. This is an important issue that should be addressed within law enforcement management to determine, first, if agencies are aware of these resources, and second, if there is interest in using these state resources to assist with fitness policy implementation. If supported by decision makers, available funding might justify routine health screening as a prevention tool. Making agencies aware of these available resources could enhance a positive management system that strengthens an agency's commitment (Dick, 2011) to fitness. In this study, management support of fitness policies (or lack thereof) was examined to determine commitment to officer fitness. Theoretical application determined whether agency incentives for fitness improvement came from leadership, and if so, whether this influence was present in policy. Leadership management is an important component to consider when examining the policies of an agency (Schulhofer, Tyler, & Huq, 2011).

Problem Statement

Law enforcement personnel have an increased risk for cardiovascular disease and other health issues due to the common shiftwork involved and the unknown demands of the job (Armstrong et al., 2014; Wright, Barbosa-Leiker, & Hoekstra, 2011). This type of work environment can lead to an increased risk of injuries if officers are not appropriately prepared to the best of their abilities. Injuries can be reduced through such prevention approaches as improved physical activity (Heneweer et al., 2012). The importance of a healthy lifestyle has been emphasized in a plethora of research (Means, Lowry, & Hoffman, 2011b). It is also known that officers are at a higher risk for injury than the average person simply because of their profession. These factors justify the action of an agency to require officers to maintain an optimal health level, especially given that medical expenses and lost productivity in the workplace total more than $400 billion in the United States each year (Stier et al., 2012). Law enforcement is one of the industries included in those figures.

Law enforcement agencies in North Carolina define and determine their own standard operating procedures (SOPs), including fitness requirements. An agency can elect to set standards as a condition of employment as long as each standard is justified by the job requirements (Department of Labor, n.d.). Unfortunately, little is known about why some law enforcement agencies in North Carolina do and some do not have fitness standards, given the support that fitness has in research. It is not known whether having a physical fitness policy in place directly relates to job injuries and absenteeism rates. Using a sample of law enforcement agencies, the current research examined which factors contributed to implemented agency policy and determined whether the use of a fitness policy directly related to injury and absenteeism rates within an agency. Additionally, I sought to determine the following: If there was a relationship, did lost productivity, in part or whole, contribute to unfit officers getting injured?

Purpose of the Study

This mixed methods study was conducted for the purpose of testing the utility function component of rational choice theory to determine if it explained fitness policy implementation and determined whether policy affected reported work-related injuries and absenteeism among North Carolina law enforcement agencies. The quantitative portion of the study examined the independent variable *policy* (defined as the presence or absence of an agency's fitness policy) over a 5-year period. The dependent variables *injuries* and *absences* consisted of the total number of work-related injuries and absences reported each year at an agency. The control variable, *progressive policy,* was defined according to an agency's increased fitness requirements over a 5-year period.

Research Questions and Hypotheses

Three questions guided this research:

RQ1. What relationship, if any, exists between a North Carolina law enforcement agency's fitness policy and work-related injuries and absenteeism?

H_0: No significant relationship exists between the stringency of fitness policy and job-related injuries and absenteeism.

H_1: The more stringent a fitness policy is, the lower the job-related injuries and absenteeism.

RQ2. When research emphasizes the benefits of maintaining a certain fitness level, particularly for first responders, does the utility function within rational choice theory explain why some North Carolina law enforcement agencies mandate physical fitness requirements for officers and others do not?

H_0: Based on the utility function, rational choice theory does not explain why an agency has the current fitness policy in place.

H_1: Rational choice theory presumes that policy decision-making is representative of a utility function and does explain why agencies have any or more stringent fitness policies in place.

RQ3. Are data-driven results of injury or absenteeism an agent or constraint as they pertain to the present fitness policy?

H_0: Injuries and/or absenteeism rates are neither an agent nor a constraint of the current fitness policy.

H_1: Injuries and/or absenteeism rates are either an agent or a constraint of the current fitness policy.

Theoretical Framework

As applied to public policy, rational choice theory contends that individuals interact through a social process and these interactions ultimately achieve organizational decision-making. Therefore, individual actions can affect the outcomes of policymaking (Green, 2002; Jones, Boushey, & Workman, 2006). As rational choice theory is specifically applied to this study, it would be expected that fitness policy implementation is influenced by the decision-making process. To test this, managers and administrators from the sample of law enforcement agencies were questioned about their fitness policies over the last 5 years and were asked about the rationale for the policy, such as whether any incentives or consequences were tied to policies. The issue of what affects agency fitness policy was explored, including circumstances such as politics, budget, data-driven results, and personal decisions. Rational choice theory is explored further in Chapter 2. The results found will be shared with all involved organizations and may influence or impact agency policy concerning officer fitness standards, either presently or in the future (Lunenburg, 2011; Royle & Hall, 2012).

Definitions of Terms

For this study, the following terms are used or referenced:

Basic Law Enforcement Training (BLET): A North Carolina state-mandated 616-hour (minimum) training course composed of 36 separate blocks of instruction and practical exercises, concluding with a comprehensive written exam and skills testing. It prepares individuals with entry-level skills needed to become certified law enforcement officers in the state (North Carolina Department of Justice, 2015). It is also referred to as the “police academy.”

Law enforcement: Individuals and agencies responsible for enforcing state and local laws in the course of maintaining public order and safety (Bureau of Justice Statistics, 2016).

Physical fitness: “The ability to meet life’s daily demands, without undue fatigue, while maintaining sufficient energy or leisure time pursuits and to overcome emergency situations that may arise personally and professionally” (Commission on Accreditation for Law Enforcement Agencies [CALEA], 2010).

Police administration: Police officers whose role is to manage and supervise police agencies.

Police officer: Uniformed, sworn officers assigned to the patrol function of policing.

Police Officer Physical Abilities Test (POPAT): Scientifically-tested series of tasks designed to assess important physical abilities necessary for effective job performance as a police officer, developed to mirror real-life situations that officers might encounter on the job (North Carolina Department of Justice, 2015).

Nature of Study

A purposive sample consisting of six North Carolina midsized law enforcement agencies in the Piedmont Triad region (see Appendices A and B) was chosen to participate in the study. Two agencies from each of the following categories were sought: (a) those with no mandated/voluntary fitness policy over the last 5 years, (b) those with a progressive or changed fitness policy over the last 5 years, and (c) those with a continued mandated fitness policy over the last 5 years. The search for agencies that fit these criteria began by using U.S. Census Bureau data to identify midsized populations in the North Carolina Piedmont Triad region. Using a quasi-experimental design, the sample of six was placed into nonrandomly assigned groups (independent, nominal variables). The number of work days missed in each of the years 2011-2015 due to work-related injuries served as the dependent, ratio-level variable.

Upon written agency permission and a guarantee of anonymity, agency administrators were asked to participate in a brief interview to answer a short, open-ended questionnaire inquiring about fitness policy implementation as it pertained to decision-making within the agency. The intent was to help determine what influences and affects these policy decisions within the agency. Descriptive statistics were used for each variable, and ANOVA and post-hoc tests were used to identify any significant relationships between the independent and dependent variables. *Progressive policy* was used as a control variable in an attempt to lessen the cause and effect order. An advisory committee was used to both construct questionnaire content and review the research process and purpose.

Permission was also secured to examine each agency's fitness policy and Occupational Safety and Health Administration (OSHA) 300A summary reports of work-related injuries and absences from the years 2011-2015. It was assumed that both fitness policies and injury reports were internally valid and therefore measured what they were supposed to. To ensure external validity prior to analysis, a collaborative effort between the researcher and agency administrator was used to review these documents to verify that what was reported represented an accurate portrayal of information. This included a review of fitness policies, OSHA documents, and completed questionnaires.

Assumptions, Limitations, Delimitations

It was assumed for this study that the participating agencies would answer interview questions honestly and provide current, accurate policy and OSHA data. In order to support this premise, questionnaires were provided in advance and question responses as well as OSHA forms were reviewed with each agency for accuracy. Any research presents potential validity and reliability issues; this study was not an exception. The stringency level of an agency's fitness policy served as a control variable; the stringency level was used to determine whether the absence or the presence of a mandate was a reliable measure of work absenteeism. It is important in research that any instrument used measures what is intended; therefore, instruments in this study were analyzed for validity to determine if the content being measured was accurate (Frankfort-Nachmias & Nachmias, 2008).

To maintain internal validity, all distributed questionnaires consisted of the same questions pertaining to fitness policy standards and absenteeism rates over the same 5-year period. For consistency purposes, an average standardized absentee rate was calculated per agency to allow cross comparisons. To establish questionnaire tool validity and reliability, a criminal justice advisory board (made up of local agency representatives) was presented with preliminary questions and solicited for feedback prior to questionnaire distribution.

Research integrity was promoted and any misconduct was avoided, as such actions reflect an organization or institution (Creswell, 2013). Data collection and participant anonymity, privacy, and confidentiality all needed to be protected, as this helped to ensure my trustworthiness as a researcher. Data analyses and discussion were presented in neutral language and at the appropriate level for audience understanding (Creswell, 2013). The Academy of Criminal Justice Sciences (ACJS) code of ethics guided the conduct of this research. Although the steps I took did not eliminate researcher bias, they helped to reduce it. Applying reflexivity within qualitative research implies that a researcher is upfront regarding his or her background, and that any interpretation and gains that might come from the study will be fully acknowledged (Creswell, 2013). To help eliminate additional bias, a written transcription of all responses was provided to each interviewee for review of accuracy. This step was pertinent because researchers have an obligation to monitor and report as fully and truthfully as possible all procedures that were used in a study (Patton, 2002).

Also important to researchers is awareness of potential ecological and individual fallacies in a study (Frankfort-Nachmias & Nachmias, 2008). It should be emphasized that an agency's lack of enforcement of a fitness standard does not imply that officers cannot or do not take individual responsibility for their own duty fitness. It also cannot be inferred that the presence of high absentee or injury rates reflects poor officer or agency performance.

A final limitation of this study was that a sample of six agencies was used. Using such a small sample limited the detection of large differences and did not allow for the generalization of results found, either within or outside the state. However, findings help to address the research questions presented and contribute to what little is known about the relationship between fitness policies and work-related injuries and absenteeism within law enforcement in North Carolina. The results add to the knowledge of how policies are derived.

Significance of Study

A thorough search of the literature on officer fitness and injuries found very limited studies specifically comparing physical fitness policies to job injuries nationwide or in North Carolina. Every industry is required by OSHA to document and report work-related injuries. Therefore, the results of this study add to the literature by addressing whether mandated fitness requirements are related to agency-documented OSHA injury rates within the law enforcement profession. This study also contributes to the gap in field research because, although fitness is encouraged, little is being done to improve officer health as work-related-injury costs continue to rise. More specifically, research at the state level is lacking on whether fitness policies even influence the number of injuries reported among North Carolina law enforcement agencies, and what the rationale is for current policies. By addressing these issues, the study contributes to law enforcement field knowledge and any significance between fitness policies and work-related injuries and absenteeism. The significance between policy and injury rates found within the study demonstrates the need for widespread participation in wellness initiatives. This could not only improve individual officer health, but also better equip officers to perform their duties with a reduced likelihood of getting hurt. Simply put, being more fit could increase the chance of officers going home injury free at the end of each shift.

Ensuring that officers are safely and physically able to fulfill their required duties should be not only a personal officer responsibility but also a concern for each agency. Current policies may be sufficient, and there may be no relationship between work injuries or absences, but this is understudied in North Carolina. However, because one may affect the other, and wellness, along with increased job performance and cost savings prevails, everyone involved wins. Rejecting the null hypothesis of the current statistical analyses can provide a base for positive fitness policy changes within law enforcement, thereby sustaining the importance of fitness for officers beyond academy training. Results provide an opportunity for agencies to promote fitness and wellness as a means to improve officer health and reduce injuries and absenteeism. This could benefit officers, lower agency health costs, and lower overall health insurance provider costs.

Social Change

A police officer's job is not routine; it is never the same from day to day. It is difficult to predict what officers will need to do to protect themselves and the public. Therefore, officers should train and be prepared to respond to the unpredictable. This can be done through the use of combined physical and psychological exercises as provided in police academy training. Training includes intense encounters, development of survival instincts, and exercises to build strength and power endurance. These tactics should be included in regularly scheduled in-service events (Zagaria, 2007) because many officers do not continue fitness training beyond the academy, and physical training often trails off if an agency does not either promote or mandate fitness-level standards. Examining agencies that both do and do not institute fitness policies in North Carolina, I sought to bring attention to policy discrepancies at a state level. This study represented an opportunity to raise awareness of possible fitness–injury correlations and informs agencies of available resources they might not be aware of, such as health and injury prevention programs and potential funding for these programs.

Ultimately, a significant relationship between policy and injury and absenteeism rates provides a springboard to advocate for better health and fitness among officers in the state. Sharing results could also increase awareness of officer health and safety benefits as they pertain to the law enforcement job, meaning providing the necessary tools to promote officer wellness (Office of Community Oriented Policing Services, 2015) and decrease injury risks. In turn, better wellness increases both officer health/wellness and public service efficiency.

Summary

This research was conducted to examine fitness policies and OSHA injury reports among six North Carolina law enforcement agencies over a 5-year period. Using a quantitative analysis, I sought to determine whether a significant relationship existed between these variables. Analyses rejected the null hypothesis, and a certain category of policies related to fewer injuries and absences; thus, findings supported the promotion of physical fitness policies for police officers beyond the police academy.

Additional analysis through qualitative examination of questionnaire responses from police administrators determined whether rational choice theory supports policy decision-making, focusing on the utility function. Responses helped in determining which factors contributed to policy decision-making and whether decisions were based on personal preferences, political influence, or other circumstances, or whether decisions were based on a representation of larger objectives. Chapter 2 explores the variety of studies I found that were related to this topic.

Chapter 2: Literature Review

Introduction

A generally sedentary population is at a greater risk of coronary disease than those who are more active. The same stands true for those who have more physically demanding jobs; their risk for heart attack and absenteeism is lower (Donoghue, 1977). Police work can be physically demanding as well as stressful and dangerous (Zimmerman, 2012). As patrol officers answer calls for service, they never know what will happen next, or what abilities or skills might be required of them at any given time. Therefore, suffering injury or worse is always a possibility. Law enforcement has one of the highest rates of injuries and illnesses among occupations (Bureau of Labor Statistics [BLS], 2014) and has greater mortality and morbidity rates than the general public (FitForce, Inc., 2010; Quigley, 2008; Smith & Tooker, 2011; Wright et al., 2011). Research has shown that improved endurance performance makes the body less susceptible to fatigue and a person less likely to commit errors (Donoghue, 1977). Various factors work into this equation, but one specifically, officer fitness, is the focus of this discussion. Though the police academy helps cadets prepare for entry into the law enforcement workplace, the rest of the preparation and experience depends on the officer and the hiring agency. The agency sets the tone for what is deemed acceptable and important. Sometimes certain health and fitness levels are required, or at least encouraged throughout an officer's career, but among North Carolina law enforcement agencies, this general policy seems to be more the exception than the rule, which in part was what this research set out to discover.

Health and fitness among those in law enforcement is declining. *Health* is considered “a state of complete physical, mental, and emotional well-being” (Smith & Tooker, 2011, p. 3). The consequences of not being healthy include vulnerability to on-duty illness and injury, and increased exposure to liability (FitForce, Inc., 2010; Pronk, 2015). However, does being in better health or better shape necessarily contribute to fewer work-related injuries for police officers? Interventions offered to improve physical job performance have shown diverse results (Plat et al., 2011). Therefore, the literature was explored further to address whether better officer fitness is related to fewer job injuries or less absenteeism.

Having physically fit police officers has benefits. Fit officers tend to use less time off because of injury or illness and tend to be less stressed (Bissett, Bissett, & Snell, 2012; Quigley, 2008). *Physical fitness*, as defined by the Commission on Accreditation for Law Enforcement Agencies (CALEA, 2010), is “the ability to meet life’s daily demands, without undue fatigue, while maintaining sufficient energy or leisure time pursuits and to overcome emergency situations that may arise personally and professionally” (Smith & Tooker, 2011, p. 2). Yet who decides which fitness standards to implement and why is unclear. Whether the decision is personal, administrative, or political is known only by the agency. Other factors such as personnel, resources, and funding might contribute to policy decision-making. As funding for public safety decreases (Bueermann, 2012), it is important that agencies be able to do more with less. Doing more includes informing decision makers about using the best strategies with the most desirable outcomes.

Police academies instill physical fitness training and testing as a condition of graduation. Adequately preparing cadets at the police academy adds value to their future performance (Caro, 2011), as both strength training and cardiovascular exercise have rewards and can improve individuals' quality of life in many ways (Williams, 2002). However, most departmental policies do not require that officers maintain that fitness and then leaders wonder why officers have high stress levels and suffer from various health conditions at a higher rate than the general public (Williams, 2002). Physical activity is an integral part of healthy living (Pronk, 2009), as it helps to prevent heart disease and assists with weight control, thus protecting the body from injury (Quigley, 2008). Physical tasks required of police officers are similar worldwide. Some studies have found that certain physical agility tests are not strongly related to actual job requirements (Bissett et al., 2012; Bonneau & Brown, 1995). It seems evident that policing requires strength and endurance, in that officers are engaged in physical challenges regularly (Guffey et al., 2014). Because policing is a profession whose members experience a high level of job-related stress (Hartley, Burchfiel, Fekedulegn, Andrew, & Violanti, 2011), it seems that police officers who maintain their fitness are better able to cope with job stress and are better prepared for critical incidents than their peers who do not (Ebling, 2002). Thus, given all the benefits a fit lifestyle can bring, one might wonder why many officers are still unfit for the job (Williams, 2002).

Searching the Literature

A comprehensive review of the literature was conducted using several databases and search engines. Sources were obtained from Walden University's library using ProQuest Criminal Justice, EBSCO, and other databases. Google Scholar was also used to search and obtain peer-reviewed and topic-pertinent information. Key words were used in three main categorical searches for peer-reviewed articles. First, *police, law enforcement,* and *cops* were used interchangeably as 'OR' Boolean factors. Then *fitness, wellness,* and *health* were used as 'OR' Boolean factors. Finally, *policies, injuries,* and *absenteeism* were included. *Rational choice theory* was also searched in the various databases. These key words resulted in multiple returns, which were then examined for relevancy according to the topic at hand. The main focus was on recent literature within the last 5 years; however, other later sources were also used if it was determined that the content had relevance to this study. Electronic sources such as the BLS, OSHA, U.S. Department of Health and Human Services, and U.S. Equal Employment Opportunity Commission were used to find the most up-to-date information on health and work-related injuries.

From the literature obtained and reviewed, the following themes for discussion emerged: (a) the physical demands of law enforcement, (b) work-related injuries, (c) physical fitness policies in law enforcement, (d) the legalities of fitness standards, (e) physical fitness testing, (f) the POPAT, (g) the impact of *fit*ness for duty, (h) fitness resources for the workplace, (i) leadership in law enforcement, and (j) rational choice theory.

Physical Demands of Law Enforcement

Emergency service professionals are exposed to hazards that are inherent in the job (Plat et al., 2011). The physical demands placed on law enforcement officers specifically have been documented to include such activities as apprehending suspects, foot pursuit, and even firing a weapon (Anderson, Plecas, & Segger, 2001; Brown, Tandy, Wulf, & Young, 2013; Zimmerman, 2012). These demands include being able to apprehend and restrain individuals. In over 75% of police apprehensions, suspect resistance is moderate to strong, and the average amount of time to subdue a subject varies between 30 seconds and 2 minutes (Quigley, 2008). Such tasks require effort, which can be physically challenging (Anderson et al., 2001).

When police officers encounter high-risk situations, certain physiological patterns can be predicted and measured. Armstrong et al. (2014) documented that an officer's average heart rate throughout a shift was 22 beats a minute above an average resting heart rate. As officers encountered simulated use of force, their heart rates increased an average of 40 beats per minute. This demonstrates extra stress placed on the heart, which affects an officer both psychologically and physically (McCraty & Atkinson, 2012).

Even though police officer work patterns are characterized mainly by relatively long periods of low-level activity, occasionally, short periods of high-intensity activity are needed. To safely and effectively perform police functions, it is necessary to maintain a certain amount of physical fitness throughout one's career. Though much of the job can be executed independent of physical fitness, some tasks will require certain levels of physical fitness. However, how fit officers need to be and what factors can be used to predict successful performance are debatable (Collingwood, Hoffman, & Smith, 2004; Dillern, Jenssen, Lagestad, Nygard, & Ingebrigtsen, 2014). Ensuring that those in public safety are physically ready for their jobs can aid officers in performing their duties more safely. This effort can be enhanced by stressing positive lifestyle habits, as these habits help decrease health risks, improve quality of life, and assist agencies in reducing their liability by controlling risks and associated costs (FitForce, Inc., 2010).

A police department should ensure safe working practices, especially given that their officers face potentially violent situations (Bissett et al., 2012; Bonneau & Brown, 1995; Brown et al., 2013; "Fitness Tests Will Help Police," 2012). For example, arrests are commonplace among police officers, and research suggests that higher fitness levels affect arrest encounters positively. Because the physical task most frequently demanded of officers is arrest, upholding some level of fitness is important (Dillern et al., 2014). Anderson et al. (2001) collected data observations that justify certain occupational requirements for police work. These observations included officers having to physically control suspects. Testing of physical abilities include tasks wherein officers have to get to a problem, control the problem, and remove the problem through appropriate simulated measures. Such observations, along with self-report surveys, can be accurately measured and tested (Anderson et al., 2001).

The last several decades have demonstrated much change in police work, such as the encouragement of alternative methods of dispute resolution and new computer and technology skills. Therefore, some have questioned whether physical abilities are still important for police officers (Bonneau & Brown, 1995). The fact remains, however, that there is nothing routine about police work, and it often requires short, intense encounters. Therefore, officers should train to condition their bodies to adapt and perform under various unpredictable conditions (Zagaria, 2007).

Police are subjected to both physical and psychological stress as they relate to the workplace (Phadke, Khan, Iqbal, & Ramakrishnan, 2014). Thus, another important component of officer fitness is psychological fitness for duty. Fitness-for-duty evaluations (FFDEs) can be and are used when situations exist wherein officers must be psychologically ready for duty. The key object of this type of evaluation is to reduce an agency's liability (Fischler et al., 2011). Physical skills can be quite crucial when they are needed; they also have an important function from a psychological perspective for officers. Officers report that good physical skills can provide them with confidence as well as security when interacting with the public (Lagestad, 2012), therefore tying physical and psychological well-being to one another. However, it could be argued that the police job itself does not cause poor officer fitness and health; rather, a lack of agency fitness standards and programs is likely to blame (FitForce, Inc., 2010). This idea is explored later.

Work-Related Injuries

The Occupational Safety and Health (OSH) Act of 1970 requires certain employers to maintain work-related injury and illness records (Form 300) and note the extent and severity of each case. An injury or illness is considered work-related if an event or exposure in the work environment caused or contributed to the condition or significantly aggravated a preexisting condition (OSHA, n.d.). Trends show that recently, law enforcement has experienced a reduction in health and fitness in the United States, making officers even more prone to work-related injuries and illness (Quigley, 2008).

In fact, duty leave due to injury appears to be at a high rate among public safety workers, a large portion of whom are police officers (Violanti et al., 2013). Because police work can be physically demanding, stressful, and dangerous, officers have among the highest rates of injury and illness of all occupations (BLS, 2014). National accident, injury, and illness data show that 20% of an average police agency's workforce is responsible for 80% of accident costs, suggesting that this small percentage of least-fit officers is responsible for a large majority of injuries (Quigley, 2008). The leading causes of work injuries for police officers are falls, trips/slips, and mental stress (Ferguson, Prenzler, Sarre, & de Caires, 2011). Lower fitness levels tend to be associated with an increase in injury risk (Orr, Stierli, Hinton, & Steele, 2013), but the impacts of increased levels of fitness are a little less clear (Pronk, 2015). In a study of Milwaukee police officers across a 13-year span, Brandl and Stroshine (2012) found that accidents accounted for the majority of lost time from work when medical attention was sought.

Physical Fitness Policies in Law Enforcement

There are limited sources that define or identify law enforcement agencies in North Carolina that have a fitness policy, and if so, to what level or extent. One recent study in the state found that among 145 police agencies, a significant association between fitness maintenance policies and officer injury existed (Fortenbery, 2016). However, to further explore specific policy requirements and reasons for implementation, each agency would have to be contacted to learn more about standing policies. Research has been conducted in other states that provide a better picture of fitness policy prevalence. For example, among 37 police departments in Michigan, only three (8%) had a policy regulating fitness standards or programs (Williams, 2002). Policies on fitness standards vary; sometimes they are vague, but other times they are quite specific, with noncompliance potentially leading to termination (Burlington Police Department [BPD], 2010; Farley, 2011). The intent of this study was to explore this issue further within the state of North Carolina.

Fitness is something for employers to contemplate because it is directly related to work performance, productivity, and health care costs, which are all factors to consider in operating an effective agency. It is important to the employee because it affects income, health, and other quality-of-life issues. If employers would indeed benefit from fit officers, they should promote fitness backed by supportive policy, adhering to both state and federal regulations (Pronk, 2015).

The Legalities of Fitness Standards

In a general sense, employers are responsible for protecting their employees against physical harm that may reasonably be expected to arise in employment. If the necessary duty of care is not exercised, employers can be at risk for litigation (Rayson, 2000). Yet if certain measures or tests are to be used, those standards need to be job-related. Fitness tests should define the physical abilities needed in police work both objectively and realistically (Anderson et al., 2001) while complying with laws prohibiting discrimination (U.S. EEOC, n.d.). Data need to back up any standards or tests that are used in order to demonstrate that such standards or tests are correlated to job performance. Such data are available and should be used to document certain components of fitness such as body composition, cardiovascular endurance, anaerobic power, flexibility, strength, and agility in relation to the job (Collingwood et al., 2004; FitForce, Inc., 2010; Smith & Tooker, 2011). Ensuring that tasks are relevant to the industry assists in designing specific occupational standards that help to keep officers prepared to meet their job demands and avoid injury (McGill et al., 2013).

Several factors can hamper an employer's use of physical fitness tests because of disputes over the standards used; however, testing is necessary in this work environment

(Adams et al., 2014). One thing that an employer needs to take into consideration is Title VII of the Civil Rights Acts of 1964 and 1991. Title VII states, “it shall be an unlawful employment practice for an employer … to discriminate against any individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual’s race, color, religion, sex, or national origin.” This includes discrimination in relation to any aspect of employment, including certain terms and conditions of employment (U.S. EEOC, n.d.). An agency cannot have different fitness standards for men and women if they are doing the same job because this can have a legal effect of invalidating the standards (Means et al., 2011b). If an agency is to terminate police officers based on specific agency fitness standards, the legality of this matter depends on how the court interprets Title VII (Guffey et al., 2014).

Courts are increasingly scrutinizing departmental physical agility requirements, particularly if entry-level officers and incumbent officers are held to different standards; however, health-based standards are more likely to be upheld, as they focus on general fitness assessments (Bissett et al., 2012). The Americans with Disabilities Act (ADA) of 1990 also needs to be considered when making physical or medical inquiries of incumbent employees. If such inquiries are made, they need to be based on objective reasoning (Fischler et al., 2011). In *Tennessee v. Garner* (1985), police use of deadly force to apprehend fleeing felons was restricted. This ruling had an implication that officers should be adequately fit to both pursue and subdue suspects without having to depend on deadly force. A similar ruling in *Parker v. District of Columbia* (1988) found that an unfit officer was unable to affect an arrest and so resorted to the use of deadly force. Based on these rulings, administrators should consider adequate monitoring of officer fitness levels.

Proper medical and health screenings can help reduce litigation risk (Lee & Mallory, 2004). Employers need to adhere to all regulations that protect the health and safety of its workers (Pronk, 2015). If departments hire officers who possess sub-standard strength and ability skills, they could be held liable as it is the employer's responsibility to demonstrate that the physical standards required are based on essential elements of the job, and that the performance demanded is reasonable (Bissett et al., 2012; Bonneau & Brown, 1995).

Physical Fitness Testing

A consensus says that law enforcement officers should maintain at least some level of physical fitness, but what that level is varies according to who one asks, and how should this be assessed? (Means, Lowry, & Hoffman, 2011a). Recruit training is designed to prepare officers for duty, and so includes tasks that relate to daily police work (Orr et al., 2013). Across the state of North Carolina, law enforcement training academies include a standard fitness component as part of training. Research recommends that academy curricula be based on needs-assessment as well as job-task analysis using the most practical approach to testing content (Bonneau & Brown, 1995; Caro, 2011; Plat et al., 2011). Personal and team accomplishments are usually stressed because it is important for both personal well-being and survival in a profession that comes with high levels of stress and danger (Ebling, 2002). Police officers are taught in ways that correlate to the type of work they do (Zagaria, 2007) but sometimes contrary to what are found once in a place of employment.

Fitness testing in theory is a way to motivate police personnel to maintain a fitness level to promote job readiness (Adams et al., 2014). However, standards first need to be established, and justified as to their significance. Several fitness activities have been identified as commonly being used in police work. These include running, jumping, lifting, carrying, and dragging to name a few. It is critical that testing assesses all physical abilities that are required of the job, or what Bonneau and Brown (1995) refer to as *occupational fitness*. While officers may utilize aerobic endurance on duty, research suggests that physiological demands may also be anaerobic in nature (Orr et al., 2013). Fitness can be measured using various physiological standards, from oxygen consumption to physical strength (Bonneau & Brown, 1995).

It is recommended that fitness assessments are conducted to determine and record officers' fitness levels. Scores can then be compared to norms and standards (Cooper Institute, 2014) and should be evaluated on up-to-date standards (Schulze, 2012). Cooper Institute standards are used by many agencies, as well as academy fitness training. The Cooper Institute is renowned for its history, research, and publication in ability/agility testing. Often a 50th percentile is used as a fitness benchmark (Bissett et al., 2012), as minimum fitness standards are directly related to adequate job performance (Pronk, 2015) because higher injury risk was associated with factors such as older age, slower run times, and lower self-rated physical activity (including aerobic exercise) (Knapik et al., 2011).

There is no 'one size fits all' when it comes to required fitness standards for officers. Individual departments need to consider the job demands and the working environment. There is some debate about whether the programs should be voluntary.

Bissett et al. (2012) do not believe that voluntary programs are going to be enough. Williams (2002) agrees and emphasizes that without a policy, even resources provided often go unused without any kind of incentive behind it. That is why a policy would be most beneficial because it regulates fitness of individual officers. However, FitForce, Inc. (2010) would argue that a voluntary fitness/wellness program would be the most effective and cost effective approach. Another approach might be to use a worker's health surveillance (WHS) to detect health effects resulting from occupational exposure. A WHS can assist employees in safely and healthfully meeting job requirements. The goal is to periodically monitor employees and detect adverse health effects as early as possible so preventative measures can be taken (Plat et al., 2011). For these purposes, *wellness* is defined as "those purposeful actions taken to attain and maintain optimal health and fitness" (Smith & Tooker, 2011, p. 3).

To standardize a job-related test, one's ability to perform the physical demands of core police tasks needs to be examined (Strating, Bakker, Dijkstra, Lemmink, & Groothoff, 2010). Both construct and criterion validations are accepted as job-related standards. Criterion such as job descriptions and injury reports can be examined to identify these standards. And because job tasks are not often performed in isolation, utilizing sequence events makes them more real-world situations (Collingwood et al., 2002). Job simulations are often used in testing to measure multiple physical abilities. These types of tests are beneficial because they possess a higher content validity than simple, single ability tests. But, job simulations can only predict performance within its administered context (Courtright, McCormick, Postlethwaite, Reeves, & Mount, 2013). Collingwood et al. (2004) used multivariate regression to demonstrate validity as it relates to fitness activities. Regression analysis indicated that a group of specific test items can be good predictors of job tasks, and multiple primary physical factors that they analyzed met these criterions. Data must support and demonstrate a correlation between fitness testing and any job criterion performance, thereby establishing continuity in standards. It is incumbent standards that are key to successful job-related testing (Means et al., 2011a).

One concern about testing is that some criteria used by law enforcement agencies are argued to be discriminatory, particularly against sex. Large male-female differences exist within certain physical abilities. Therefore, test validity needs to demonstrate and defend its use, or different performance measures for women and men need to be developed based on normed scores (Anderson et al., 2001; Bissett et al., 2012; Courtright et al., 2013). Yet caution is needed when using gendered tests because separate standards could reinforce biases when it comes to gender since standards tend to establish biological sex and not biologically determined physical ability (Schulze, 2012). But, Means et al. (2011b) argue that whatever levels of fitness are required to perform the essential minimum physical functions of the job, they are achievable by most, regardless of gender or age, with as little as three hours of training per week. Another concern is tests that are used for employment selection generally focus on entry-level skills and ability. But a disjunction seems to exist if certain physical abilities are deemed essential to the job, and incumbent officers are not expected to also maintain these abilities (Bissett et al., 2012). The challenging part is that no matter what the demographics are of the police officer, the fundamental tasks to be performed on the job are the same (Bonneau &

Brown, 1995), even though women and older persons tend to test lower or slower (Strating et al., 2010).

Fitness standards for law enforcement officers should be tested to ensure that both new and incumbent officers possess the physical abilities to perform necessary tasks of the job. Standards should be developed, and training programs should be provided so that all officers have the access to and knowledge of skills needed to maintain personal fitness throughout their career (Means et al., 2011a). Such tests are important because those who do not meet job-related demands tend to perform lower, have more injuries, and more absenteeism (Collingwood et al., 2004; Courtright et al., 2013), all which can equate to reduced resources available. Lower levels of physical activity have been associated with absenteeism in the workplace, therefore employers should implement programs that will promote healthy activity levels (Pronk, 2009; Steinhardt, Greenhow, & Stewart, 1991).

Even administrators have recognized the need not only for officer fitness, but for lasting fitness maintenance programs (Lee & Mallory, 2004). Perhaps mandatory standards are not necessarily the answer, but the solution could be mandatory *testing* (Panos, 2010).

Police Officer Physical Abilities Test (POPAT)

There are no national guidelines for physical fitness tests of police cadets, though most academies require some type of fitness standard (Schulze, 2012). In North Carolina, that standard is POPAT. The POPAT has been scientifically validated as being job specific, as it measures certain abilities that are required for general police duties (Anderson et al., 2001; North Carolina Department of Justice, 2015). In North Carolina, for over 20 years, BLET students have been required to demonstrate job-related physical ability competencies as a condition of graduation. This test consists of a series of tasks that are designed to assess the physical abilities necessary to effectively perform the job of a police officer. The tasks were developed to mirror real situations that an officer might encounter on the job (North Carolina Department of Justice, 2015).

In 1998 the North Carolina Justice Academy (NCJA, 2000) POPAT subcommittee was specifically tasked with examining and evaluating various options as they related to the proposed POPAT. They were then to develop as well as deliver recommendations for using POPAT as a physical fitness measure (pass/fail) of the BLET program. In April of 2000, the committee agreed to adopt the POPAT report for several reasons. First, they felt such a test was reasonable, fair, and trainable. It was also deemed to be safe, practical, and consistent. The skills included in the POPAT were related to task analysis conducted in 1998 and the committee justified each of the following according to this task analysis. To be completed in seven minutes and twenty seconds (7:20) or less in duty belt and gear, cadets were to do the following:

1. Verbally recall street location
2. Exit police vehicle from seat belted position and run 200 yards
3. Pull a 150-pound person from vehicle and drag them 50 feet
4. Run up and down a five-step staircase three times
5. Push open and go through a 50-pound weighted door
6. Do 20 push-ups and twenty sit-ups
7. Run up and down a five-step staircase three times
8. Crawl through a 25-foot culvert

9. Do 20 push-ups and twenty sit-ups
10. Run 200 yards and return to vehicle
11. Drag a 150-pound person 50 feet
12. Verbally recall street names (NCJA, 2000).

The committee rationalized that the POPAT was reasonable and consisted of tasks that officers might perform while on duty. Officers need to be able to respond to multiple activities that include speed, agility, balance and stamina, and the POPAT was seen as a representation and combination of a variety of skills that may be required of an officer (NCJA, 2000). For example, the Burlington Police Department (2010) utilizes biannual POPAT testing of newly sworn officers as of January 2014. Collingwood et al. (2004) identified many of the same underlying and predictive fitness activities as they pertain to the POPAT. The primary factors identified include absolute upper-body strength (pushups), agility, anaerobic power (1.5 mile run), and anaerobic power (300-meter run). Their data indicates that certain physical activities can help determine a police officer's capability to perform essential tasks.

In 2008 another job analysis gave credence to altering the former POPAT test, which became effective for all BLET students starting in the fall of 2015. The scientific validation of the "new and improved" POPAT yielded a 95% confidence level. The test was designed to differentiate between individuals who can and cannot perform certain physical functions of a police officer's job at an identified adequate level of proficiency (North Carolina Department of Justice, 2015). The new test consists of two scenarios. Scenario 1 (chase and apprehension, to be completed in six minutes (6:00) or less wearing a ballistic vest), is as follows:

1. From a seated position, run 40 feet and back twice
2. Run 60 feet and return, with a 4-foot broad jump, 4 foot "fence" climb, and 2 feet high crawl obstacle in between
3. Roll a 100-pound dummy three times
4. Do 20 push-ups
5. Conduct another three-repetition dummy roll drill
6. Run 60 feet and return, with a 4-foot broad jump, 4 foot "fence" climb, and 2 feet high crawl obstacle in between
7. On step box, take 30 steps up and down
8. Conduct a three-repetition roll drill
9. Do 20 push-ups
10. Conduct a three-repetition roll drill (North Carolina Department of Justice, 2015).

Scenario 2 (rescue, to be completed in three minutes (3:00) or less wearing a ballistic vest), is as follows:

1. Run 50 feet and back twice
2. On step box, take 30 steps up and down
3. Run 50 feet and back twice
4. Drag a 175-pound dummy 25 feet and back (North Carolina Department of Justice, 2015).

Training programs should constantly be assessed to ensure they are both current and relevant. Violence is prevalent in the current environment and so training should be as realistic as possible. Officers should be provided with solid, research-based scenarios that prepare them for an evolving and changing climate within which they work (Miller, 2015).

The Impact of *Fit*ness for Duty

Though police work tends to largely be sedentary (Ramey et al., 2014; Steinhardt et al., 1991) and not always physically demanding, when officers need to engage in physical agility, their fitness level may very well be a determining factor of the outcome (Brown et al., 2013). Shiftwork is often an inevitable circumstance of police work that can contribute to this issue. Wirtz and Nachreiner (2012) concluded that the exposure to shiftwork had a significant impact on fitness for duty, particularly after 20-22 years working in this environment. An effective fitness program can help counteract some of the adverse health impacts of sedentary and shift work (Pronk, 2015). The inability to maintain resilience can impair judgment and the ability to make decisions. Results can potentially lead to inappropriate application of force which can carry lasting consequences such as compromising public safety, injuries and even lawsuits (McCraty & Atkinson, 2012; Zimmerman, 2012) as discussed earlier.

An unfit officer increases the probability of injury both to him or herself and to others (Boyce, Hiatt, & Jones, 1992). Unfit officers can be a liability in several ways. First, officers may use excessive force to compensate for an inability to use physical restraints, or second, unfit officers may cause other officers to be injured because they are unable to render adequate assistance. This not only presents potential legal exposure for those officers, but vicarious liability can also be extended to that officer's agency (Guffey et al., 2014).

Improved physical ability profits both the officer and employer. Officers profit from increased job performance, reduced stress and better mental preparation. Agencies benefit in terms of fiscal responsibility and efficiency (Quigley, 2008). Employers are the ones who bear the financial consequences of reduced work productivity and increased medical spending, and therefore are likely to benefit from a healthier workforce. Investing in and providing both means and incentives would seem to give~~s~~ an employer a return on their investment (van Dongen et al., 2011). Boyce, Jones, and Hiatt (1991) set out to investigate this relationship between physical fitness and work absences in police officers. But they found that the extent to which fitness predicts absenteeism is actually low. This is contrary to other and more up-to-date research, but does provide a valid focus to distinguish between absenteeism versus injuries.

Studies involving law enforcement officers indicate that more fit and active officers report 40-70% less absenteeism. This equates to a cost savings to the agency, therefore demonstrating that agency money spent on workplace fitness and wellness saves dollars as fit officers miss fewer work days (Smith, 2010; Smith & Tooker, 2011). These employees are also more highly productive (FitForce, Inc., 2010). Local and state governments across the United States are spending more money on policing than they did several decades ago. In a time where budget cuts are more likely than budget increases, a way to reduce some policing costs is to maximize productivity (Gascon & Foglesong, 2010). Unfit employees cost agencies lost days from work and increased insurance costs (Panos, 2010). Since a lack of fitness standards can be costly it leaves to wonder why departments do not set standards and provide training (Williams, 2002).

But, physical activity and fitness have a preventive effect on these factors (Sassen, Kok, Schaalma, Kiers, & Vanhees, 2010; Wright et al., 2011) which can have implications for the workplace. Therefore, the need to stay healthy requires both diet and exercise in order to maximize fitness level (Guffey et al., 2014; Hartley et al., 2011; McCraty & Atkinson, 2012). For example, interventions such as increasing physical activity and fitness can help improve cardiovascular risks (Sassen et al., 2010) as higher levels of cardiovascular fitness can be related to reduced absenteeism (Steinhardt et al., 1991).

Even though officer fitness is important, fitness alone is not sufficient. The focus should be on more than one risk factor to reap beneficial outcomes (Gerber et al., 2013). A healthy weight and physically active lifestyle are important for general health. But fitness also matters as it pertains to disease and illness prevention, as well as social and economic concerns in the workplace. However, since the workplace is but one component of life, a broader fitness perspective does need to extend beyond the workplace (Pronk, 2015). In fact, Ramey et al. (2014) and Boyce et al. (1992) found that police were more active off-duty, or unsupervised, than at work, or supervised. Work is connected to the home and the community. Health behaviors extend across all environments and are difficult to separate (Hymel et al., 2011).

Injuries pose a public health problem and effective strategies could help decrease this burden. But, public health practice has been a bit slow to address injury prevention (Stier et al., 2012), perhaps because of reluctance. Law enforcement agencies may be reluctant to partner with public health agencies because they are unclear on mandates.

However, North Carolina has taken initiative by partnering with various agencies to identify resources and responsibilities (Stier et al., 2012).

The advantages of a healthier, fitter, and energetic workforce include lowering absenteeism rates related to sickness. This is worth the necessary measures ("Fitness Tests," 2012). Past studies have demonstrated that a correlation exists between the length of time on the police job and a decline in health and fitness (Panos, 2010) so agencies could benefit from a fit workforce in both performance and health. This leads to greater contributions and enables communities to invest elsewhere (Pronk, 2015). Exercise can help with the stress associated with the law enforcement job and contribute to more positive coping. Agencies recognize that fitness is important for their officers, and encourage maintaining a healthy and adequate fitness level, but many find it difficult to implement some kind of fitness program (Ebling, 2002; Lagestad, 2012). When police officers engage in physical activity on a regular basis, it better prepares them to deal with work-related situations requiring physical force, and helps strengthen their psychological well-being (Lagestad, 2012).

If departments choose to test and evaluate officer fitness, programs need to be put into place that can assist officers to both attain and maintain a necessary fitness level for the job (Bonneau & Brown, 1995). Of several national voluntary fitness and wellness programs, data showed improvements in overall fitness, therefore increasing productivity and reducing both absenteeism and worker's compensation claims (Quigley, 2008). Health, fitness, and wellness should be included in a program as they are related and complement one another (Smith & Tooker, 2011). A supervised and job-specific exercise program for police officers improved fitness after 6 months in men and women.

However, a continued supervised exercise program is likely needed to maintain long-term health benefits (Rossomanno, Herrick, Kirk, & Kirk, 2012). Fitness and wellness programs also show to increase loyalty, generally improve morale, and reduce turnover (Quigley, 2008; Smith & Tooker, 2011).

Ferguson et al. (2011) suggested that prevention should be a focus of future work, given the critical role that police officers play in preventing crime, maintaining order, and providing emergency services. Prevention begins in the police academy. If police candidates are not screened and fail to successfully perform certain duties, this can result in injury/disability, turnover, and poor productivity which can have both a human and economic cost (Anderson et al., 2001). In total, medical expenses and lost productivity from injuries are estimated to exceed $400 billion (Stier et al., 2012). Law enforcement agencies take up a piece of this pie.

The Cooper Institute (2014) believes that fitness in law enforcement is necessary because it relates to (1) the ability of officers to perform essential job functions, (2) minimizing excessive force situations, (3) minimizing health risks associate with the police job, and (4) meeting the legal requirements to avoid litigation. To emphasize these points, an agency that does not address officer fitness requirements is susceptible to litigation for negligent (1) hiring of those not fit to do the job, (2) training to help officers maintain their physical capabilities of job demands, and (3) supervision of such individuals (Williams, 2002). Ensuring fitness for work can lead to increased quality of production, both decreased absenteeism and turnover, and lower medical costs which reduces incidence of injury (Rayson, 2000).

Fitness Resources for the Workplace

Once employed officers continue to train in many areas such as legal updates, driving, firearms, and defensive tactics to name a few. Yet most often fitness is not one of those areas of focus (Williams, 2002) although we know its benefits. Pronk (2009) demonstrated that most fitness interventions resulted in positive effects among employees. Research supports that comprehensive, multicomponent physical interventions lead to significant improvements in health, as well as reduce absenteeism (Steinhardt et al., 1991). This generates positive return for the employer (Pronk, 2009). There are potential resources available to agencies within the state, but little is known as to whether agencies are aware of, or are using such resources.

North Carolina is one of seven states that mandate full-scope injury prevention programs. General Statute 130A-224 provides that "the Department of Health and Human Services establish and administer a statewide injury prevention program and designate the Division of Public Health as the lead agency for injury prevention activities." Injuries are often predictable and preventable, but laws by themselves cannot prevent injuries, action must be taken (Stier et al., 2012). Both health protection and promotional programs need to be intertwined to promote a healthier and safer workforce. A healthier workforce will be safer and a safer workforce will be healthier (Hymel et al., 2011). Program intervention should extend outside the workplace, utilizing community resources as well through incentives (Pronk, 2015).

Under the auspices of the U.S. Department of Health and Human Services (HHS, 2015), the *Prevention and Public Health Fund* provides workforce wellness program opportunities. It emphasizes prevention initiatives and provides grants to small employers to assist with the implementation of such programs. The pressure is placed on both workers and employers as health costs skyrocket. Health measures aimed at improving the workforce could significantly have a long-term impact and save billions in costs (Hymel et al., 2011). According to Harte, Mahieu, Mallett, Norville, & VanderWerf (2011), health impacts workforce productivity, and if an organization integrates a wellness benefit program, it can achieve a substantial saving between 15-35%.

Leadership in Law Enforcement

Improving the overall health of law enforcement officers can provide economic motivation for an agency. However, an officer who meets physical fitness standards upon initial employment does not necessarily ensure overall health maintenance throughout a career (Bissett et al., 2012). An important part of one's well-being lies within the work environment. Health can be affected by work conditions, and although different types of stress exist, physical stress affects health the most (Phadke et al., 2014). A well-oriented and trained leadership is essential to a successful fitness program (FitForce, Inc., 2010). Workplace health promotion programs should engage employees and show long-term impacts on health and costs, as well as minimize absenteeism. But absenteeism needs to be specifically defined as it is difficult to measure (Steinhardt et al., 1991). Programs should operate in an environment that embodies best practices (Pronk, 2015) but to be successful, physical programs need top management support, exist in a supportive environment, and engage all levels of management (Pronk, 2009).

How officers are managed strongly influence their commitment and employees are more likely to contribute in positive ways, meaning cost benefits through lower absenteeism and lower turnover rates (Dick, 2011). Police leader management is linked to agency organization and is influenced by norms. These para-military organizations tend to have high levels of organizational commitment because the culture has strong obligational norms. A supervisor that wishes to implement a fitness program has a good chance of earning support from higher up. This type of support may have many benefits, including on-duty benefits (Williams, 2002). Physical fitness is part of a culture and can be supported from the top (i.e.: chief) down (Panos, 2010). Even when it comes to stress, quality work-peer relationships along with organization support are correlated with stress among police officers, and stress can affect the physical health and well-being of officers (Papazoglou & Andersen, 2014). Absence from work can be influenced by work structure. Policy that institutes any kind of health circumstances needs to consider the employer's structural influences and advocate presenteeism and its desirable outcomes. Organizations seeking to minimize absenteeism should perhaps focus on not only is an individual fit for work, but does the work fit the individual (Irvine, 2011).

Because public sector agencies (like law enforcement) have little or no incentive to change, leaders might question the relevance of supporting change. However, hiring processes and training academies change to adapt to the changing needs of the new generation; therefore, administrative practices and leadership also needs to change. Agencies need to balance both constancy and predictability that change must be adapted (Batts, Smoot, & Scrivner, 2012; Dick, 2011).

Within public decision-making, most ethical codes rely on internal, organizational controls (Franklin & Raadschelders, 2004). Franklin and Raadschelders (2004) found that both structural and procedural controls provide guidance to the decision-making process. The vertical chain-of-command can lend itself to isolated functions and so law enforcement agencies need to be proactive in their leadership to provide continuous and cross-functional development (Putney & Holmes, 2008). Supervisors, particularly executive management needs to both participate and support any fitness program (Quigley, 2008; Smith & Tooker, 2011). They should promote an appropriate culture of wellness that encourages employees to maintain a healthy lifestyle (Zimmerman, 2012). This commences the planning process.

Strategic planning in public sector agencies takes a "big picture" approach. It uses futuristic thinking and analyzes courses of action to ensure that an agency's effectiveness and abilities add to public value (Poister, 2010). Policy initiation is crucial to decision-making where first identifying background and problems are critical because there is always a gap between a problem and acting based on a decision (Political Science Notes, 2013). Commitment from top-level leadership is essential to successful strategic planning and execution as strategic planning needs to be consistent with top executive management style and the reality of an organization's decision-making process (Ugboro, Obeng, & Spann, 2011; Williams, 2002).

As good and practical as a fitness program may seem, the budget process may present dilemmas for its progress. Decisions made might favor some but not other values, but choices must be made (Franklin & Raadschelders, 2004). Civil servants play an important role in choices made during policy-making. Since they do not hold political office, they are not held to as intense political pressure because of reelection interests, so they bring a solid perspective to the playing field (Franklin & Raadschelders, 2004). Public agencies need to make an effort to be inclusive of their external stakeholders and involve them in the decision-making process, for example using surveys, focus groups or even forums (Poister, 2010). When it comes to fitness, levels in the workplace can directly or indirectly impact the community and society as it enhances local as well as national security and safety (Pronk, 2015).

Effective leadership will be critical in order for a police fitness program to be successful (Lee & Mallory, 2004). Strategy needs to be formulated by both top executives and line managers if planning is to be supported. This can be done by monitoring performance measures, aligning budgets with strategic plans, and communicating strategies to all stakeholders (Poister, 2010). Both internal and external partnerships are essential in collaborative efforts to ensure employee quality (Putney & Holmes, 2015).

Rational Choice Theory

Rational choice theory as initially described by Becker (1976) was applied to law enforcement leadership decision-making, attempting to explain the absence (or presence) of physical fitness standards at law enforcement agencies in North Carolina. Rational choice theory holds that individuals act as utility maximizers that include individual preferences and self-interest. More specifically in the social sciences, both individual behavior and social interaction affect the policymaking processes in government (Jones et al., 2006). It can be applied dynamically in which planning for the future and considering the present are included (Green, 2002). Analysis will usually begin with a question and can be worked through in several steps:

1. identifying relevant agents and constraints,
2. determining and applying consistent rules for each agent,

3. exploring predictions and experience, and
4. drawing conclusions (Green, 2002).

Rational is applied in social sciences as meaning that choices made reflect the most preferable and feasible alternatives that are available. The theory can be applied by focusing on three main components. (1) Maximizing *utility* is the assumption of rational choice theory, or in other words, choosing the preferred alternative that benefits the most. (2) Another element of the theory is *constraints*, or things/circumstances that exist in which making a choice is necessary, therefore also taking into the consideration the (3) *environment* in which choices are made. Theory follows the pursuit of specific objectives at an organization (Green, 2002). Even though policy is made by organizations, it is the interacting of human decision makers and individual choice that put such policy into action (Jones et al., 2006).

Rational choice theory contains several characteristics including that decision makers first, hold both ranked and ordered preferences for outcomes, and second, possess the necessary information to connect choices to outcomes to optimize preferred outcomes (Jones et al., 2006). Decisions are not made in a vacuum but they are made to serve definite purposes. Rationality needs to be important in the decision-making process, or public utility will be adversely affected (Political Science Notes, 2013).

Evidence suggests that a supportive organizational work environment has both a positive and direct influence on organizational commitment. In other words, commitment is influenced by the way employees are managed rather than by job demands (Dick, 2011). Rational choice theory, though most often an approach used to explain economics, can be applied to understand human behavior within the social sciences. It begins with making choices by one or more individual decision-making units and assumes such choices are made based on larger "typical" or "representative" populations. Analysis then examines how individual choices interact with one another to produce outcomes (Green, 2002).

Summary

A clear majority of police academies in the United States use some physical agility test that tests mostly for strength and endurance. Some agencies use agility tests, either as a pre-employment condition and/or a condition of continued employment. The reason is that these tests are most widely accepted as underlying factors that attribute to physical demands placed on police officers. Even though agility tests are commonly used to screen police applicants, the requirements of officers to maintain a standard of health and fitness are fewer (Bissett et al., 2012; Glassman, 2003), particularly among North Carolina agencies (Fortenbery, 2016). Studies consistently show that physical fitness does have a direct impact on reducing injuries as well as improving personal well-being and work performance (Quigley, 2008). Police agency policies do not reflect the findings for various, unknown reasons. Aside from personal health and agency cost benefits, a certain fitness level also portrays a more professional image, and contribute to reducing excessive use of force incidents (Williams, 2002). Both topics are worth pursuing in future research as it relates to officer fitness. But for now, chapter 3 presents the current research's methodological approach.

Chapter 3: Research Method

Introduction

The North Carolina Criminal Justice Commission mandates employment and training standards for law enforcement officers in the state. The Commission also regulates the required standards for the BLET program, including physical fitness. However, fitness is not one of the employment guidelines. A foundation for fitness is laid, but only across law enforcement training academies in the state; policy does not mandate fitness once officers are employed. Commission responsibilities do not extend into the agencies themselves when it comes to requiring certain fitness standards to remain employed. Therefore, there is a gap in academic research as to why some agencies continue fitness standards and others do not, particularly given knowledge of the benefits of healthy, fit individuals. Further, although the Department of Labor requires all industries to report work-related injuries to OSHA, it is not known whether there is some kind of connection or correlation between injured officers and set agency fitness standards. If there is, this information could both inform agencies across the state and contribute to the literature pertaining to North Carolina law enforcement agencies. The intent of the current mixed-methods study was to fill this gap in the literature, described in more detail as follows.

Research Design

This research study consisted of a mixed-methods approach using both quantitative and qualitative methodologies. A quantitative approach provided the statistics necessary to determine whether a relationship or correlation existed between fitness policies and work-related absenteeism and injuries among a small sample of law enforcement agencies in North Carolina. It did not provide an explanation as to why some agencies have instituted physical fitness policies and some have not. When research points not only to individual benefits, but agency benefits as well, the question is left unanswered as to why some policies are not in place. Therefore, the second phase of this study used a more detailed case study through a qualitative design to better understand this gap. For example, the use of a questionnaire explores who knows something as well as what is known (Bergman, 2008) within an agency.

Case Study

A multisite case study approach guided this research, as data collection involved multiple sources of information including policy and injury report documents and interview questionnaires (Creswell, 2013). Upon gaining appropriate approval to participate, six law enforcement agencies were examined to try to gain an understanding of why policy differences exist among agencies that have no (or voluntary) fitness policies, agencies that require some participation in fitness activities, and agencies that have very stringent and rigid policy. These agencies were selected purposely according to size and type of policy. In this study, a particular area of interest was determining whether a relationship existed between fitness policy and work injury and absenteeism, so it was necessary to first collect descriptive, quantitative data. The qualitative aspect further entailed examination of policy decision-making and implementation using interviews.

Research questions were considered before determining the order in which elements of the methodology were applied because order can influence results. For the current study, I used a concurrent QUAN -> QUAL design. The quantitative component was one stage of the concurrent design and was conducted at the same time as the qualitative component, which included the use of interview responses (Nastasi, 2010) to understand administrative roles in policy decision-making. The justification for the quantitative aspect was that I would use a sample to first determine whether a relationship existed between the independent and dependent variables, controlling for level of policy. I then examined how policy decision-making might influence any significant findings (*see Figure 1*).

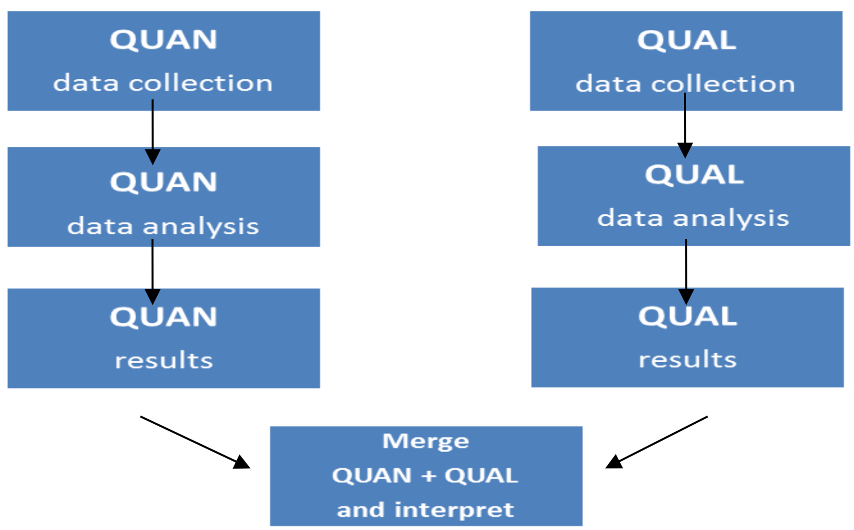

Figure 1. Concurrent/triangulation design. Adopted from *The Mixed Methods Reader* (p. 380), by V. L. Plano Clark & J. W. Creswell, 2008, Thousand Oaks, CA: SAGE. Copyright 2008 by Sage Publications, Inc.

Role of the Researcher

Having been a North Carolina BLET fitness instructor for 14 years, I have become aware that a gap exists between police academy fitness standards and law enforcement agency fitness standards in the state. In an effort to address this lack of understanding, I conducted an extensive search of academic and trade literature, looking at studies both within the United States and worldwide that pertained to police officer fitness, wellness, and job injuries. As I became familiar with this literature, I found that the same questions remained unanswered, and these questions consequently became the focus of this study. First, I sought to determine whether fitness requirements that carried over to law enforcement employment were related in any way to the prevalence of workplace injuries and/or absenteeism. Second, I sought to identify who made agency fitness policy decisions and what the rationale and influences were behind these policies.

To address whether fitness policy correlated with injuries and absenteeism, it was important to narrow down the field of study while remaining focused on law enforcement agencies in North Carolina. Because of time and cost constraints, it was necessary to identify a manageable sample of agencies within the state. Because past qualitative studies in this area had used a sample of six, it was determined that a sample of six agencies would serve the purpose of this study and answer the research questions being sought. First, agency fitness policies and OSHA 300A summary forms were examined and analyzed for significant variance. Second, an interview was conducted with a training officer at each site to gain a better understanding of the policy-making process. This meant first constructing a questionnaire in which the content addressed these questions. Feedback from a local advisory committee was sought to ensure that questions were on target regarding the information being pursued.

The next step was to identify and contact six law enforcement agencies in the Piedmont Triad area that were willing to participate. I explained the study before I gained the necessary permission to review the requested documents. Phone contacts were made until two agencies from each policy level category (voluntary, changed or progressive, and mandatory over a 5-year period) were identified. Mid-size agencies (serving a population of 50,000 – 500,000) were used for fair comparison purposes.

Creswell (2013) suggested that qualitative researchers collect their own data. Therefore, after gaining appropriate permission from the participating agencies, I made an appointment with each to both review documents and interview training officers. Anonymity was guaranteed, and results will be shared with the agencies after final analysis. It was my responsibility as the researcher to collect and analyze all data once appropriate Institutional Review Board approval had been secured. No individuals or agencies encountered any expenses related to participating in this study. Any expenses incurred because of this research were my responsibility as the researcher, including any supplies, travel, and documentation needed.

Research Population and Sample

According to the North Carolina Justice Academy (NCJA, n.d.), there are approximately 495 police agencies in the state, including state, municipal, county, hospital/healthcare, college, and airport agencies. The state is made up of 100 counties and is geographically divided into three regions: the Mountains, the Piedmont, and the Coastal Plains (see Appendix A). The Piedmont is the middle region of the state. Within this region, the Piedmont Triad consists of 12 counties (Piedmont Triad Regional Council, 2012). This region was the focus of the current study from which a sample was drawn for location and convenience purposes. In selecting a sample of law enforcement agencies located within the Piedmont Triad region (see Appendix B), the focus was on "midsize" populated areas (50,000–500,000 people) as defined by the International Association of Chiefs of Police (IACP, 2014). The IACP (2014) has cited nearly 700 midsize cities in the United States, hosting a combined population of more than 75 million. This is almost twice the population of major cities (those with populations greater than 500,000) and represents nearly one-quarter of the total U.S. population. These jurisdictions comprise a significant proportion of the American urban and suburban landscape. This is a significant presence in the American municipal landscape, and it has not been until recently that midsize cities and their associated police agencies have been a distinct area of focus for research, funding, or advocacy as recognized by the IACP in 2009. Since then, research priorities have focused on the needs and interests of midsized populations. For these reasons, I chose to draw a sample for the current research from this population base. Appendix C identifies the counties, cities, and state agencies that met the above criteria within the Piedmont Triad population base.

A sample of six midsize municipal North Carolina law enforcement agencies in the Piedmont Triad region was used for convenience. Two agencies from each of the following categories were studied: (1) no mandated/voluntary fitness policy over the last 5 years, (2) a changed or progressive fitness policy over the last 5 years, and (3) a continued mandated fitness policy over the last 5 years (2011-2015). Using these midsized agencies provided adequate data and statistics, from which any significant relationships in variance should be evident between policy level and injury and absenteeism reports. Using three categories allowed for comparison across policy type, and a 5-year period allowed for examination across multiple years to ascertain whether trends remained consistent.

Instrumentation

The documents collected at each agency consisted of instituted fitness standards for the years 2011-2015, as well as OSHA 300A forms documenting missed work days due to injuries or absenteeism for the same 5-year period. Hard copies of all documents have been kept in a locked file drawer within my personal home office, with the key located in a place only known to and accessible by me in order to protect confidentiality. Any electronic documents or correspondence related to this study have been saved on a designated research flash drive and kept in my locked possession. Backup electronic documents have been stored in a password-protected folder on my personal home computer. All records will be kept for a minimum of 5 years.

The second part of the study continued with interviews. Interviews are commonly used in qualitative research (Creswell, 2013). Interview questions addressed the following: (1) the rationale for department officer fitness standards, (2) whether policy was intended to address work-related injuries and illnesses, and (3) how policy decisions were made and influenced. Question wording in an interview is important because how questions are asked can affect the responses they elicit (Patton, 2002). The question categories listed above seemed appropriate to explore differences in policies, whether policy might contribute to work-related injury rates, and what influenced policy. The interview process allowed for the flexibility of emergent design with the questions covered. It allowed for both the interviewer and interviewee to include any additional information that emerged and was pertinent to the study through the use of open-ended questions.

Ethical Procedures and Considerations

The Code of Ethics of the Academy of Criminal Justice Sciences (ACJS, n.d.) was the guiding code for this study. This organization addresses the scientific discipline of those who study, research, teach, or practice in the criminal justice field. Criminal justice professionals are expected to adhere to the Code of Ethics when applying ethical behavior in their everyday professional activities. General principles within the code include recognizing the potential for harm, not knowingly placing the well-being of oneself or others in jeopardy within professional work, and ensuring anonymity in research (ACJS, n.d.). These principles guide law enforcement administrators, organizations, and educators, specifically within their policy and field practices.

Protection of Human Participants

Protecting human participants is important in research. In this study, data collection through interviews required human participation and contact. Because interviews were conducted at law enforcement agencies, physical safety was assumed. Because the content was not of a personal nature, there were no anticipated psychological effects. Participants were briefed on informed consent and privacy and were advised that at any time, they could elect to cease study participation without any repercussions.

Informed Consent

Informed consent is a process that includes telling participants who is conducting a study as well as why they were selected to take part. Rudestam and Newton (2007) provided practical guidelines on how to proceed with informed consent. When asking subjects to participate, it is appropriate to indicate the time commitment and any benefits that can be expected to arise from the study. In this case, the time commitment was approximately 2 hours per agency, and participants will be provided with both the data analysis and questionnaire results. Potential risks needed to be addressed, which in this study were minimal to none in relation to participants' agreement to provide policy documentation as well as injury statistics reports. All agencies that agreed to participate were asked to sign and return a letter of cooperation.

Right to Privacy

Participants are entitled to confidentiality (ACJS, n.d.), so it was important to protect the identity of all agencies and any names associated with them. Protection of both agency and individual identities was achieved by assigning each agency a number (e.g., Agency 1, Agency 2, or Training Officer from Agency 1, etc.). Allowing participants to ask questions and ensuring that participation was voluntary were also necessary (Rudestam & Newton, 2007) and were emphasized in the research process, both verbally and in writing.

Honesty

Honest communication and reporting of results is essential to ethical research. I engaged in no intentional misrepresentation or misleading action of any kind during the study. High ethical standards were applied, and the results were reported completely and honestly.

Institutional Review Board (IRB)

To ensure that ethical standards were applied, the IRB process served as a critical step in this research. Walden's IRB ensures that any research conducted under the auspices of the university complies with both ethical standards and federal regulations. Students, along with their committee members, must submit and receive IRB approval before collecting any data (Walden, 2010). To comply with Walden IRB requirements, I submitted a completed application prior to seeking participants for this study. Once approved, agency participants were contacted to voluntarily participate in this study.

Data Analysis

Statistical Package for Social Sciences (SPSS) was used to record and analyze the quantitative data to test the study's hypotheses. Frequencies, variance, standard deviation, and crosstabs were applied to provide a general distribution of descriptive statistics. Analysis of variance (ANOVA) was used in the data analysis to determine the significance of any variance between the study's variables. If the variables were found to be significantly related, the null hypothesis was rejected. I determined and defined the level of measurement for each variable used, which helped to determine the statistical analyses that were used (Thornton, 2011). In a quantitative analysis in which the aim is to generalize to a larger population, sample size is important. Given that a sample of six was used out of a population of 495, generalization was of course not possible.

Dissemination of Study Findings

The research results in total will be shared with participating agencies as well as the North Carolina Justice Academy and other interested law enforcement agencies in the state. Confidentiality and unanimity were and will be maintained. Personal contact will be made with each agency training officer upon completion of data analysis and results. Law enforcement trade magazines will be solicited for potential publication, making study results available to this targeted audience.

Validity and Reliability

To establish transferability in the qualitative aspect of this study, Creswell (2013) suggested that sampling is essential, particularly to establish external validity. In this study, purposeful sampling was utilized to select police agencies that made up varying levels of fitness policies. One of the most credible manners to ensure internal validity is through triangulation, or collecting data from various sources such as interviews, questionnaires, and assessing different documentation of data. Triangulation uses different research designs to examine data from different perspectives, which is why interviews were also conducted and included in the study evaluation. Every effort was made both verbally and in writing to ensure that all participants and agencies were respected and appreciated for their time and interest.

Summary

This study used a sample of six North Carolina law enforcement agencies to determine whether fitness policy influenced work-related injuries and absenteeism and what factors contributed to policy decision-making. By first using a quantitative analysis, results yielded whether a significant relationship between policy and injuries and absences among the sample agencies existed. If the null hypothesis was rejected because certain policies were related to fewer work-related injuries and absences, this study will provide support for advocating continued fitness beyond the police academy.

Additional analysis through examination of questionnaire responses determined whether rational choice theory supported policy decision-making, focusing on the utility function. This helped determine what factors contributed (at least partially) to policy and whether decisions being made were personal in nature, or representative of larger objectives. Organizations constantly undergo change, which can impact leadership. The one recognized as the leader is the one who has the potential and capacity to influence the group (Karp & Helgo, 2008). According to Bennis (2007), leadership is a matter of values. The next chapter discusses the results and how both quantitative and qualitative analyses have contributed to this field of study.

Chapter 4: Results

Introduction

The purpose of this mixed methods study was to test the utility function component of rational choice theory to determine whether it explains fitness policy implementation and whether such policy affects reported work-related injuries and absenteeism among a sample of midsized law enforcement agencies in the Piedmont Triad region of North Carolina. The quantitative portion of the study examined the stringency of agency fitness policy over a 5-year period (2011-2015; independent variable). Injury and absenteeism rates were calculated from OSHA 300A summary forms for each agency within this time frame (dependent variables). A control variable was also used based on whether an agency's fitness policy changed over this 5-year period, to measure any change in injury and absenteeism rates. The qualitative portion of the study examined the interview responses of training officers at each agency pertaining to fitness policy implementation, decision-making, and rationale. Responses were examined for common themes and whether they represented rational choice theory decision-making.

The research questions that guided this study were the following:

1. What relationship, if any, exists between a North Carolina law enforcement agency's fitness policy and work-related injuries and absenteeism?
2. When research emphasizes the benefits of maintaining a certain fitness level, particularly for first responders, does the utility function within rational choice theory explain why some North Carolina law enforcement agencies mandate physical fitness requirements for officers and others do not?

3. Are data-driven results of injury or absenteeism an agent or constraint as they pertain to the present fitness policy?

An extensive review of the literature was conducted pertaining to the content of interest, focusing on (but not limited to) current research done in this area over the last 5 years. Previous research focused on officer fitness, physical fitness testing, legal standards, policy implications, work injury and absences, and leadership. Very limited studies were found on law enforcement agencies in North Carolina pertaining to fitness policy, and none were found pertaining to OSHA-reported injuries and absences. Thus, this population became the focus for the current study, particularly when it was known that a gap existed involving state police academies requiring a fitness component while many law enforcement agencies had no such requirements as a condition of employment.

In this chapter, I report on my analysis of the findings from a sample of six law enforcement agencies based on fitness policy standards and change over a 5-year period, as well as yearly reported work-related injuries and absences. Additionally, I discuss how rational choice theory may play a role in fitness policy decision-making at an agency level when the utilitarian concept is applied, thereby explaining the data analysis of each research question that guided the study. In the last chapter, I present conclusions and implications of this research.

The Researcher

Creswell (2013) suggested that researchers provide information about themselves, the IRB process, steps to gaining entry to the sample, and ethics. As the researcher in this study, I had 6 years of experience as a sworn law enforcement officer in North Carolina, as well as 17 years as a criminal justice instructor at a community college. In 2001 and

2002, I became a certified general instructor and specialized physical fitness instructor, respectively, for the BLET program in the state. I was taught and administered the state-mandated fitness testing of cadets based on valid and scientifically tested research pertaining to physical activities that police officers are likely to encounter as part of the job. These credentials allowed me to teach any general curriculum block of instruction within BLET as well as oversee and assess physical fitness activities within the police academy. I routinely tested and evaluated police cadets on the required obstacle courses and fitness assessments, all necessary as a condition of graduation. I wondered why cadets were held to such a high standard of fitness in the police academy, whereas, more times than not, these or any physical requirements were not mandatory conditions of employment at a law enforcement agency. Policy was determined at the agency level, yet who was involved in these decisions, and what was the rationale behind them? This interest and concern for the well-being of officers in terms of wellness and safety followed me into my doctoral studies and thus led to the development of the current study. Therefore, it may appear that I had some bias concerning this topic; however, I made every effort in proposing, conducting, and analyzing this research to present the information in an ethical and objective manner.

Before collecting data, the appropriate and necessary steps were taken based on Walden University's IRB requirements. An application was submitted to the IRB outlining each step of the proposed research and my plans to protect both the confidentiality and identity of participants. Conditional approval was granted with the understanding that each participant (agency) would sign a letter of cooperation prior to any data collection. I then began contacting each of the agencies within my proposed population via telephone, soliciting the agencies' voluntary participation in my study. After an agency agreed to participate, a signed letter of cooperation was obtained and forwarded to the Walden IRB. Once an e-mail confirmation was received from the IRB, data collection at that agency commenced. A consent form as well as a data use agreement form were also collected from each participating agency and filed in that agency's electronic and hard files. After the total sample of six was reached, I had the necessary data to begin analyzing both my quantitative and qualitative data.

Setting and Recruitment Process

The population of midsized law enforcement agencies in the Piedmont Triad region of North Carolina totaled 11. An attempt was made to contact the training officers of all 11 agencies by telephone to ask them to participate in this study after I had briefly explained its intent. Several voicemail messages were left and of those agencies that did not respond, a follow up call was made. After reaching the appropriate contact at an agency and explaining my study, the conversation was followed up with an e-mail detailing the study's purpose, voluntary participation and the necessary information being sought for analysis, along with the need for a signed letter of cooperation if they agreed to participate. If no response was received from an agency within a 2-month period via e-mail, a follow-up e-mail was sent again inviting the agency to participate. After a period of 6 months, six agencies had responded and agreed to participate. For convenience and because of availability, these six law enforcement agencies were used as the nonprobability sample for case study analysis.

Instruments

Several instruments were used to collect data from the sample in the study. For the quantitative aspect of the analysis, a copy of each agency's fitness policy (see the sample agency fitness policy in Appendix D) was obtained (if such a policy existed) for each of the years 2011-2015. Additionally, a copy of each agency's OSHA 300A summary form (see Appendix E) was collected for the same 5-year period. A short questionnaire was used to analyze the responses pertaining to the qualitative aspect of the study, to gain a better understanding of the process and factors involved in policy decision-making at an agency.

Statistical Package for the Social Sciences (SPSS, 2015) was used for quantitative analysis to address Research Question 1. The rationale for the choice of statistical test and assumptions associated with the statistic were based on the research question and therefore are discussed in more detail below. Line-item data mining in Windows Excel was used for qualitative analysis to address Research Questions 2 and 3. Responses and themes were explored to test rational choice theory.

Quantitative

Each agency's physical fitness policy for the years 2011-2015 was coded per policy level and assigned a value; 1 (*no policy/voluntary participation*), 2 (*general policy/voluntary participation*), 3 (*annual in-service/testing*), and 4 (*biannual testing*); (Means, Lowry, & Hoffman, 2011c). For analysis purposes, each agency was then placed in a category per the stringency level of its fitness policy (from least to greatest) and assigned a value number. Whether policy changed over the years between 2011 and

2015 was also indicated; 1 (*no change*) and 2 (*increased standards*) for each agency, each year.

Absence and injury rates were computed for each agency's OSHA 300A form for the years 2011-2015. The absence rate was computed by dividing the total number of days away from work by the total number of employees multiplied by 100 and rounded to the nearest hundredth. Absence rates ranged from 0–156.14. The injury rate was computed by dividing the total number of injuries by the total number of employees multiplied by 100 and rounded to the nearest hundredth. Injury rates ranged from .82–14.56. These rate standardizations allowed for comparison across agencies due to the variance in number of employees. See Appendix F for a summary of the quantitative data.

Qualitative

Each training officer (or designee as determined by the agency head) at the six agencies was provided with a questionnaire inquiring about the number of sworn officers within an agency, and whether the agency was accredited by the Commission on Accreditation for Law Enforcement Agencies (CALEA), with the assumption being that those agencies that were CALEA accredited were likely to have some type of fitness policy in place. The questionnaire also included whether an agency had a fitness policy over the 5-year period of 2011-2015, and if so, whether participation in fitness and wellness activities was voluntary or mandated. The remaining five questions were meant to test rational choice theory and address the policy decision-making process. These questions included the following:

- What is the rationale behind having/not having a fitness policy in place, or for changing policy?
- Who are involved decision makers in fitness policy?
- What factors determine or affect fitness policy?
- Was policy intended to address work-related injuries and illnesses?
- Are you aware that North Carolina provides a full public health mandate that includes injury prevention, and if no, would you want more information, or if yes, was this considered in fitness policy implementation? (See Appendix G.)

Qualitative research can be deemed valid using triangulation and member checking (Creswell, 2013), and so at the same time policy and OSHA data were being collected, these questions were reviewed and verified by speaking with the training officer or designee. For data to be considered qualitatively reliable, consistency is important (Creswell, 2013); therefore, the same questions were asked of each agency.

Demographics

For analysis purposes, participants were actual agencies, for which employee demographics were not known, except by raw numbers. This was done to protect the confidentiality of agency employees. Though the questionnaire was completed by one individual employee at the agency, these individual demographics were not recorded, but the employee's agency responsibilities were noted.

Agency 1

Agency 1 was a county law enforcement agency located in the Piedmont Triad region of North Carolina serving an estimated population of 142,799 (U.S. Census Bureau, n.d.). The number of employees at the agency ranged from 228–262 over the years 2011–2015. This agency did not have a fitness policy for sworn officers (and so it was voluntary on the employee's part to participate in any physical fitness activities) during the 5-year period.

Agency 2

Agency 2 was a county law enforcement agency located in the Piedmont Triad region of North Carolina serving an estimated population of 158,276 (U.S. Census Bureau, n.d.). The agency ranged in number of employees from 892–1206 over the years 2011–2015. This agency did not have a fitness policy for sworn officers (and so it was voluntary on the employee's part to participate in any physical fitness activities) during the 5-year period.

Agency 3

Agency 3 was a municipal law enforcement agency located in the Piedmont Triad region of North Carolina serving an estimated population of 110,268 (U.S. Census Bureau, n.d.). The agency ranged in number of employees from 248–268 over the years 2011–2015. This agency did not have a fitness policy for sworn officers during the 5-year period; however, incentives at either the city or county level were available to employees, though participation to receive these incentives was voluntary.

Agency 4

Agency 4 was a municipal law enforcement agency located in the Piedmont Triad region of North Carolina serving an estimated population of 285,342 (U.S. Census Bureau, n.d.). The agency ranged in number of employees from 881–929 over the years 2011–2015. This agency had a general policy that addressed the necessity of employees maintaining their health to adequately perform job functions. This policy remained the same over the 5-year period, and several incentives at either the city or county level were available to employees, but participation in these incentive programs was voluntary.

Agency 5

Agency 5 was a county law enforcement agency located in the Piedmont Triad region of North Carolina serving an estimated population of 369,019 (U.S. Census Bureau, n.d.). The agency ranged in number of employees from 230–243 over the years 2011–2015. Over the 5-year period, the agency did require sworn officers to participate in 2 hours of health and wellness in-service training each year, and annual POPAT testing was mandated.

Agency 6

Agency 6 was a municipal law enforcement agency located in the Piedmont Triad region of North Carolina serving an estimated population of 52,472 (U.S. Census Bureau, n.d.). The agency ranged in number of employees from 164–182 over the years 2011–2015. Over the 5-year period, the agency gradually incorporated a mandated biannual POPAT testing of all sworn officers.

All sites had onsite fitness facilities that employees could use at no charge. Several agencies also offered either free or discounted memberships at local fitness facilities. The first three agencies with no fitness policy were not CALEA accredited; the last three agencies with written fitness policies were CALEA accredited, as assumed.

Data Collection

The location of the population of interest in this study—the Piedmont Triad region of North Carolina—was purposely selected for convenience purposes as well as the purpose of collecting data from a similar geographical region. Again for consistency purposes, midsize agencies were also the focus of this study; the total number of agencies fitting these criteria from which to draw a sample was 11. The purpose was initially to capture a total of six agencies for case study analysis, representing three categories of varying fitness policies: two not having any fitness policy in place, or a voluntary policy; two having increased in policy stringency over a 5-year period; and two having strict, mandated fitness standards required for officers. After I had contacted each agency and explained the study, six of the 11 responded with their willingness to participate; however, the categories of policy that they represented were not what I had initially proposed. After mining through the data, I observed that four levels of policy were distinguishable and would make for a more detailed analysis. The quantitative data were made up of policy level, any change of policy within the 5-year period, and OSHA 300A injury and absenteeism summary reports. This information was analyzed to address Research Question 1. The qualitative data were made up of questionnaire responses and were analyzed for common themes to assess, first, whether the utilitarian function within rational choice theory existed (Research Question 2), and second, whether data served as an agent or constraint to current fitness policy (Research Question 3).

Data Analysis

Three research questions guided this study:

RQ 1. What relationship, if any, exists between a North Carolina law enforcement agency's fitness policy and work-related injuries and absenteeism?

RQ 2. When research emphasizes the benefits of maintaining a certain fitness level, particularly for first responders, does the utility function within rational choice theory explain why some North Carolina law enforcement agencies mandate physical fitness requirements for officers and others do not?

RQ 3. Are data-driven results of injury or absenteeism an agent or constraint as they pertain to the present fitness policy?

Using these questions, the research data were analyzed both quantitatively and qualitatively. Descriptive statistics, crosstabs, one way ANOVA, and an *F*-test were calculated. Then line analysis data mining with Excel was utilized to test rational choice themes. Per agency policy, agencies were listed in order according to policy stringency, with the first agency listed having no policy or incentives at the top, on down to the last agency listed that had a mandated, biannual testing policy. The policy level (independent variable) for each agency (each of the 5-year period) was coded to form an ordinal variable from 1 – 4; *1* being no fitness policy to *4* requiring biannual fitness testing. Policy change was used as a control variable, to determine if a change in policy over these years affected injury or absenteeism rates. This was coded ordinally where *1* meant no change from one year to the next, and *2* meant an increase in fitness standards required from one year to the next. Both absent rate and injury rate (ratio, dependent variables) were calculated into standardized rates for comparison purposes. Descriptive statistics are provided for each variable as they describe what the data shows (Trochim, 2006). Table 1 shows the six-agency sample arranged per strictness of policy level. Policy change indicates from one year to the next whether policy did not change, or increased in required fitness standards.

Table 1

Agency Demographics of Sample

Variable	Labels	Level of measurement	Mean	*SD*	Range
Agency	1 = Agency 1 2 = Agency 2 3 = Agency 3 4 = Agency 4 5 = Agency 5 6 = Agency 6	ordinal			
Policy level (IV)	1 = no policy/ voluntary participation 2 = general policy/ voluntary participation 3 = annual in-service/ testing 4 = biannual testing	ordinal			
Policy change 2011-2015 (CV)	1 = no change 2 = increased standards	ordinal			
Absence rate (DV)		ratio	31.21	32.91	0-156.14
Injury rate (DV)		ratio	6.90	3.17	.82-14.56

Research Question 1

The first research question attempted to determine whether having a strict fitness policy affected work-related injuries or absences. The null hypothesis suggests that no significant relationship exists between the stringency of fitness policy and job-related injuries and absenteeism rates; therefore, the alternative hypothesis suggests that the more stringent a fitness policy is, the lower the job-related injuries and absenteeism rate.

A bivariate correlation could not be conducted because the data violated several assumptions of this analysis. First, variables must be continuous; in the sample both the independent and control variables are ordinal level measurements. A second assumption is that a linear relationship exists between variables, and with this study's data they do not (which also eliminates the use of partial correlation and linear regression). Another assumption of correlational analyses is that no significant outliers exist which was also not true with the data. A fourth assumption assumes homoscedasticity, and upon conducting a scatterplot of the data, heteroscedasticity was detected, so therefore not suggested that correlation be used in analysis (Laerd Statistics, 2013).

When a group comparison of at least one independent variable is being used, analysis of variance (ANOVA) can be used as a statistical test (Creswell, 2013). For this test, the independent variable should be categorical, and the dependent variable should be continuous, which in this study is the case; therefore, ANOVA was selected as the statistical test to answer Research Question 1. Green and Salkind (2011) state that a one-way ANOVA can be used to analyze data from a quasi-experimental study and the *F*-test evaluates whether the group means on the dependent variable differ significantly from each other. Then, an overall analysis of variance test can assess whether dependent variable means are significantly different among groups.

In social research, Trochim (2006) advises a statistical power greater than 0.8 in value as a rule of thumb. This means having at least 80 chances out of 100 of finding a relationship when there is one. Statistical power is the ability to detect effects given the variance and sample size (Vogt & Johnson, 2011). Several factors interact to affect power. One is to use a larger sample size, another is to increase the risk of making a

Type I error, or increasing the chance that a relationship is found when it is not there. This can be done by raising the alpha level (Trochim, 2006). In this study the agency sample size of six is small; however, the total number of employees that the sample represents is over 2700. So, it could be argued that using an alpha level of .05 demonstrates a significant statistical power of .95.

ANOVA

First, a one-way ANOVA was conducted to evaluate the relationship between policy level of an agency and absenteeism rate. The independent variable, the policy level factor, included four levels of fitness policy: no policy/voluntary participation, general policy/voluntary participation, annual in-service/testing, and biannual testing. The dependent variable was the rate of work days missed each year over the 5-year period of 2011-2015. The ANOVA was significant $F(3,27) = 5.02$, $p < .01$. The strength of relationship between policy and absent rate, as assessed by η^2 was strong, with policy level accounting for 36% of the variance of the dependent variable.

Next, a one-way ANOVA was conducted to evaluate the relationship between policy level of an agency and injury rate, which was the rate of injuries each year over the same 5-year period. The ANOVA was significant $F(3,27) = 6.96$, $p < .001$. The strength of relationship between policy and injury rate, as assessed by η^2 was strong, with policy level accounting for 44% of the variance of the dependent variable.

Because the overall ANOVA was significant and there were more than two levels in the independent variable, follow-up tests are usually conducted to evaluate pairwise differences (Green & Salkind, 2011). Therefore, it was decided to conduct follow-up tests of Tukey, REGWQ and Dunnett's *C* as suggested by Green and Salkind (2011) to evaluate pairwise differences among means. Dunnett's *C* test does not assume equal variances among the four groups and so these results were used to assess both absenteeism rate and injury rate between policy level. There was no significant difference in the means between any policy level and absent rate. However, there was a significant difference in the means between the following:

- Level 1 policy (no policy/voluntary participation) and Level 3 policy (annual in-service/testing)
- Level 1 policy (no policy/voluntary participation) and Level 4 policy (biannual testing)
- Level 2 policy (general policy/voluntary participation) and Level 3 policy (annual in-service/testing)
- Level 3 policy (annual in-service/testing) and Level 4 policy (biannual testing).

The agencies that required annual in-service and testing showed a greater decrease in injury rates compared to agencies with other policy types. The 95% confidence intervals for the pairwise differences, along with the means and standard deviations for the four policy groups, are reported in Table 2.

Table 2

95% Confidence Intervals of Pairwise Differences in Mean Changes of Injury Rates

Policy level	*M*	*SD*	Level 1	Level 2	Level 3
1 – No policy/ voluntary participation	7.25	3.24			
2 – General policy/voluntary participation	7.67	1.97	[-3.84, 3.01]		
3 – Annual in-service/testing	3.13	1.51	[.42, 7.82*]	[.97, 8.11*]	
4 – Biannual testing	10.79	1.05	[-7.02, -.05*]	[-6.49, .25]	[-11.39, -3.93*]

A second set of ANOVA were conducted examining the control variable (change in policy). A one-way ANOVA was conducted to evaluate the relationship between policy change and absent rate. The control variable, whether policy changed from one year to the next, included two levels: no change and increased standards. The dependent variable was the rate of work days missed each year over the 5-year period of 2011-2015. The ANOVA was significant $F(1,29) = 14.92$, $p < .001$. The strength of relationship between policy change and absent rate, as assessed by η^2 was strong, with policy change accounting for 34% of the variance of the dependent variable.

A one-way ANOVA was conducted to evaluate the relationship between policy change and injury rate, which was the rate of injuries each year over the same 5-year period. The ANOVA was significant $F(1,29) = 7.02$, $p < .01$. The strength of relationship between policy change and injury rate, as assessed by η^2 was strong, with policy change accounting for 20% of the variance of the dependent variable.

The interpretation of the current data has been evaluated on ANOVA analyses. In conclusion, to answer whether a relationship exists between a North Carolina law enforcement agency's fitness policy and work-related injuries and absenteeism, the analyses assumes there is a relationship, therefore rejecting the null hypothesis and accepting the alternative hypothesis.

Research Question 2

Research Question 2 attempted to test whether the utilitarian function of rational choice theory explained why specific fitness policies were in place. In other words, was policy decision the preferred alternative that would benefit agency employees most? Several questions in the agency questionnaire were designed to address this.

The first question inquired about the rationale behind having/not having a fitness policy in place, or the reason for changing policy. Agencies had varying responses. Of those agencies that had a fitness policy, improving employee wellness and productivity, along with increasing officer safety were common responses. Agency 6 identified several motivational factors to include:

- reducing long-term medical costs for employees
- improving employee wellness and productivity
- increasing officer safety
- increasing the life span of employees

Agency 4 identified a standard operating procedure in which their objective was to "develop and maintain a level of fitness in police personnel and to ensure their ability to accomplish assigned duties and provide satisfactory job performance without undue risk of injury or fatigue." The change in policy for Agency 5 was due to a Sheriff initiative to improve the overall health of employees. Of the agencies that did not have a fitness policy, one indicated that it was "due to case law, cost, manpower, buy in from administration, and law suits." Having no policy may be impacted of Title VII of the Civil Rights Act which requires all employers with more than 15 employees to refrain from policies that discriminate against specified categories of individuals (U.S. EEOC, n.d.). Title VII can be ambiguous and many standards have not been interpreted by the Supreme Court. Even federal circuit courts differ on these decisions. Since the courts cannot clearly define these standards, it can burden administrations with continued monitoring of court decisions and legislation. Under Title VII, physical fitness standards face scrutiny when they might discriminate against a protected group (for example females, individuals over 55 years of age). Employees must demonstrate that the practice is job-related and necessary. Therefore, in justifying physical fitness requirements, can it be justified as a necessity of law enforcement work? To demonstrate this, administrators must show a significant relationship between the physical fitness requirement and job responsibilities (Brooks, 2001). Agency 2 indicated that "the agency was in the process of reviewing and updating several policies and have not addressed this issue yet", and Agency 3 reported that "physical fitness policy had never been addressed."

The next question asked who was involved in the policy decision-making process. Not surprisingly, all responded that the agency head (Chief of Police or Sheriff) were the final decision makers. However, of those involved with the input process, responses ranged from few individuals within the agency to larger committees that included members outside of the agency. Four agencies indicated that decision makers on such policy came from within the agency such as executive staff, administration (directors, commanders) and other employees. Two agencies also included decision makers outside of the agency itself such as occupational health staff, human resources director, city manager, and city attorney. There was no consistency in agency type as far as who was included in decision-making. Or in other words, municipal agencies were just as likely as county agencies to involve personnel outside of the agency in policy decision-making.

The last question asked to address Research Question 2 sought to determine what factors affected fitness policy decision-making. Common responses included manpower, cost, and resources. Some were also concerned with the legality of such a policy and how standards would be enforced or maintained. But, these common theme responses existed within agencies that both had stricter policies and those that had none. Interestingly, of the two agencies that had the more stringent policies, though cost, training, and manpower were also mentioned, the agencies prioritized these resources to comply with policy. Taking a more holistic approach was also a factor for these agencies. As it pertains to their fitness policy, one stated that they had "to find a balance between stewardship to the taxpayer and providing our employees some opportunities to maintain and improve their health." All agencies had on-site fitness facilities and equipment and/or community resources such as recreation centers, gyms, or fitness centers. See Table 3 for a summary of agency responses to these questions.

Table 3

Agency Responses to Policy Rationale

Question	Agency/Responses
What is the rationale behind having/not having a fitness policy in place, or for changing policy?	1 – the agency is in the process of reviewing and updating policies in order to apply best practices.
	2 – case law, cost, manpower, buy in from administration, law suits
	3 – physical fitness policy has never really been addressed
	4 – the objective of the department is to develop and maintain a level of fitness in police personnel and to ensure their ability to accomplish assigned duties and provide satisfactory job performance without undue risk of injury or fatigue
	5 – it was one of the Sheriff's initiations in 2002
	6 – to reduce long-term medical costs for employees, to improve employee wellness and productivity, to increase officer safety, and to increase the life span of officers/ employees
Who are involved decision makers in fitness policy?	1 – Sheriff and Administrative Major who verifies policy changes to ensure it complies with law
	2 – Sheriff, Chief Deputy, Director Personnel/Training
	3 – Chief of Police and Executive Staff
	4 – Chief of Police Bureau Commander, Training Division Commander and/or other departmental employees
	5 – Sheriff and committee
	6 – Chief of Police, Occupational Health staff, HR Director, City Manager, City Attorney
What factors determine or affect fitness policy?	1 – resources, manpower, cost
	2 – resources, manpower, cost
	3 – time, money, effort, legality, injury, penalty for failure to maintain standards, resources, equipment
	4 – finding a balance between stewardship to the taxpayer and providing employees some opportunities to maintain and improve their health
	5 – we have the manpower, a more holistic approach was needed
	6 – cost, provide training, build a gym/fitness center, staffing was not a major concern

Rational choice theory assumes that individuals interact in a social process as part of decision-making, and in an organization, collective individual actions affect policymaking and input comes from both individual behavior and social interaction (Jones et al., 2006). It examines how individual choices interact with one another to produce outcomes, and how decisions are made by both considering the present and planning for the future (Green, 2002).

The above questions on the agency questionnaire were designed to test this theory to determine why specific policies were in place among a small sample of law enforcement agencies in North Carolina. The meaning of *rational* is applied to mean the most preferable and feasible alternatives available. One component of this theory holds that within a setting, decision makers will choose an alternative that benefits the most. This assumes that first decision makers have ranked preferences for outcomes and possess the necessary information to optimize the preferred outcomes (Jones et al., 2006). A closed-ended question on the questionnaire was asked of the agencies whether they were aware that North Carolina provides a full public health mandate that includes injury prevention. Only one responded yes. This agency had a more general wellness policy, but no specific fitness standards for officers. Two agencies responded no and three agencies did not answer definitively. Perhaps having knowledge or utilizing state resources available could assist agencies in this policy making process, but the question may have been vague or confusing, or maybe more detailed information should have been provided to the agency's before asking this question.

Decisions are made to serve definite purposes and populations. Therefore, rationality is important in the decision-making process otherwise public utility can be adversely affected (Political Science Notes, 2013). With the responses given, it was not entirely clear on how agencies determined fitness policy. Perhaps questions should have delved into more detail as to *how* each factor was considered, rather than just listing *what* factors were considered in policy. However, in all cases more than one individual was involved in the discussion and input of policy (or policy change), therefore confirming that an interaction process took place with a decision being made as to the best choice for the agency with the resources and information present. It is more difficult to determine whether the utilitarian component outshined other options because of the limited information provided within question responses. So, to apply rational choice theory in general makes sense per the responses from agencies, but not enough is known as to why the utilitarian function of the theory explained fitness policy implementation.

Research Question 3

Research Question 3 attempted to find out whether data-driven results of injury or absenteeism are an agent or constraint as it pertains to fitness policy. One question on the agency questionnaire was asked as to whether policy intended to address work-related injuries and illnesses. Two agencies that had no fitness policy and one agency that did not have a policy but did have employee fitness incentives in place responded negatively to this question. The other three agencies that responded positively had some type of fitness policy in place, with policy ranging from more general to very specific standards.

Applying rational choice theory to these responses make sense as one element of the theory is constraints, or things/circumstances that exist, making a choice necessary. Constraints also take into consideration the environment in which a choice was made (Green, 2002). Within each agency several factors as well as participants are involved in the decision-making process. Although ultimately it is the agency head who makes the final decision, there is no doubt that influences from others and the environment play a part. It is this interaction among human decision makers and individual choice that put policies into action (Jones et al, 2006).

Serving as constraints to agencies with no fitness policy seemed to be the common factors of cost, legal implications and manpower. These factors seemed to play a part in the policy decision-making process. Something that is not known is how much influence other individual(s) involved in the process had. It was not explored in the initial questioning but could have been valuable in addressing this particular research question.

For those agencies that had some type of fitness policy, common agents seemed to specify the necessity of officer health and safety, ensuring that officers could accomplish their duties. Wellness incentives in written policy emphasized the agency's commitment to the well-being of officers so they could perform essential job tasks. Taking a holistic approach and finding balance between providing public services and providing for employees were common rationale. These agencies sought funds (either through city/county funds or grants) and provided training and facilities to ensure officer needs were met.

With the data that was collected and qualitatively analyzed, it is concluded that the null hypothesis be rejected, assuming that injuries and/or absenteeism rates are an agent of the current fitness policy. This was determined by examining the written policy of the agencies that had a current fitness policy in place. This analysis used several steps according to rational choice theory; identifying relevant agents and constraints, applying consistency, exploring predictions, and drawing conclusions (Green, 2002).

Threats to Internal Validity—Instrumentation

After conducting the analyses for this research, several observations must be mentioned as it pertains to the validity of the instruments used. The first instrument used, also serving as the independent variable was written agency fitness policy. The information was interpreted at its face value and believed to be represented and interpreted correctly in the study. However, for comparison purposes, I defined four categories in ranked order, from no policy present to the most stringent, mandatory policy. Perhaps another researcher would define or categorize policies differently for analysis purposes.

To control for any differences in policy change over the 5-year period, a binominal variable was created to simply represent that a fitness policy did change from year to year, or did not change from year to year. This again was a discretionary decision, and perhaps others would approach control in a different manner.

The use of OSHA mandated reported injuries and absences on the summary 300A form became questionable as to whether these records could be considered valid. For example, one agency reported employees having 164 days away from work (absenteeism), yet the next year, two days were reported and the year after that zero days were reported. So, whether the OSHA form was the most appropriate measure of injuries and absenteeism is questionable. Perhaps a better, more accurate and valid instrument might better have addressed the research questions, but this information was not initially known and so not observed until after data analyses. In addition, OSHA forms did not specify or differentiate officer injuries and absences from other agency employees such as nonsworn or civilian. One county agency even included all county employees in the summary form and did not distinguish between officer and other personnel.

The last instrument used was the agency questionnaire designed to test rational choice theory in the policy decision-making process at agencies. I designed the questionnaire, with input from a criminal justice advisory committee, made up of local criminal justice practitioners. Upon qualitative analysis of the data, it became evident that the questionnaires did not delve deep enough into the details of policy input, such as whether agency heads were pressured into having or not having a fitness policy, or if politics in any way played a role in this process. Therefore, one might argue that the questionnaire might pose internal validity threats.

When discussing validity in general, conclusion validity might be worth mentioning. This is essentially whether a relationship between variables is a reasonable one or not, given the data being studied. In this study, it is possible to conclude that, while an overall significant relationship seems to exist between policy and injury and absenteeism rates, the policy itself may not have caused the outcome. Perhaps some other factor(s), and not policy alone was responsible for the results of the study (Trochim, 2006).

Trustworthiness

On 09/01/16 Walden University IRB approved the proposed research study with the condition that each agency provide a signed letter or cooperation prior to data collection (Walden University IRB approval #09-01-16-0316158). Over a period of 5 months (October 2016 – March 2017), the six agencies that agreed to participate were approved by IRB as data collection sites. I covered all documentation and travel expenses related to the study as not to incur any cost to the agencies. After collecting all documents and speaking to the training officer at each agency, both a verbal and appreciation was voiced and a thank you card was sent to those involved in providing the data from each agency. The information was then reviewed and validated to verify and gain a better understanding of it. This helped to protect the integrity of the research.

A case study was selected for this research to gather some data about fitness policy and injury and absenteeism rates, as well as how policy is decided among a sample of law enforcement agencies in the Piedmont Triad area of North Carolina. Case study is designed to focus on the activities of organizations and to describe rather than generalize. Therefore, transferability of the results outside of the study might be difficult to justify. The collection of data for this study is assumed to be trustworthy as each instrument used (policy, OSHA forms and questionnaires) were reviewed with the training officer of the agency to ensure both the validity of data and to verify any oral and written communication recorded on the questionnaire through confirmability, or a reflective use of participant perspectives. This was used to build justification for themes (Creswell, 2013).

Through the presentation of this study's purpose, data analyses, ethical considerations, and limitations discussion, it is hoped this research is viewed as both dependable and credible. Dependable in that an assessment of the integrated process of data collection, data analysis and theory generation were proposed and conducted; and credible in that every effort and intention was made to accurately interpret the data collected. All information was carefully documented and reported to provide the necessary details so similar future research might replicate the study if desired.

Summary

This chapter presented information on the recruitment process and instruments used to conduct the study pertaining to law enforcement fitness policies in relation to job injuries and absenteeism. Demographics on the six North Carolina law enforcement agencies in the sample were provided, as were the steps taken in the data collection process. Both qualitative and quantitative analyses were conducted to address the three research questions.

Agency fitness policies and OSHA 300A summary forms of six North Carolina midsized law enforcement agencies over a 5-year period were utilized in this multisite case study to determine whether a relationship existed between policy stringency and injury and absenteeism rates. Based on the quantitative analyses of ANOVA, Research Question 1 was addressed. A greater statistical significance was found between policy levels and injury rates than between policy level and absenteeism rates. When controlling for any change in policy from year to year, the opposite was found to be true.

Research Question 2 was analyzed qualitatively through responses on a questionnaire addressing policy decision-making factors and personnel. An agency's training officer or designee provided the responses. Overall data from participant responses resulted in the emergence of common themes that were then applied to the utilitarian function within rational choice theory. Research Question 3 also utilized specific questionnaire responses and determined that injuries and/or absenteeism rates were an agent of current fitness policy.

Chapter 5 interprets the findings and discusses the implications for social change. It also makes recommendations for further research and provides a conclusion to this study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this mixed methods multisite case study was to determine whether fitness policy affected reported work-related injuries and absenteeism among a sample of six law enforcement agencies in the Piedmont Triad region of North Carolina, and to test the utility function component of rational choice theory to ascertain whether it explains fitness policy implementation. OSHA-reported injury and absenteeism data were used from years 2011-2015 to examine any effects that may have resulted in policy change. Training officers were then asked about the policy decision-making process at each agency.

Interpretation of the Findings

A large amount of research has been conducted on the topics of law enforcement fitness for duty, as well as work-related injuries and absenteeism, both internationally and in the United States. However, a very limited amount of research has been conducted on agencies in North Carolina, and more particularly on midsize agencies across the state. No similar academic research was found that had been conducted to examine OSHA-reported injuries and absenteeism in relation to fitness policy levels. The findings correlated with much of the existing literature addressing the role that fitness plays in injury prevention.

Three research questions guided this study and were designed to measure the effects of both fitness policy decision-making and work-related injury and absenteeism rates:

1. What relationship, if any, exists between a North Carolina law enforcement agency's fitness policy and work-related injuries and absenteeism?
2. When research emphasizes the benefits of maintaining a certain fitness level, particularly for first responders, does the utility function within rational choice theory explain why some North Carolina law enforcement agencies mandate physical fitness requirements for officers and others do not?
3. Are data-driven results on injury or absenteeism an agent or constraint as they pertain to the present fitness policy?

Research Question 1

To determine whether a relationship existed between a certain fitness policy level and injury and absenteeism rates, participating agencies were asked to provide a copy of their fitness policy for years 2011-2015 as well as a copy of their OSHA 300A summary form for the same 5-year period. For each of the 5 years, a fitness policy was placed in to one of four categories, creating the independent variable *policy level.* The levels included (in increasing order) those agencies with (1) no fitness policy, (2) a general/voluntary fitness policy, (3) annual in-service and mandatory fitness testing, and (4) biannual mandatory testing. If fitness policy changed from one year to the next, it was noted and used as a dummy control variable (*policy change*) to determine whether change in policy made a significant difference in injury or absenteeism rates. It was only noted whether there was no change in policy, or whether an increase in policy level took place. For injury and days missed from work, a standardized rate (per 100 employees) was calculated to allow for comparisons across different agency sizes.

With SPSS, ANOVA was then applied using the F-test to evaluate whether group means within the dependent variable differed from each other among injury rates and absenteeism rates. It was found that ANOVA was significant between both policy level and injury rates, as well as policy level and absenteeism rates. The overall ANOVA was significant, and so follow-up tests were also conducted to evaluate pairwise differences among means. No significant difference was found between policy level and absenteeism rate, but a significant difference was found between policy level and injuries, with the agencies that required annual in-service and testing showing a greater decrease in injury rates when compared to agencies with other policies.

Theoretical Concepts

Rational choice theory (RCT) indicates that individual behavior and social interaction affect the policymaking process. This process begins with making choices; under rational choice theory, it is assumed that choices are made based on larger representative populations (Green, 2002). In RCT, rational is meant to reflect the most feasible and preferable alternative through utility maximization or the alternative that has the greatest benefit. The environment in which the choice is made contributes to the constraints or circumstances that exist, as decisions are not made in a vacuum. Then analysis examines how choices interact to produce outcomes (Green, 2002). Jones et al. (2006) contended that even though organizations make policy, the interaction of human decision makers along with individual choice is what puts policy into action because individuals want to maximize their preferences and self-interest. Decision makers hold ordered and ranked preferences for outcomes and possess the necessary information to connect choices to preferred outcomes. Therefore, the rationality component is important in decision-making; otherwise overall utility will be affected (Political Science Notes, 2013).

The next two research questions were designed to test RCT through qualitative analysis. A multisite case study was used because input from multiple agencies would provide more abundant insight about the decision-making process than input from one or few agencies. It also provided an opportunity to mine for common themes among responses. A questionnaire was designed to ask agency training officers about policy decision-making to determine if policy choice was indeed guided by RCT concepts. The questionnaire consisted of six main questions and four sub questions inquiring further into certain responses. Three of the questions were designed to address Research Question 2.

Research Question 2

To test whether the utility function within RCT explains policy decision-making, three questions were asked of agency training officers. The questions included inquiry about the rationale behind current policy, involved decision makers, and factors affecting policy. After a written record of the responses was received from each agency, member checking was conducted to verify response content. The narrative data were then analyzed, coded, and interpreted. Improving employee productivity and wellness, and increasing officer safety were common themes among agencies that had a fitness policy in place. Case law implications, cost, and lack of manpower and administrative support were common responses among those agencies without a fitness policy in place. Responses to the question inquiring as to who was involved in the decision-making process included both internal as well as external agency employees, with all agreeing that the agency head had the final say. Common factors affecting fitness policy were cost and resources, similar factors found in the rationale behind current policy.

It could be argued that the responses represent RCT, in that both individual behavior and social interaction played a role in the policymaking process. Of those agencies including input from multiple individuals (both inside and outside the agency), choices were made based on the most feasible option that would have the most benefit (Green, 2002). Those providing input might include agency employees, the public, or both.

Research Question 3

To determine whether results of injury and absenteeism reports served as an agent or constraint to fitness policy, a closed-ended question was asked concerning whether the agency's fitness policy was intended to address this issue. Then responses were compared to the factors given that contributed to current policy. At the agencies with fitness policies in place, policy was intended to address, at least partially, work-related injuries and absences. The agencies without fitness policies saw mainly the cost and resources to oversee such a policy as a constraint. Therefore, from the consistent information presented by agencies either having or not having policies, it was determined that an agent/constraint component of the RCT contributed to the overall decision-making process.

Existing Policies and Potential Approaches

North Carolina law enforcement agencies vary in fitness standards and policies. Policies range from voluntary self-initiation to required fitness participation and testing. Voluntary policies make it optional for officers to participate in fitness activities, either on their own time or through various agency-sponsored incentives. One example is an agency that provides officers an extended break time to exercise while on duty. Rather than a 30-minute lunch break, officers are allowed 60 minutes, if manpower and call volume allows. The department provides a fully equipped exercise room that is available 24 hours a day. This is a convenient incentive not only for police officers, but also for all agency employees.

Other agencies in the state require fitness training days, which might occur once, twice, or four times a year (for example) as part of an officer's in-service training. Requirements vary but may only necessitate that officers are present and participate in some way. Agencies that include mandated fitness policy ensure that facilities, consultation services, and appropriate resources are available to officers by offering various fitness and educational activities, or individual consultations if desired.

Limitations

Upon completion of this study, I found several limitations that must be disclosed. These limitations included the instruments used, the geographical location selected, ecological fallacies, and sample size. Each is discussed in more detail below.

The instruments used consisted of both primary and secondary resources. The primary resource consisted of the questionnaire that was developed to specifically address policy decision-making at agencies. I validated the questionnaire by using feedback from a local advisory committee made up of local police practitioners, and reliability was assumed, as the same questionnaire was used for each agency. Yet upon qualitative analysis, it was discovered that more in-depth inquiries could have been used to delve deeper into how individual decisions were made or perhaps persuaded.

Secondary data included written policy (if any) for an agency and OSHA 300A summary reports. It was learned that OSHA reporting varied. Not all agency forms distinguished injuries and absences by officers from those by nonsworn employees in the agency. Accountability and methods of data collection were also questioned due to large variance in some of the data recorded from one year to the next.

Because data were collected from midsized law enforcement agencies in the Piedmont Trial Region of North Carolina, the results were limited. Only six of 11 agencies fitting the population criteria were selected for a more in-depth case study analysis. Therefore, statistical results cannot be generalized because of the small sample size. More specifically, the results are unique to this region and might differ from those of smaller, larger, rural, or more urban areas within the state or elsewhere.

Important to researchers is also being aware of potential ecological and individual fallacies (Frankfort-Nachmias & Nachmias, 2008). It should be noted that an agency not having or enforcing a fitness policy or standard does not imply that officers cannot or do not take individual responsibility for their own fitness. It also cannot be inferred that high absentee or injury rates reflect poor officer or agency performance, as absence or injury may not be caused by poor fitness levels. Absence is not just about a day away from work; it is tied to circumstances of an employee's medical and personal life (Harte et al., 2011). Therefore, many factors must be considered when implementing a wellness or fitness program, given that multiple facets of life circumstances contribute to missing work for various reasons.

Findings in this study address the research questions in an effort to contribute to what little is known about the relationship between fitness policies and work-related injuries and absenteeism, specifically within law enforcement agencies in North Carolina. Information was gained on how and why fitness policies are derived in some agencies, and suggestions derived from the study's findings are made to promote positive social change.

Implications for Positive Social Change

This study has potential to contribute to positive social change at individual, community, and societal levels. The study's most important implications relate to police officers' role as public service responders. Though officers infrequently encounter situations that require them to meet physical demands, the inability to perform can have consequences for the individual officer, the agency, and the community (Means et al., 2011a). Study results suggest that some fitness standard is significantly related to lower injuries and fewer absences. The data should be encouraging to individuals and agencies alike that are seeking to promote the overall wellness and health of employees. More today than ever, organizations have to *do more with less* to maximize work output and increase productivity. This suggests that increasing productivity reduces organizational expense (Harte et al., 2011). According to the U.S. Department of Labor (n.d.), health improvement programs cost 0.5% of payroll, compared to 6.5% in combined costs related to replacement of workers, sick leave, short and long-term disability, and workers' compensation. Employers are challenged by supporting employees' needs (e.g., time off and health insurance) with cost-effective benefits that create a productive workforce. Particularly when an administration aligns organizational goals and employee needs, employees' productivity can be greatly influenced by their general health and well-being

(Harte et al., 2011). In this sense, the individual, agency, and taxpayers/recipients of public services all benefit.

Recommendations for Action

Investing in wellness programs that focus on preventing illness and maintaining health influences medical costs and absenteeism. Such programs can go a long way in helping to creative a high-performance environment, lower health care costs, and reduce absences (Harte et al., 2011). Funding for fitness programs could be included within agency budgets or agencies could seek state funding per North Carolina General Statute 130A-224 as it pertains to public health. This statute provides a full mandate for public health issues, including injury prevention (Stier et al., 2012). It is a collaboration worth exploring further. A partnership with the North Carolina Public Health Department would be advantageous to incorporating injury prevention programs. To justify continued funding, it would be necessary to routinely evaluate training methods (Ferguson et al., 2011). Evaluation results can be useful by also pointing out deficiencies or areas where improvements can be made. It is the obligation of criminal justice practitioners and researchers alike to render professional judgment to improve the well-being of those in the field (ACJS, n.d.). Poor health and fitness carry higher risks of injuries and absences, which in turn cost agencies and taxpayers more money. Therefore, to justify standards and funding, evaluation is a necessary component. Data collection that provides evidence-based results would help to justify the continuance (or elimination of) such programs in the future.

The main objectives of fitness policy include reducing the risks of both work-related injury and absenteeism (and therefore increasing the health benefits of officers) and reducing agency and officer costs by way of fewer medical expenses and less absenteeism. The stipulation is that data should be collected and funding should be contingent upon evidence-based results. This could also be a beneficial form of accountability.

The purpose of providing alternatives is to offer optional approaches in case the initial, intended proposal does not completely work (Bardach, 2012) or needs to be adjusted in some way. The current interest lies in reducing workplace injuries and absences. Employers are aware that health and work are interrelated and that employers have a role in facilitating job retention and wellness (Irvine, 2011). Therefore, they are key players in policy change.

Recommendations for Further Study

The results of this study are limited to what was found among six law enforcement agencies within one region of North Carolina. The intent was to concentrate mainly on the patrol function within policing; however, with OSHA 300A summary statistics, it is difficult to do that. Therefore, it is suggested that actual OSHA 300 forms be analyzed to select out how injuries and absenteeism among patrol officers might differ compared to other sworn or nonsworn positions within an agency. This analysis would require more time and resources because those reported on the OSHA 300 form as injured or absent are listed by name; therefore, confidentiality would first have to be considered, and with the assistance of human resources a role distinction would have to be made among names as to pull out patrol officers. Alternatively, perhaps those patrol officers could be contacted and interviewed to determine whether the injury or absenteeism was indeed work-related.

It might also be interesting to compare differences in fitness levels and requirements for specialty teams (for example, SWAT, K-9) versus patrol as specialty teams generally require more strict fitness levels. Though the responsibilities differ, there may be a significant difference in injury and absenteeism rate when compared to patrol officers. Also, because more stringent requirements are often a condition of belonging to such specialty teams, how or why this policy was rationalized and decided might be explored to further test RCT or to test additional decision-making theories.

Conclusion

This study was conducted to address the gap in the literature regarding why police academy cadets have required fitness standards but not all law enforcement agencies require a maintained fitness level as a condition of employment in North Carolina. In the hiring process, a critical qualifying factor is the use of fitness testing; however, if testing is used agencies need to understand fitness assessments if they are to implement required standards (Cooper Institute, 2014). During this research, very limited studies were found specific to North Carolina agencies and fitness policy, and none were found that specifically examined OSHA-reported injuries and absenteeism compared to various agency fitness policies.

Providing quality public services to the community is demanding and often agency resources are stretched thin. Agencies are trying to find that delicate balance with limited resources, whether dollars, manpower, or time. Agencies discussed varying reasons for having or not having physical fitness policies in place, but regardless; all stressed the importance of officer safety which can be increased by paying attention to officer wellness (Office of Community Oriented Policing Services, 2015).

Research continues to support the importance of a police officer's physical and psychological health, but fitness is only one piece of a larger puzzle. Improving workplace productivity calls for a comprehensive strategy that includes integrating evidence-based measurement because it is important to show that the health and productivity of the workforce directly relates to the health and well-being of the organization (Harte et al., 2011; Office of Community Oriented Policing Services, 2015).

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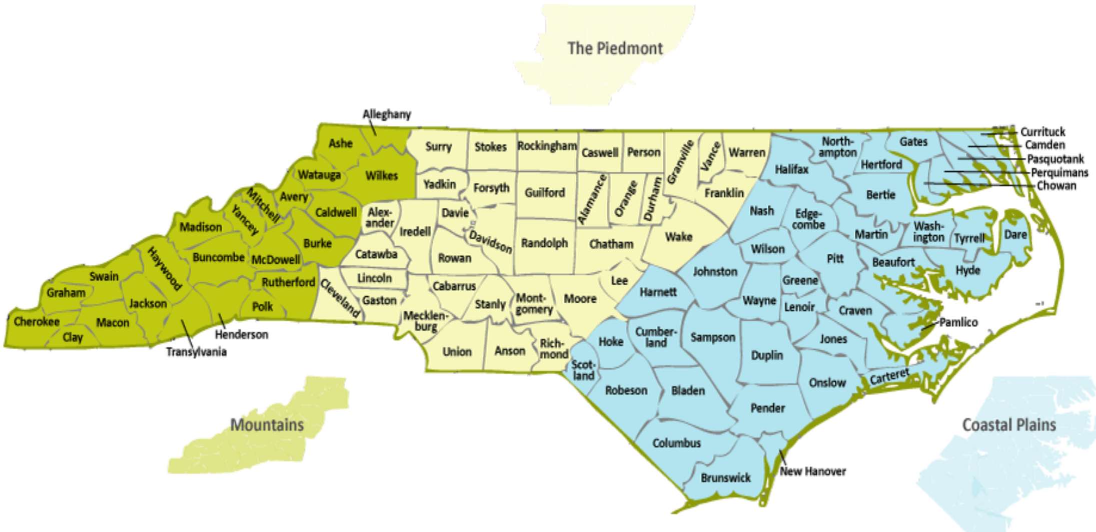
Appendix A: North Carolina Regions



Reference: Piedmont Triad Council. (2012). Retrieved from http://www.ptrc.org/

Appendix B: Piedmont Triad Region Law Enforcement Agencies

Agency	Population 50,0000 – 500,000
Alamance County	yes
-City of Burlington	yes
Caswell County	no
Davidson County	yes
Davie County	no
Forsyth County	yes
-City of Winston-Salem	yes
Guilford County	yes
-City of Greensboro	yes
-City of High Point	yes
Montgomery County	no
Randolph County	yes
Rockingham County	yes
Stokes County	no
Surry County	yes
Yadkin County	no

Appendix C: Population of Midsize Law Enforcement Agencies in the Piedmont Triad Region of North Carolina

Agency	2010 census population
[redacted] County Sheriff's Office	151,131
[redacted] Police Department	49,963
[redacted] County Sheriff's Office	162,878
[redacted] County Sheriff's Office	350,670
[redacted] Police Department	229,617
[redacted] County Sheriff's Office	488,406
[redacted] Police Department	269,666
[redacted] Police Department	104,371
[redacted] County Sheriff's Office	141,752
[redacted] County Sheriff's Office	93,643
[redacted] County Sheriff's Office	73,673

Note. From "2010 Census Interactive Population Search," by U.S. Census Bureau, n.d. (https://census.gov/). $N = 11$. Midsize = areas with 50,000-500,000 population.

Appendix D: Sample Agency Fitness Policy

STANDARD OPERATING PROCEDURE	UNIT: Training Division
SUBJECT: HEALTH AND FITNESS OF SWORN OFFICERS	NUMBER 7.4
EFFECTIVE DATE: 8/1/04	PAGE 1 OF 1
REVISION HISTORY: (Adopted 1/1/96) R1-7/1/99 R2 8/1/04 R3 8/10/07 R4 3.6.09 R5 10.14.13	

7.4.1 OBJECTIVE
The objective of the xxxxxxx Police Department is to develop and maintain a level of fitness in police personnel and to ensure their ability to accomplish assigned duties and provide satisfactory job performance without undue risk of injury or fatigue.

7.4.2 RESPONSIBILITIES
The Training Division is primarily responsible for the coordination and execution of all tasks pertaining to departmental directive 8.1.3.

7.4.3 COMPONENTS
The fitness services, provided at no charge by the department, includes:
1. An optional nutritional assessment. Officers complete a journal about their present health/eating habits.
2. A physical fitness assessment. The assessment consists of the following:

- Age, Height measurement, Weight measurement
- Body composition (Body Fat Percentage) – is measured by using skin fold calipers.
- Blood pressure and heart rate - are measured by a sphygmomanometer.
- Aerobic fitness - is measured by both a 1.5 mile walk/run and a 300-meter walk/run.
- Strength fitness - is measured by:
    - Maximum one-time bench press
    - Maximum number of push-ups within one-minute
    - Maximum number of sit-ups within one-minute

Once all tests are computed, each participant is categorized into one of five levels of fitness (age adjusted): 1) Very Poor 2) Poor 3) Fair 4) Good 5) Excellent 6) Superior
Each participant receives a synopsis of his/her results.

7.4.4 ANALYSIS OF RESULTS
Each officer will be given a copy of their physical assessment synopsis if requested. They may at any time schedule an appointment with the appropriate training coordinator for a free consultation concerning their results.

7.4.5 DUTIES
The Training Division will ensure that staff members performing tasks assessments are capable of properly conducting physical fitness assessments, providing fitness counseling and providing a written printout of results on each participant. Testing will be conducted at the Public Safety Training Facility utilizing Departmental equipment.

Retesting – Any participant can be retested upon request of the participant. Portions of any segment or the entire program can be retested.

7.4.6 FILE MAINTAINANCE
Any information obtained which pertains to the health and wellness program will be maintained in the Training Division and monitored by the appropriate training coordinator.

Appendix E: OSHA 300A Form

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 20__ __

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
______	______	______	______
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
______	______
(K)	(L)

Injury and Illness Types

Total number of …
(M)

(1) Injuries	____	(4) Poisonings	____
		(5) Hearing loss	____
(2) Skin disorders	____	(6) All other illnesses	____
(3) Respiratory conditions	____		

Establishment information

Your establishment name ______________________

Street ______________________

City ______________ State ____ ZIP ______

Industry description (*e.g., Manufacture of motor truck trailers*)
____

Standard Industrial Classification (SIC), if known (*e.g., 3715*)
__ __ __ __

OR

North American Industrial Classification (NAICS), if known (e.g., 336212)
__ __ __ __ __ __

Employment information *(If you don't have these figures, see the Worksheet on the back of this page to estimate.)*

Annual average number of employees ________

Total hours worked by all employees last year ________

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

____
Company executive / Title

( ) - / /
Phone / Date

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Appendix F: Participating Agency OSHA-Reported Injuries in Order of

Fitness Policy Stringency

Agency	Year	# of employees	Days away from work	*Absent rate (per 100)	Total injuries	*Injury rate (per 100)
(1)	2011	228	2	.88	12	5.26
	2012	248	117	47.18	15	6.05
	2013	254	154	60.63	10	3.94
	2014	254	0	0.00	14	5.51
	2015	262	12	4.58	12	4.58
(2)	2011	missing	55	missing	23	missing
	2012	1206	248	20.56	61	5.16
	2013	892	411	46.08	65	7.29
	2014	1023	305	29.81	79	7.72
	2015	954	389	40.78	66	6.92
(3)	2011	248	138	55.65	31	12.50
	2012	261	191	73.18	38	14.56
	2013	268	19	7.09	30	11.19
	2014	266	75	28.20	12	4.51
	2015	279	43	15.41	18	6.45
(4)	2011	901	426	47.28	66	7.33
	2012	900	128	14.22	66	7.33
	2013	929	471	50.70	65	7.00
	2014	881	363	41.20	56	6.36
	2015	881	266	30.19	38	4.31
(5)	2011	230	3	1.30	8	3.48
	2012	238	164	68.71	12	5.04
	2013	240	2	.83	8	3.33
	2014	243	0	0.00	2	.82
	2015	235	18	7.66	7	2.98
(6)	2011	164	15	9.15	17	10.37
	2012	182	5	2.75	18	9.89
	2013	171	25	14.62	15	8.77
	2014	172	52	30.23	17	9.88
	2015	171	267	156.14	20	11.70

* Absenteeism/injury rate is total number of days away from work (or total number of injuries) divided by total number of employees times 100 (rounded to nearest hundredth)

Appendix G: Agency Questionnaire

Agency:

# of sworn officers:

Title:

Does your agency have a physical fitness policy? *(please include copies of years 2011-2015)*

If YES

is it mandatory or voluntary?

how long has the policy been in place?

What is the rationale behind having/not having a fitness policy in place, or for changing policy?

Who are involved decision makers in fitness policy? Who ultimately decides?

What factors determine or affect fitness policy? (ie: resources, manpower, cost, etc.)

Was policy intended to address work-related injuries and illnesses?

Are you aware that North Carolina provides a full public health mandate that includes injury prevention?

If no, would you want more information?

If yes, is that part of the rationale for having/not having a fitness policy?

Drew-Nord et al. Journal of Occupational Medicine and Toxicology 2011, 6:25
http://www.occup-med.com/content/6/1/25

JOURNAL OF OCCUPATIONAL MEDICINE AND TOXICOLOGY

RESEARCH Open Access

Accuracy of peak VO2 assessments in career firefighters

Dana C Drew-Nord[1*], Jonathan Myers[2], Stephen R Nord[3], Roberta K Oka[4], OiSaeng Hong[1] and Erika S Froelicher[5]

Abstract

Background: Sudden cardiac death is the leading cause of on-duty death in United States firefighters. Accurately assessing cardiopulmonary capacity is critical to preventing, or reducing, cardiovascular events in this population.

Methods: A total of 83 male firefighters performed Wellness-Fitness Initiative (WFI) maximal exercise treadmill tests and direct peak VO_2 assessments to volitional fatigue. Of the 83, 63 completed WFI sub-maximal exercise treadmill tests for comparison to directly measured peak VO_2 and historical estimations.

Results: Maximal heart rates were overestimated by the traditional 220-age equation by about 5 beats per minute ($p < .001$). Peak VO_2 was overestimated by the WFI maximal exercise treadmill and the historical WFI sub-maximal estimation by ~ 1MET and ~ 2 METs, respectively ($p < 0.001$). The revised 2008 WFI sub-maximal treadmill estimation was found to accurately estimate peak VO_2 when compared to directly measured peak VO_2.

Conclusion: Accurate assessment of cardiopulmonary capacity is critical in determining appropriate duty assignments, and identification of potential cardiovascular problems, for firefighters. Estimation of cardiopulmonary fitness improves using the revised 2008 WFI sub-maximal equation.

Background

Every 23 seconds a fire in the United States requires the services of a career or volunteer fire department [1]. Sudden cardiac death is the most common cause of on-duty death among firefighters and occurs at higher rates than those found in similar occupations, such as police and emergency medical services [2].

A joint task force of the International Association of Firefighters (IAFF) and International Association of Fire Chiefs developed the Fire Service Joint Labor Management Wellness-Fitness Initiative (WFI) in 1997. Revisions in the 1999 and 2008 WFI recognize the firefighter as the "most important asset" in the fire service, and its intent is to improve firefighter function, on-duty effectiveness, and overall quality of life, while reducing morbidity and mortality related to fire fighting [3]. A major component of the WFI is assessment of firefighters' cardiopulmonary capacity, with a stepmill test, sub-maximal, or a maximal exercise treadmill test. The WFI mandates that firefighters have a maximal exercise test at age 40 and every other year thereafter. The maximal exercise test is intended to measure peak VO_2 (measured as $ml/kg^{-1}{\cdot}min^{-1}$), which is an objective, clinical measure that defines the limits of cardiopulmonary function. Peak VO_2 reflects an individual's ability to increase their heart rate and stroke volume, and redirect oxygenated blood to muscles for work on demand. Exercising at levels beyond which the cardiopulmonary system can adequately supply oxygen (commonly termed the anaerobic or ventilatory threshold, or VT) involves progressively greater degrees of oxygen-independent muscle metabolism, which is dramatically less efficient than aerobic metabolism, and can compromise cardiovascular function [4].

Quantifying the energy demands of firefighting during fire suppression is difficult due to the inherent dangers of fire suppression tasks. Most efforts to define the arduous physical work demand requirements during firefighting have been focused on establishing the level of metabolic equivalents (METs) (1 MET ≈ 3.5 ml of O_2/kg/min) using simulated tasks. A MET is a multiple of the resting metabolic rate and is commonly estimated using standardized equations [4]. 10 METs is roughly equivalent to jogging a 10-minute mile; 14 METs is

* Correspondence: mochadana@aol.com
[1]Department of Community Health Systems, School of Nursing, University of California, 2 Koret Way, San Francisco, California 94143, USA
Full list of author information is available at the end of the article

similar to many extended competitive activities such as running or rowing competitively, or bicycle racing at a high level [5]. The estimated METs proposed for firefighting range from 9.6 [6] to 14 [7] (a peak VO_2 range of 33.6 ml/kg^{-1} min^{-1}·to 49 ml/kg^{-1}·min^{-1}). Recent analysis of physical aptitude tests among firefighter recruits demonstrated that male recruits' average VO_2 requirement was 38.5 ml/kg^{-1}·min^{-1} (11 METs) to complete a timed simulated firefighting assessment course [8]. Measurement of functional capacity in 23 firefighters suggested that a mean of 41.54 ml/kg^{-1}·min^{-1} (11.9 METs) is required to complete standard fire suppression tasks while wearing personal protective equipment [9].

Firefighting work demands can be extreme and accurate assessment of cardiopulmonary status, as well as detection and treatment of any underlying cardiovascular disease, is critical to insure firefighter fitness for duty and prevent on-duty cardiac events or death. The 1999 WFI sub-maximal exercise test was found to overestimate true peak VO_2 in individual firefighters [10]. Concern about overestimation led to a revised equation for estimating peak VO_2 from sub-maximal exercise treadmill tests in the 2008 WFI.

Materials and methods

Given that previous sub-maximal exercise test results in the WFI were shown to overestimate peak VO_2, and that the WFI maximal exercise treadmill protocol has not been validated for accuracy in the literature, this study was undertaken to assess the validity of both the maximal and revised sub-maximal exercise treadmill peak VO_2 estimates in firefighters. Specifically, the present study tested the following comparisons: (a) estimated maximal heart rate (220 - age) to actual measured maximal heart rate; (b) WFI maximal exercise estimated peak VO_2 to directly measured peak VO_2; c) averaged pre-revision sub-maximal estimated peak VO_2 to revised sub-maximal estimated peak VO_2; and (d) directly measured peak VO_2 to revised WFI sub-maximal estimated peak VO_2.

Study Setting and Participants

The study setting was a medium-sized suburban fire department in the eastern region of the San Francisco Bay Area in northern California. This department serves approximately 163,000 citizens and covers 46 square miles. All firefighters (N = 105) assigned to suppression duties were recruited, including firefighters, firefighter/paramedics, firefighter/engineers, firefighter/captains and battalion chiefs. There were no women suppression firefighters in the department studied. This is consistent with national career firefighter statistics as women only represent approximately 4.5% of the fire service [11]. All testing took place during a five-week period between December 2008 and January 2009.

Inclusion criteria for participation required that each participant had successfully completed a WFI examination within the previous nine months and achieved a minimum of 10 METs (peak VO_2 of 35 ml/kg/min), on either a sub-maximal (using the pre-2008 equation), or maximal exercise treadmill test. Exclusion criteria included injury, illness, or scheduling conflicts that precluded testing during the study period. The final study population consisted of 83 male career firefighters from all suppression ranks in this department.

The study was conducted with approval of the University of California San Francisco Committee on Human Research. Signed informed consents were obtained and all testing was conducted during on-duty hours with the approval of the department and union local.

Testing occurred at an occupational health clinic where previous WFI examinations for this fire department had been conducted. A physician board certified in internal medicine and occupational medicine, and a nurse practitioner experienced in exercise testing, performed all treadmills and direct VO_2 measurements. Participants arrived on the day of scheduled testing with their assigned duty crew, with gym clothes and running shoes appropriate for completing a maximal exercise test.

Measurements

Data collection consisted of medical record abstraction for demographics, cardiovascular risk factors and exercise test information. Demographic characteristics included age, rank, and years of fire service. Definitions of cardiovascular risk factors were obtained from the American Heart Association, Adult Treatment Panel III (ATP III), The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC7), and the Centers for Disease Control and Prevention [12-15]. All serum samples were analyzed at the same hospital-based certified laboratory (Centers for Medicare and Medicaid Services Clinical Laboratory Improvements Amendments (CLIA)). Cardiovascular risk factors of the participants are summarized in Table 1.

Maximal Heart Rates

Maximal estimated heart rates were calculated as 220-age. Directly measured maximal heart rates were determined from the electrocardiogram at the point of volitional fatigue as determined by the firefighter and corroborated by the direct VO_2 assessment indicating that they had crossed the VT.

Maximal Exercise Treadmill with Direct Peak VO_2 Assessment

All 83 participants completed a maximal exercise test using the 2008 WFI Protocol with concurrent direct peak VO_2 measurements. Maximal exercise treadmill

Table 1 Participant Cardiovascular Risk Factor Profile - Maximal Exercise Treadmill-Peak VO_2 Assessment (n = 83)

Risk Factor	Mean, SD
Body Mass Index (kg/m^2)	28.2 (± 3.9)
Systolic BP	117 (± 10)
Diastolic BP	69 (± 7)
Total Cholesterol* (mg/dL)	197 (± 38)
HDL** (mg/dL)	47 (± 11)
LDL** (mg/dL)	126 (± 36)
Cholesterol/HDL Ratio	4.35 (± 1.17)
Triglycerides (mg/dL)	118 (± 70)

*-fasting

**- HDL - high density lipoprotein; LDL - low density lipoprotein

tests were considered complete when the firefighter indicated volitional fatigue (n = 83, see above), or if terminated by the testing physician due to concerns about cardiopulmonary distress (n = 0). The WFI protocol is a modified ramp protocol comprised of a 3-minute warm-up period at 3 mph - 0% grade, followed by fifteen 1-minute stages. Stage 1 begins at 4.5 mph and 0% grade, with the treadmill incline increasing 2% and speed increasing by 0.5 mph alternately in stages 2 through 15. The WFI maximal exercise treadmill estimates peak VO_2 based on the American College of Sports Medicine metabolic equation for running [16].

Peak VO_2 was obtained using the Cardio Coach CO_2™ VO_2 Fitness Assessment System, Model 9001-RMR (Korr Medical Technologies, Salt Lake City, Utah). The Cardio Coach CO_2™ is an economical, portable metabolic testing device that is feasible for use in a clinic and has been previously validated for measurement of peak VO_2 levels [17,18]. The Cardio Coach CO_2™ is a dual gas analyzer (O_2 and CO_2) that automatically calibrates to standard temperature and pressure, dry at the beginning of each testing cycle. The Cardio Coach CO_2™ measures heart rate using the Polar T-31 heart monitor (Polar, Inc., Lake Success, NY). Heart rate and VO_2 ($ml/kg^{-1} \cdot min^{-1}$), VCO_2 ($ml/kg^{-1} \cdot min^{-1}$), VE/VO_2, VE/VCO_2, VE in L/min, FeO_2%, Fe CO_2%, and respiratory exchange ratio are graphically reported every 15 seconds. The Cardio Coach CO_2™ uses the ventilatory equivalents method (Ve/VO_2) to detect VT (Korr Medical Technologies, 2009).

Revised Sub-maximal Exercise Treadmill Assessments

In the latter part of 2008, the WFI introduced a revised equation for estimating peak VO_2: peak VO_2 = 56.981 + (1.242 × TT) - (0.805 × BMI), where TT is the test time required to achieve target heart rate, and BMI is Body Mass Index. The 2008 WFI calculates target sub-maximal heart rate (208 - (0.7 × age) × 0.85, whereas previous sub-maximal heart rates were based on (220-age) × 0.85 [3,19].

Of the 83 firefighters who volunteered for the maximal exercise treadmill tests and directly measured peak VO_2, 63 subsequently completely their annually scheduled WFI examination, which included a sub-maximal exercise treadmill test, within the subsequent four to eight weeks. These subsequent WFI sub-maximal exercise treadmill tests, using the revised equation, took place under identical conditions as the study WFI maximal exercise treadmill tests but without the direct VO_2 measurement. The sub-maximal test uses the WFI treadmill protocol (see above) but terminates 15 seconds after the firefighter reaches their target heart rate.

Pre-revision Sub-maximal Exercise Treadmill Assessments

Prior to the 2008 WFI revision there was no published equation for the estimation of peak VO_2 from the sub-maximal exercise treadmill. The estimated peak VO_2 was determined by duration of the test and stage achieved [19]. Between one and seven historical sub-maximal test results were available for each of the 63 participants, and were averaged to create comparative historical variables.

Procedure

Participant's height, weight and resting blood pressure was measured. A resting electrocardiogram (ECG) was completed, using the Welch-Allyn Schiller AT-10 6-Channel electrocardiograph/treadmill (San Diego, California). Upon completion of the resting ECG the Mason-Likar lead configuration was modified to accommodate the exercise treadmill [4]. The participant was then fitted with the appropriate 2-way non-rebreathable mask (Hans-Rudolph, Inc., Shawnee, Kansas). The mask completely covered the nose and mouth of the participant and was checked for air leaks to eliminate extraneous room air from affecting the interpretation of peak VO_2. A standing electrocardiogram was obtained and the treadmill was initiated. At test termination the firefighter recovered in the supine position. Available data from the maximal exercise treadmills is detailed in Table 2.

Statistical Analyses

Prior to all analysis all data were examined using stem and leaf plots and found to have normal distribution.

Table 2 Maximal Exercise Treadmill Data (n = 83)

	Minimum	Maximum	Mean, SD
Resting Systolic	102	164	122 (±10)
Resting Diastolic	60	100	73 (±8)
Resting Heart Rate	42	91	63 (±10)
Maximal Heart Rate	130	194	174 (±10)
Peak VO_2 Actual	26.3	69.5	43.6 (±9.1)
RER* - Peak Exercise	0.90	1.28	1.09 (± .07)

* - Respiratory Exchange Ratio

Drew-Nord et al. Journal of Occupational Medicine and Toxicology 2011, 6:25
http://www.occup-med.com/content/6/1/25

Dependent t-tests were conducted on all 83 participants to test for differences between:

1) Estimated maximal heart rate (220 - age) and directly measured maximal heart rate.
2) WFI maximal exercise treadmill estimated peak VO_2 and directly measured peak VO_2.

Additional dependent t-tests were conducted on the results of the 63 participants who subsequently performed a revised WFI sub-maximal exercise treadmill test for differences between:

1) Averaged pre-revision WFI sub-maximal exercise treadmill estimated peak VO_2 mean (converted to METs) to revised WFI sub-maximal exercise treadmill estimated peak VO_2 (converted to METs).
2) Directly measured peak VO_2 (converted to METs) to revised WFI sub-maximal exercise treadmill estimated peak VO_2 (converted to METs).

All dependent t-tests were two tailed, with $\alpha = 0.05$ used for statistical significance. Statistical analyses were performed using SPSS Version 15.0 (SPSS, Inc., Chicago, Illinois).

Results

There were 105 active suppression male career firefighters eligible for participation in the study. Of those, five were new hires who had not completed a WFI examination. Six firefighters chose not to participate; of the 94 choosing to participate 11 could not be scheduled for maximal exercise tests due to injury, illness or scheduling conflicts resulting in an $n = 83$ for this study. The participants' ages ranged from 26 to 57 years with a mean of 41.1; 94% of the participants were Caucasian, and 6% were Hispanic or African-American. The years of firefighting ranged from 2 to 34 with a mean of 15.6.

Maximal Estimates and Measurements

The traditional maximal heart rate estimation (220 - age) was significantly higher than measured maximal heart rate (178.6 vs. 173.6 with a mean difference of 4.96 beats/min, $p < 0.001$, 95% CI: 3.03, 6.90). Estimated peak VO_2 was significantly higher than directly measured peak VO_2 (47.7 vs. 43.6, with a mean difference of 4.06 ml/kg/min, (1.16 METs) $p < 0.001$, 95% CI: 2.88, 5.23).

Sub-maximal Estimates and Measurements

Within four to eight weeks of the maximal exercise treadmill tests 63 participants completed a sub-maximal exercise treadmill test (using the revised 2008 WFI equation). Their average age was 40.19 years (± 6.9) and average years of firefighting was 14.4 (± 6.8). All firefighter suppression ranks were represented in this subgroup. The subsequent examination allowed for comparison of the revised sub-maximal exercise treadmill peak VO_2 estimate to an averaged pre-revision (comparative historical variable) sub-maximal exercise treadmill peak VO_2 estimate and the recently obtained directly measured peak VO_2. For simplicity in reporting sub-maximal results all peak VO_2 results were converted to METs (peak VO_2/3.5).

A statistically significant difference was found between pre-revision sub maximal exercise treadmill peak METs mean estimates and revised sub-maximal peak METs estimates (14.81 vs. 12.58, with a mean difference of 2.23 METs, $p < 0.001$, 95% CI: 1.86, 2.59) These findings support previous research determining that WFI sub-maximal peak METs estimates prior to the 2008 revision were overestimated [10]. Revised sub-maximal treadmill METs estimates did not differ from directly measured maximal exercise treadmill METs, indicating that the revised 2008 estimating equation is a reasonable estimate of METs (12.64 vs. 12.58 with a mean difference of .07 METs, $p \leq .76$, 95% CI: -.39, .54) This represents additional validation of the accuracy of the new estimating equation [3]. All maximal and sub-maximal comparisons are summarized in Table 3.

Discussion

Fire departments often struggle to determine fitness for duty for their members who return from an injury or illness, prepare to embark on wildland strike teams, heavy rescue missions, or for daily work assignments. There are ongoing efforts to define minimally acceptable and safe fitness levels; levels that should be informed by the energy requirements needed during a firefighter's tour of duty. Maximum directly measured METs for the firefighters in this study ranged from 7.5 to 19.9, indicating that some participants might have a difficult time meeting the demands of the job while others appear adequately fit. Four different methods of cardiopulmonary assessment are compared here: direct measurement of peak VO_2, estimated peak VO_2 derived from a maximal exercise treadmill equation, historical average of pre-revision estimated peak VO_2 sub-maximal exercise treadmills, and estimated peak VO_2 derived from the revised (2008) sub-maximal exercise treadmill equation. Directly measured peak VO_2 is the most objective and considered the "gold standard" of the four methods [4].

The difference observed in maximum heart rate between directly measured maximum heart rate (while wearing a non-rebreathable mask), and a 220-age estimated maximum heart rate (part of the maximal exercise treadmill estimation equation) provides some explanation for the over-estimation. Estimated maximal

Table 3 Comparisons: Heart Rate, Peak VO_2, Estimated METs

	n	Mean	SD	SEM	95% CI Lower	95% CI Upper	t	d	Sig(2-tailed)
Estimated Max.									
HR: Actual Max.	83	4.96	8.87	.97	3.03	6.9	5.09	82	.00
HR									
Estimated peak VO_2: Direct measure peak VO_2	83	4.06	5.39	.59	2.88	5.23	6.85	82	.00
Pre-revision METs									
Est.: Revised METs estimate	63	2.23	1.46	.18	1.86	2.59	12.14	62	.00
Direct METs:									
Revised Sub-maximal METs estimate	63	.07	1.85	.23	-.39	.54	.31	62	.76

heart rates were about 5 beats per minute higher than those measured during peak exercise. Heart rates are a method used on the fire ground to evaluate a firefighters' capability to re-enter the fire scene. Using target heart rates that exceed true maximums, or percentages of estimated maximum heart rates that are inaccurate, could result in dangerous duty assignments.

Assessment of direct peak VO_2 and maximal exercise treadmill results indicate that the equation utilized by the WFI maximal treadmill over-estimates peak VO_2 by an average of 4.06 $ml/kg^{-1} \cdot min^{-1}$, or approximately 1 MET. If a firefighter's fitness level is less than optimal, or if they have underlying cardiovascular disease, this overestimation could lead to on-duty clearances that could prove compromising.

Revised sub-maximal exercise treadmill peak VO2 estimates were compared to averaged pre-revision historical sub-maximal exercise peak VO_2 estimates. The average overestimation of the historical mean was approximately 2 METs. This finding supports the Mier and Gibson report (2004) that the pre-revision WFI sub-maximal treadmill equation overestimated peak VO_2, and that those equation results should be used with caution for duty assignment decisions.

The comparison of directly measured peak VO_2 to the revised sub-maximal exercise treadmill peak VO_2 estimates (n = 63) found that there were no differences between the two assessment methods. When comparing revised WFI sub-maximal exercise treadmill peak VO_2 estimates to previous years of testing, or to reports in the literature, careful consideration must be given to which estimation method was used. The same task, measured with different estimating equations, can result in different results as demonstrated herein.

Limitations and Strengths

The limitations of our study include the self-selection bias of the participants, the limited gender and ethnic demographics of the group (all male, predominantly Caucasian), and the range in number of historical sub-maximal exercise treadmill VO_2 estimates, resulting in a less than ideal comparison group. While testing was completed within a four month period, it included the winter holiday season which may have had a seasonal influence on fitness behavior (resulting in an increase or decrease in exercise intensity). The composition of the sample is reflective of the department in terms of gender and ethnicity. There is an average four to eight week gap between the direct measure peak VO_2 and the sub-maximal exercise treadmill peak VO_2 assessment without any documentation of fitness behaviors. However, any fitness improvement on the part of firefighters in the interim would have directed the results towards the null.

The strengths of our study include the number of participants, their range in age, rank, firefighting experience, and their experience with the WFI protocol. The availability of seven years historical data can be viewed as a strength. Use of the mask to measure peak VO_2 was familiar to the participants as they routinely work with self-contained breathing apparatus. The ability to perform all testing components while on duty encouraged participation. There were no incentives offered for participation. All testing was completed in the same facility using the same equipment and personnel, thus increasing consistency of testing and inter-rater reliability.

Clinical Implications

Firefighters who have been tested using earlier estimation equations may require careful explanation as to a noticeable drop in test results when using the revised 2008 WFI equation. Participants are likely to be disappointed to see a reduction in their "fitness level" when they have not changed their patterns, nor workout habits, between testing cycles. Again, if a fire fighter falls into the lower fitness categories, or has underlying cardiovascular disease, inaccurate estimates could contribute to cardiac compromise.

Conclusions

In order to protect firefighters from potentially life-threatening cardiac situations it is imperative that exercise testing results are accurate, whether the test is being used for duty assignment or part of a comprehensive risk assessment. The results from the revised sub-maximal exercise treadmill estimation equation appear to accurately reflect directly measured peak VO_2 results. WFI maximal treadmill peak VO_2 estimates should be interpreted with caution, especially as they appear to over-estimate METs by an average of 1. Given the potential for over-estimation of fitness, providers who make fitness-for-duty assessments should consider the energy requirements of the job, any underlying cardiovascular risk factors, and the method of testing used when recommending return to, or continuation of, duties. These findings support the continuation and further expansion of reliable exercise testing of firefighters, within the context of a cardiovascular disease prevention program such as the WFI.

Performing measured peak VO_2 and maximal exercise treadmill tests can be challenging for fire departments to accomplish due to limited resources. The 2008 WFI sub-maximal exercise treadmill test can be safely administered outside of a medical setting using tools that are often available within the fire department (treadmill, stopwatch, and Polar heart monitor). Disadvantages of the sub-maximal treadmill test are the limited means for assessing underlying cardiovascular conditions, and the inability to determine maximal cardiovascular performance directly. However, the revised 2008 sub-maximal treadmill peak VO_2 estimation equation is a valid tool to assess interim progress in cardiovascular training programs.

Acknowledgements
The corresponding author would like to thank the Livermore-Pleasanton Fire Department administration, suppression, and support staff for their trust, enthusiasm, and participation in this project; the National Institute for Occupational Safety and Health (Grant #T42 OH 008429) for its traineeship support; and the UCSF School of Nursing Century Club for its financial support.

Author details
[1]Department of Community Health Systems, School of Nursing, University of California, 2 Koret Way, San Francisco, California 94143, USA. [2]School of Medicine, Stanford University, Palo Alto VA Health Care System, 3801 Miranda Avenue, Palo Alto, California 94304-1290, USA. [3]Premier COMP Medical Group, Inc. 5635 W. Las Positas Blvd., Suite 401, Pleasanton, CA 94588, USA. [4]Palo Alto VA Health Care System, 3801Miranda Avenue, Palo Alto, California 94304-1290, USA. [5]Department of Physiological Nursing, School of Nursing, University of California, 2 Koret Way, San Francisco, California 94143, USA.

Authors' contributions
All of the authors contributed substantially to the conception, design, data acquisition and analysis, manuscript drafts and revisions of this study. Each has given final approval for publication.

Competing interests
Dr. Drew-Nord and Dr. Nord own the occupational medicine practice where this research was conducted and contract with various fire agencies to provide WFI services. This relationship was determined to represent no conflict of interest by the Institutional Review Board of the University of California, San Francisco. The remaining authors declare that they have no competing interests.

Received: 6 October 2010 Accepted: 25 September 2011
Published: 25 September 2011

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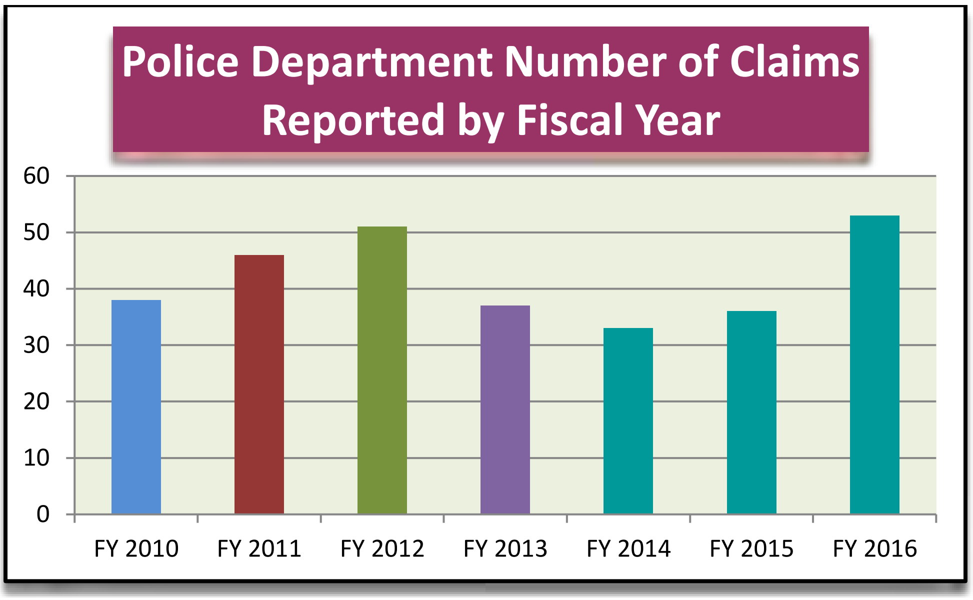
doi:10.1186/1745-6673-6-25
Cite this article as: Drew-Nord *et al.*: Accuracy of peak VO2 assessments in career firefighters. *Journal of Occupational Medicine and Toxicology* 2011 6:25.

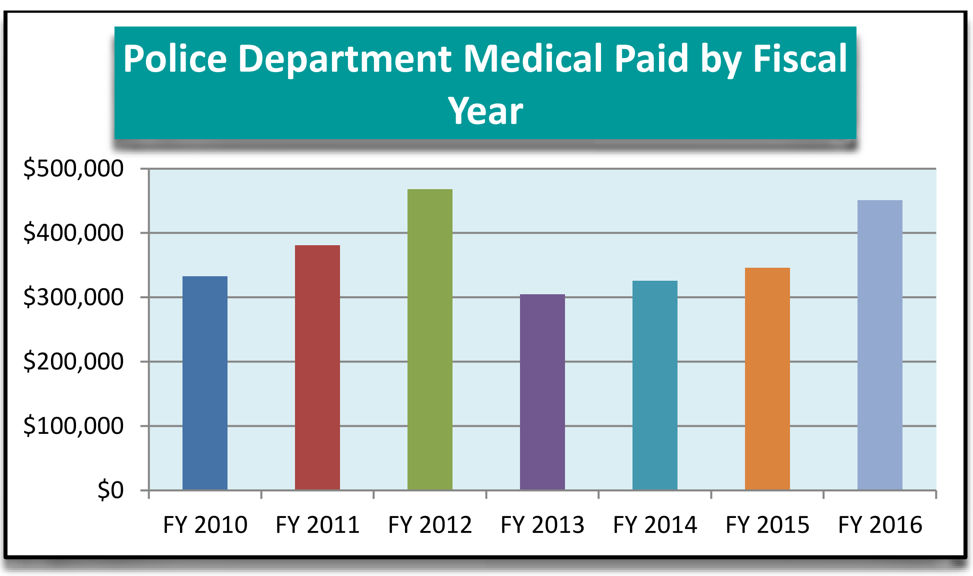
Program Effectiveness

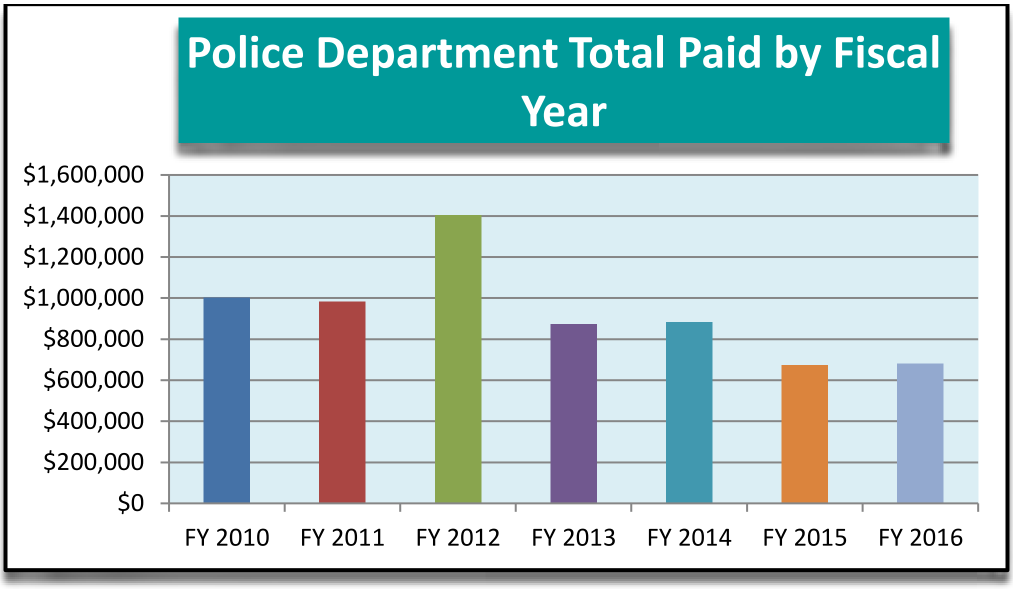
Case Study – Clovis Police Department

Clovis Police Department

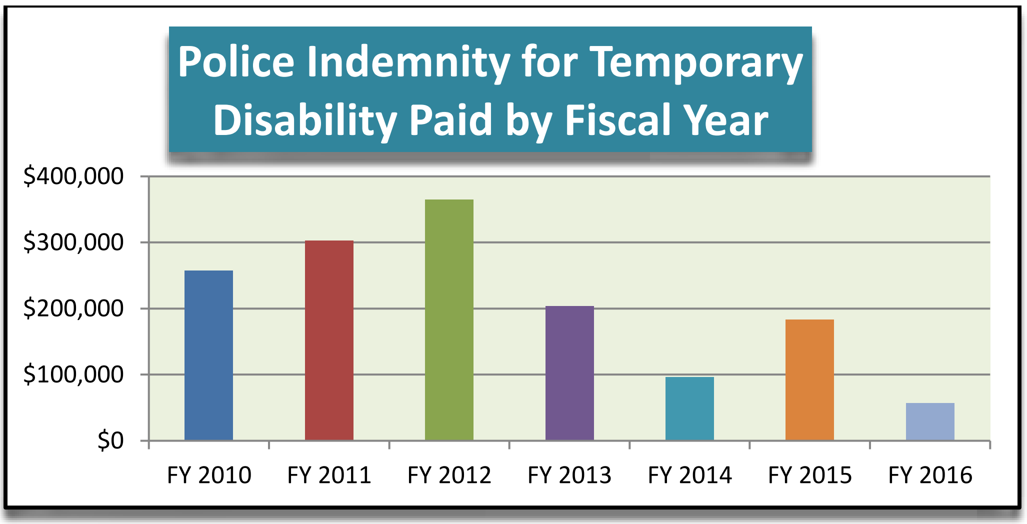
In 2008, the Clovis Police Department suspended their health screening and fitness testing program. As illustrated below, the number of claims increased until 2012 when Pinnacle Training Systems began a wellness program for these officers.







There has been a 50% reduction in total dollars paid from 2012-2016.



Despite the increase in the number of claims in 2016 and the medical dollars paid per fiscal year (the first increase since 2012), the total number of dollars paid and the dollars paid for temporary disability is still lower since the implementation of our program. This demonstrates the effectiveness of a well implemented program. While claims might increase in any given year, fit officers will return to work more quickly than those who are unfit reducing indemnity dollars paid. The Clovis Police Department has implemented a non-voluntary, incentivized, yet potentially punitive MOU for officers based on their overall health and fitness levels. Since the implementation of this program, the culture within the department has changed and more officers are motivated to engage in healthy behaviors. Furthermore, 4 officer’s lives have been saved due to identifying abnormal EKG rhythms.

Based on the cost of the program and the total dollars paid since 2012 to 2016, the return on investment for this department is 17.5:1

American Journal of Epidemiology

Vol. 179, No. 2
DOI: 10.1093/aje/kwt213
Advance Access publication:
October 31, 2013

Original Contribution

The Association of Aerobic Fitness With Injuries in the Fire Service

Gerald S. Poplin*, Denise J. Roe, Wayne Peate, Robin B. Harris, and Jefferey L. Burgess

* Correspondence to Dr. Gerald S. Poplin, University of Virginia, Center for Applied Biomechanics, Department of Mechanical and Aerospace Engineering School of Engineering and Applied Science, 4040 Lewis and Clark Drive, Charlottesville, VA 22911 (e-mail: poplin@virginia.edu).

Initially submitted April 24, 2013; accepted for publication August 6, 2013.

The aim of the present study was to understand the risk of injury in relation to fitness in a retrospective occupational cohort of firefighters in Tucson, Arizona, from 2005 to 2009. Annual medical evaluations and injury surveillance data were linked to compare levels of aerobic fitness in injured employees with those in noninjured employees. The individual outcomes evaluated included all injuries, exercise-related injuries, and sprains and strains. Time-to-event analyses were conducted to determine the association between levels of fitness and injury likelihood. Fitness, defined by relative aerobic capacity (VO_{2max}), was associated with injury risk. Persons in the lowest fitness level category (VO_{2max} <43 mL/kg/minute) were 2.2 times more likely (95% confidence interval: 1.72, 2.88) to sustain injury than were those in the highest fitness level category (VO_{2max} >48 mL/kg/minute). Those with a VO_{2max} between 43 and 48 mL/kg/minute were 1.38 times (95% confidence interval: 1.06, 1.78) more likely to incur injury. Hazard ratios were found to be greater for sprains and strains. Our results suggest that improving relative aerobic capacity by 1 metabolic equivalent of task (approximately 3.5 mL/kg/minute) reduces the risk of any injury by 14%. These findings illustrate the importance of fitness in reducing the risk of injury in physically demanding occupations, such as the fire service, and support the need to provide dedicated resources for structured fitness programming and the promotion of injury prevention strategies to people in those fields.

aerobic capacity; fire service; injury

Abbreviation: VO_{2max}, relative aerobic capacity.

The work demands for fire service employees are well documented as requiring considerable physical abilities. In 1992, Sothmann et al. (1) recommended that these workers have a relative aerobic capacity (VO_{2max}) between 38 and 42 mL/kg/minute in order to meet the measured workload demand for firefighters while also maintaining a reserve capacity to respond to other unanticipated events. Since then, most fire departments have adopted minimum fitness standards, often emphasizing aerobic capacity as a definitive measure of overall fitness. Standard fitness assessments for the general population typically have a set of norms that are scaled to age and sex, and results can range from poor to superior (2).

Opportunities for injury in the fire service are diverse. Persons with higher aerobic capacities should be able to consume more oxygen than those with lower aerobic capacities, and their bodies are likely to be more efficient at circulating oxygen to all systems and producing energy. Persons in the top levels of a fitness spectrum may not be as susceptible to microtraumas and may recover better from injury than their less-fit counterparts (3–9). Hence, those with higher VO_{2max} should have a lower potential for fatigue and subsequent injury. Conversely, a high fitness level may also be an indicator that a person has an increased risk of injury, as these persons likely have greater exposure time to exercising hazards. In some fire departments, exercise has been shown to be the leading activity associated with on-duty injuries (10).

The objectives of the present study were to establish and understand the relationship between fitness status and the risk of injury in a 5-year occupational cohort of career fire service members. We hypothesized that firefighters deemed to be on the lower end of the fitness spectrum would be more susceptible to injury than their more fit colleagues.

MATERIALS AND METHODS

Population description, data sources, and years

As previously described (10), the present study includes data from commissioned employees of a medium-sized metropolitan fire department in the southwestern United States. Briefly, the fire department operates 21 fire stations and responds to nearly 520,000 permanent residents (with seasonal increases nearing 720,000 residents). Like many other municipal fire departments, this fire department requires an annual physical examination to assess fitness levels and provide medical clearance for each commissioned employee. Between 2005 and 2009, data for this study were obtained from 2 sources: physical assessments from annual clinic visits and department injury surveillance reports. The present study included all commissioned (noncivilian) employees of the fire department who were employed at some point in time during the study period. Approval for and oversight of the use of human subjects was provided by the University of Arizona's Institutional Review Board.

Physical fitness measures

Information collected from annual exams included anthropometric measures (e.g., height, weight, body fat percentage), VO_{2max}, muscular strength, muscular endurance, and flexibility. Aerobic capacity can be defined as the highest rate at which oxygen can be taken up and utilized by the body during rigorous exercise (11). Aerobic capacity is expressed as a rate that is referenced in either absolute terms (L/minute) or by relative measures (mL/kg/minute) to account for individual size variations. In this study, we refer to studied relative aerobic capacity. VO_{2max} was categorized into 3 levels of fitness, using the 25th and 50th percentiles as the cutoff points between the "less fit" (<43 mL/kg/minute) and "high fit" (>48 mL/kg/minute) aerobic capacity categories, respectively. The use of a percentile as the cutoff was also used in 1999 by Lee et al. (12), who studied the relationship between cardiorespiratory fitness and cardiovascular disease in a large observational cohort of men. In addition, the 25th percentile closely relates to the recommended minimum level of aerobic capacity (42 mL/kg/minute) suggested by Sothmann et al. (1) that has been adopted by the National Fire Protection Association and most municipal fire departments in the United States (including those in this study's population). The 50th percentile was chosen as the cut off for the high fit designation because of the distributional characteristics of the population's data and to remain in accordance with current annual physical assessment methods used by the department. Neither age nor sex was directly considered when assigning aerobic fitness levels, as fire departments institute a minimum standard for aerobic fitness to help ensure that all commissioned fire personnel are capable of performing the myriad of critical job tasks and responses regardless of age or sex. Maximum aerobic capacity was estimated using the submaximal incremental treadmill protocol developed by Gerkin et al. (13) and guidelines suggested by the Wellness Fitness Initiative of the International Association of Fire Fighters and the International Association of Fire Chiefs (14). In brief, each participant is hooked up to a heart rate monitor and made to walk on a standard treadmill. The treadmill's speed and incline are increased at prespecified time points until the subject's target heart rate is reached and VO_{2max} can be estimated. Direct measurement of VO_{2max} using oxygen and carbon dioxide analyzers and monitoring of electrocardiogram output is generally limited to specific indications because of its higher cost.

Injury defined

Injuries that occurred on the job were recorded either if they were reportable to the Occupational Safety and Health Administration or if they were deemed nonreportable but were documented internally because of the potential for the injury to progress to the point of requiring an insurance claim (e.g., due to cumulative or repeated trauma). It should be noted that field personnel work 24-hour shifts. For the purposes of these analyses, reported injuries known to be only internally documented incidents with no loss of function or ability to perform duties (by review of injury report details) were excluded. In addition, cardiac events (e.g., stroke, heart attack), along with heat exhaustion, stress, and other medical issues, were excluded from injury analysis. These events were considered more likely to be indicative of an underlying set of symptoms, conditions, or diseases than to be related to an injury sustained on the job.

Statistical analyses

Data from annual physical examinations and injury surveillance reports were merged utilizing unique identifiers, which enabled a direct comparison of persons with and without injury. Quantitative methods, notably time-to-event regression models, were used to evaluate the relationship between aerobic fitness and injury. Analyses were conducted for 3 separate injury outcomes: 1) any recorded injury; 2) injuries resulting from physical exercise; and 3) any reported sprain or strain.

For time-to-event (i.e., first injury) analyses, cumulative incidence was estimated using the life table and Kaplan-Meier methods, which allow for censoring (i.e., no injury). Incidence rates were assessed with respect to established fitness measures. These levels were set using methods similar to those used for establishing aerobic fitness levels (as previously explained); however, in this case, sex was taken into account for measures of body fat percentage, grip strength, and flexibility. The time-to-event analysis utilized repeated measures in which each time point (observation) corresponded to a person's annual medical examination until the occurrence of injury or censoring. This method accounted for variable observation periods because some employees were introduced later in the study period (e.g., new employees), whereas others dropped out (e.g., retired, transferred), and it enabled a single person to contribute time at risk to each of the fitness levels based on his or her most recent physical assessment. Survival analyses were completed using Cox proportional hazard regression models. Statistical analyses were conducted using Stata software, version 11.2 (StataCorp LP, College Station, Texas).

Table 1. Mean Values of Person-Level Descriptive Statistics, Tucson, Arizona, 2005–2009

Variable	No.	Mean	Minimum Mean	Maximum Mean	Mean Difference
VO_{2max}, mL/kg/minute	782	49.6	43.6	55.8	12.2
Resting heart rate, beats per minute	797	62.9	57.2	69.2	12.0
Total grip strength, lbs[a]	797	229.5	211.4	247.5	36.1
Flexibility, inches[b]	782	5.8	4.5	7.0	2.5
% body fat	790	18.3	15.4	20.9	5.5

Abbreviation: VO_{2max}, relative aerobic capacity.
[a] 1 lb = 0.45 kg.
[b] 1 inch = 2.54 cm.

RESULTS

At the end of each calendar year from 2005 to 2009, there were between 577 to 694 commissioned employees within this metropolitan fire service. During that time period, 799 employees underwent at least 1 physical examination and follow-up until their first injury event or censoring. On average, the clinic database accounted for approximately 87% of the workforce population, and the mean age was 39.2 (standard deviation, 9.6) years. Table 1 displays select summary fitness measures of the study population across the study period. The mean for VO_{2max} for the overall population across time was 49.6 mL/kg/minute, with a 12.2-unit difference between the minimum and maximum mean values. In total, 773 injuries were reported (Table 2). There were 357 persons who sustained at least 1 injury of any type, 174 who sustained at least 1 exercise-related injury, and 294 who sustained at least 1 sprain or strain injury. The median lengths of follow-up were 2.5, 3.2, and 2.8 years, respectively. A previous descriptive analysis of this population (for the years 2004–2009) demonstrated that 67% of all injuries were sprains and strains, and that number increased to 89% among exercise injuries. Thirty percent of all injuries were reported to have resulted in lost time on the job (10).

Kaplan-Meier analyses (data not shown) indicated that the incidence rate for injury decreased and the median time to injury increased with increasing age (stratified into 10-year categories) ($P < 0.001$). There were no significant differences identified between sexes; however, women accounted for only 5% of the study population (as is common for the fire service (15)). Increases in body fat percentage were related to increased incidence rate, driven most notably by those in the highest tier (>36% body fat).

Table 3 displays the general summary characteristics of the incidence of injury outcomes for VO_{2max} levels and repeated measures modeling. Log-rank tests indicated that there were statistically significant increases in incidence rate with a decline in VO_{2max} for each of the 3 injury outcomes. In addition, persons with lower VO_{2max} levels were likely to sustain any injury sooner than were those who were more fit, as indicated by a median time to injury of 2.24 years in level III (least fit category) compared with 4.07 years for level I (most fit category; $P < 0.001$).

Table 2. Annual Frequency of Injury Outcomes, Tucson, Arizona, 2005–2009

Year	No. of Employees	No. of Recorded Injuries	No. of Sprains and Strains	No. of Exercise-related Injuries[a]
2005	577	128	84	30
2006	625	148	100	50
2007	659	174	120	62
2008	694	199	128	81
2009	667	124	89	45

[a] Of all exercise-related injuries, 85.2% were sprains and strains.

Cox proportional hazard modeling

Results from Cox proportional hazards models are presented in Table 4. The dependent variables in these models utilized time to first injury as a function of fitness. The hazard ratios for fitness are shown with respect to 2 modeling strategies: 1) VO_{2max} adjusted for age and sex and 2) VO_{2max} adjusted for other measures of fitness (i.e., resting heart rate, grip strength, flexibility, body fat percentage, number of continuous sit-ups and push-ups, age, and sex). With a hazard ratio of 0.959 for all injuries, a 1-mL/kg/minute increase in VO_{2max} decreased the risk of injury 0.041 times ($P < 0.001$). The amount of work needed to complete a given task in relation to the amount of energy expended during 1 minute of seated rest is referred to as the metabolic equivalent of task. For VO_{2max}, a single metabolic equivalent of task is approximately 3.5 mL/kg/minute. Thus, these results suggest that improving one's aerobic capacity by 1 metabolic equivalent of task would reduce the risk for any injury by approximately 14%.

Table 5 shows the relationship between the categorical levels of aerobic fitness (VO_{2max}) for the repeated measures analyses. For each injury outcome, persons with a lower fitness status (e.g., level III) had a higher hazard ratio for injury than did those in the most-fit category. For example, persons with a VO_{2max} between 43 and 48 mL/kg/minute (level II) were 1.38 times more likely to sustain any injury than were those in the top category of VO_{2max} (>48 mL/kg/minute). The risk of injury increased with decreasing fitness level, as those with a VO_{2max} less than 43 mL/kg/minute (level III) were 2.2 times more likely to have any injury than were those in the top VO_{2max} fitness category. The hazard ratios were also found to

Table 3. Time-to-Event Summary Statistics Between Fitness Levels and Injury Outcomes, Tucson, Arizona, 2005–2009

Fitness Level[a]	Injury Type								
	All Injuries			Physical Exercise			Sprains and Strains		
	IR[b]	No. at Risk	Years at Risk[c]	IR	No. at Risk	Years at Risk	IR	No. at Risk	Years at Risk
I	17.5	460	921	7.3	532	1116	12.2	482	996
II	21.1	287	442	7.2	332	541	17.2	312	483
III	29.9[d]	235	338	13.3[d]	263	407	25.1[d]	242	355

Abbreviation: IR, incidence rate.

[a] The relative aerobic capacity for each level was as follows: I, >48 mL/kg/minute; II, 43–48 mL/kg/minute; and III, <43 mL/kg/minute.

[b] Incidence rate per 100 person-years.

[c] Contributed time at risk (person-years).

[d] Statistical significance ($P < 0.05$) between levels using log-rank test for equality of survival functions.

be greater when the event outcome was restricted to time to first reported sprain or strain.

Effect modification

To assess the potential of effect modification of the relationship by age, a simple age-stratified analysis was completed for all injury outcomes, as well as for sprains and strains. Age proved to be a significant modifier of $V\mathrm{O}_{2max}$ ($P < 0.001$). Table 6 presents the crude hazard ratios for the all-injury model and the sprain and strain model in relation to age (<30 and ≥30 years of age) and overall, stratified by aerobic fitness level. For both outcome types, the risk of injury among those with decreased $V\mathrm{O}_{2max}$ was higher in persons younger than 30 years of age than in those 30 years of age or older. Thirty years of age was chosen as our demarcation value primarily based on incidence rates resulting from the Kaplan-Meier analysis described above. In addition, persons 30 years of age or younger had a consistently increased incidence rate, regardless of the injury type. Our previous descriptive study of injury distributions demonstrated that firefighters (median age, 31 years) sustained the most injuries (30.7%), with lower injury rates for engineers, paramedics, captains, etc. (10). Given the strong relationship between age and rank and the results from Kaplan-Meier estimates, it seemed suitable to use 30 years of age as our cutoff value for assessing potential effect modification.

DISCUSSION

In the present study, we sought to better understand the association between levels of aerobic fitness and the incidence of injury using a retrospective occupational cohort. The findings were consistent with our original hypothesis that lower fitness levels, as defined by $V\mathrm{O}_{2max}$, would be associated with increased risk of injury. Furthermore, these increased risks were modified by age, with a larger association between fitness level and subsequent injury in those 30 years of age or younger. The reduction in injury risk was significant for all injuries, sprains and strains, and physical exercise injuries. These findings are especially noteworthy considering that one third of work-related injuries in this population resulted from exercise activities (10), further indicating the need for fitness programs with improved structure and management relevant to the high physical demands of the job.

A number of studies have assessed the relationship between various measures of fitness and the performance of a given task, with varying results. However, in contrast to our present study, few studies have focused on assessing the association among fitness, performance, and injury risk.

Two published studies have demonstrated an increase in injuries associated with fitness or the implementation of fitness programs (9, 16). After a baseline treadmill test to assess $V\mathrm{O}_{2max}$, participants of the Aerobic Center Longitudinal Study had their physical activity levels assessed over a

Table 4. Cox Proportional Hazard Models for Assessing Aerobic Fitness and Risk of Injury, by Injury Type, Tucson, Arizona, 2005–2009

Injury Outcome	Model					
	$V\mathrm{O}_{2max}$[a]			$V\mathrm{O}_{2max}$ Full Model[b]		
	No. of Observations	HR	95% CI	No. of Observations	HR	95% CI
All[c]	716	0.959	0.946, 0.972	710	0.953	0.939, 0.968
Exercise-related	718	0.960	0.941, 0.979	714	0.953	0.933, 0.973
Sprains and strains	718	0.952	0.937, 0.967	712	0.947	0.932, 0.963

Abbreviations: CI, confidence interval; HR, hazard ratio; $V\mathrm{O}_{2max}$, relative aerobic capacity.

[a] Adjusted for sex and age.

[b] Includes independent variables: resting heart rate, grip strength, flexibility, % body fat, number of sit-ups performed, number of push-ups performed, age, and sex.

[c] There were fewer subjects in this category because of lacerations that occurred during the first clinic visit, which precluded follow-up for those subjects.

Table 5. Hazard Ratios[a] for Injuries by Levels Aerobic Fitness in Repeated Measures Modeling, Tucson, Arizona, 2005–2009

$V\text{O}_{2max}$ Level[b]	All Injuries ($n=716$)		Exercise Injuries ($n=718$)		Sprains and Strains ($n=718$)	
	HR	95% CI	HR	95% CI	HR	95% CI
I		Referent		Referent		Referent
II	1.38	1.06, 1.78	1.20	0.81, 1.77	1.61	1.21, 2.13
III	2.22	1.72, 2.88	2.53	1.76, 3.64	2.63	1.98, 3.50

Abbreviations: CI, confidence interval; HR, hazard ratio, $V\text{O}_{2max}$, relative aerobic capacity.
[a] All models were adjusted for sex and age.
[b] The relativeaerobic capacity for each level was as follows: I, >48 mL/kg/minute; II, 43–48 mL/kg/minute; and III, <43 mL/kg/minute.

12-month period (16). Increased risk of musculoskeletal injury was associated with increases in cardiorespiratory fitness (as measured by a treadmill test), as well as increases in the amount of reported weekly physical activity. Stratified analyses by physical activity type suggested that the association between cardiorespiratory fitness and musculoskeletal injury was potentially driven by unmeasured intensity levels of exercise. After instituting a new fitness program among United States Air Force service members to increase fitness and participation in fitness-related activities, the mean relative $V\text{O}_{2max}$ increased significantly (6.04 and 3.24 mL/kg/minute among men and women, respectively) over 3 years of the program (9). The number of injuries also increased during that time, which was likely a result of increased participation in exercise activities with no embedded injury prevention program.

Two studies failed to find an association between fitness and injuries. During an 8-week basic military training regimen, musculoskeletal injuries were assessed in relation to baseline body composition (or body mass index), aerobic fitness (determined by the time participants took to run 3,000 meters), health assessment measures, and age (17). Significant associations were observed at a univariate level between injury and a variety of variables, including age greater than 23 years, increased body mass index, slow run times, and dysfunction of back or lower limbs. Multivariate logistic regressions showed no relationship between injury and aerobic fitness level; however, increased body mass index, minor back and lower limb dysfunctions, and mental dysfunctions were predictive of injury. In a study of manual material handlers, McSweeney et al. (18) found no difference between exercisers and nonexercisers in terms of the likelihood of reporting an injury. However, the authors noted that increased or regular exercise was likely to reduce absenteeism occurrence and duration. In another study among male material handler employees at 3 separate facilities, no association was observed between injury occurrence and absolute aerobic capacity; however, a significant increase in injury risk was related to a decreased $V\text{O}_{2max}$, in addition to increased body fat percentage (19). It is important to note that none of the studies described above used repeated measures of fitness, unlike the present study. The added strength of being able to capture time-series data for the population increased statistical power of our study and our ability to control for confounding effects both within and across cohort members.

Table 6. Age-Stratified Hazard Ratios[a] for All Injuries and Sprains and Strains by Fitness Level, Tucson, Arizona, 2005–2009

Fitness Level by Injury Type[b]	Total		Age <30 Years		Age ≥30 Years	
	HR	95% CI	HR	95% CI	HR	95% CI
All injuries						
I		Referent		Referent		Referent
II	1.38	1.06, 1.78	2.28	1.41, 3.71	1.15	0.85, 1.57
III	2.22	1.72, 2.88	3.43	2.10, 5.58	1.86	1.36, 2.53
Sprains and strains						
I		Referent		Referent		Referent
II	1.61	1.21, 2.13	2.27	1.32, 3.90	1.40	1.00, 1.95
III	2.63	1.98, 3.50	4.48	2.63, 7.64	2.10	1.49, 2.96

Abbreviations: CI, confidence interval; HR, hazard ratio.
[a] All models were adjusted for sex and age within the strata.
[b] The relative aerobic capacity for each level was as follows: I, >48 mL/kg/minute; II, 43–48 mL/kg/minute; and III, <43 mL/kg/minute.

Results from our study indicated that there was a modification of injury risk based on age of the person. In particular, younger employees (30 years of age or younger) with a VO_{2max} below that of the high fit group (i.e., VO_{2max} <48 mL/kg/minute) had a higher risk of injury than did their older, less fit counterparts. This effect modification may be due to changes in job rank (and presumably job duties and exposure to external conditions) with increasing age in firefighters. Typically, younger personnel hold the rank of firefighter, whereas promotion or career progression tends to lead into ranks of paramedic, engineer, and captain. For most emergency responses, firefighters are the first to enter an emergency scene and are thus subject to greater hazards, known and unknown emergent threats, and time-limiting stresses. One exception includes the risks to which paramedics are exposed during calls involving advanced life support. Nevertheless, the hazard profile and exposure risk for those with the rank of firefighter can be considered greater than those of their team counterparts (e.g., engineer, captain, chief).

Limitations

Although injury events that occurred before the first observed clinic visit were removed to avoid left-censoring bias (a product of data merging), there was no knowledge of previous injury history. In addition, analyses were restricted to the first specified injury event; therefore, recurrent injuries were not assessed. Future studies on recurrent injuries should enhance the understanding of injuries in this population by differentiating between the risks of repeated injuries (i.e., the same injury type suffered multiple times by a person) and those of the repeatedly injured (i.e., persons who suffer from multiple injury types). The data assessed for this study also did not permit evaluation of intrinsic factors, such as central motor control (i.e., balance), skeletal abnormalities, alignment of joints, and ligamentous laxity (3–5, 20–29). Ideally, inclusion of these factors would improve future studies (30–32), as intrinsic risk factors each influence local anatomy and biomechanical limitations.

Although VO_{2max} is linearly related to heart rate and energy expenditure, it is an indirect measurement of an person's maximal capacity to do work aerobically (33). In the present study population, VO_{2max} was estimated using a submaximal test protocol that was previously validated and has been used widely in the fire service (13). Two recent studies, however, have indicated the potential for submaximal tests to overestimate true aerobic capacity (34, 35). If true, any overestimation of VO_{2max} should not influence the regression modeling because the potential bias would be nondifferential. Of note, the distribution of VO_{2max} values in our study is considered higher than that in the general population. Standard fitness assessments classify midrange ("good") aerobic fitness at 40 years of age to be 35–38 mL/kg/minute for women and 42–45 mL/kg/minute for men (2). The notion that firefighters are more fit than the general population is supported by the characteristics of this study's firefighting population, who had an average age of 39 years and a mean VO_{2max} of 49.6 mL/kg/. These differences are likely due to the use of an employed population and the active nature of the job. As previously mentioned, the cutoff values established for the aerobic fitness levels in these analyses were based on the range of distributions within this active population in addition to methods used in other research.

When compared with the results from a previous study that described exercise-related injuries, which accounted for one third of all reported injuries, as the most common (10), the present findings may appear somewhat counterintuitive. It was not clear if the injuries sustained during exercise periods were the result of overexposure (i.e., fit people exercising too intensely or for too long while on duty) or if the types of exercises being completed were not appropriately structured and evaluated in an effort to minimize the chances for overexertion. The present study's results regarding increased risks of injury among those deemed less fit suggests that the structure and management of exercise within the fire service needs to be considered more intently and that employees without a physical training background should not necessarily be left to exercise without some level of appropriate programming, training, and oversight. Most professional fire departments promote or require some level of exercise among their employees in an effort to assure their ability to complete job tasks with high physical demands (e.g., rescues). Persons in the fire service, much like the majority of the general population, can benefit from exercise instruction and from resources aimed at maintaining or improving their functional fitness levels, thus reducing the potential injury loss. Given the limited financial and personnel resources, a challenge for all fire departments (and similar occupational settings) will be determining the best measures for assessing each component of functional fitness that are 1) consistent and reliable and 2) feasible for implementation.

Conclusions

Findings from the present study provide empirical evidence that lower fitness levels are associated with increased risks of injury among career fire service employees. Furthermore, these increased risks were modified by age, which is likely due to the fact that rank, job task, and risk profile are often associated with age in this population. As injuries continue to be of relevant health concern in the fire service, the contribution of fitness to the likelihood of injury is significant. Given that injuries are often the result of a multitude of factors and the efficiency of every response activity in the fire service is dependent on the health and fitness of those responders, comprehensive and multifaceted solutions need to be devised, applied, and distributed in order to prevent further injury loss.

ACKNOWLEDGMENTS

Author affiliations: Division of Epidemiology and Biostatistics, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, Arizona (Gerald S. Poplin, Denise J. Roe, Robin B. Harris); Center for Applied Biomechanics, School of Engineering and Applied Sciences, University of Virginia, Charlottesville, Virginia (Gerald S. Poplin); and Division of Community, Environment and Policy, Mel and

Enid Zuckerman College of Public Health, Tucson, Arizona (Wayne Peate, Jefferey L. Burgess).

This work was supported by grant 5R01OH009469 from the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

We thank Emily Scobie, Becky Arnold, and all employees of WellAmerica, who deserve our utmost gratitude for their enduring efforts throughout this project.

The contents of this article are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

Conflict of interest: none declared.

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Firefighter Fitness: Improving Performance and Preventing Injuries and Fatalities

Denise L. Smith, PhD

Abstract
Firefighting is dangerous work. Each year, approximately 80,000 firefighters are injured and about 100 firefighters lose their lives in the line of duty. Firefighters face multiple dangers in the course of their work; they encounter toxic fumes, dangerous products of combustion, high radiant heat loads, and a chaotic work environment. Despite the myriad dangers, the leading cause of line-of-duty death among firefighters is sudden cardiac event, accounting for approximately 45% of duty deaths. Firefighting requires high levels of aerobic fitness, anaerobic capacity, and muscular strength and endurance; however, data suggest that many firefighters do not possess high aerobic or anaerobic capacity. Furthermore, many firefighters are overweight and have one or more modifiable risk factors for cardiovascular disease. The safety of the public and the health and safety of firefighters would be enhanced if firefighters followed well-designed fitness programs to improve overall health and fitness.

Introduction

Firefighters perform strenuous work in hostile, chaotic, and unpredictable conditions. Thus, firefighting is widely recognized as dangerous work. In 2009, there were 1.35 million fires in the United States, resulting in 3,010 civilian deaths, 17,050 civilian injuries, and an estimated total property loss of $12.5 billion (25). There are approximately 1.2 million firefighters in more than 30,000 departments providing local communities with protection from fire and other hazards. Roughly 29% of the U.S. Fire Service is made up of career, paid firefighters, while the remaining 71% are volunteer firefighters (25).

Firefighters are a unique occupational group, and they face multiple dangers in the course of their work; firefighters encounter toxic fumes, dangerous products of combustion, high radiant heat loads, and a chaotic work environment. In addition to hazards encountered at the scene of a fire, firefighters also perform rescues, extrications, emergency medical system (EMS) calls, and respond to natural disasters and hazardous materials spills. Attesting to the dangerous nature of the job, approximately 80,000 firefighters are injured on the job each year. More than 40% of the injuries occur on the fireground, despite the fact that firefighters spend a very small percentage of their time engaged in fire suppression activities. When expressed relative to the type of call they are responding to, approximately 23 to 25 firefighters are injured per 1,000 fires, whereas only 0.6 to 0.7 injuries occur per 1,000 non-fire emergencies (24).

Firefighting also results in approximately 5.7 firefighter fatalities per 100,000 structure fires (13). A retrospective study, performed between 1995 and 2004, revealed that 1,006 firefighters had died in the line of duty during that period. Approximately 45% of those fatalities were the result of cardiovascular events. While most people recognize that firefighting is dangerous, many believe that fire or the products of combustion account for most of the fatalities in the Fire Service. As seen in Figure 1, the percentage of fatalities attributed to sudden cardiac events far outnumbers the deaths due to burn or asphyxiation on a consistent basis.

Physical Demands of Firefighting

Firefighting involves a unique set of stressors (Fig. 2). Firefighters perform strenuous muscular work; they must climb stairs and ladders, carry and use heavy tools, often above their head or in awkward positions, and they may be called upon to perform difficult rescue operations. Firefighters work in dangerous environments; they encounter extreme temperatures, toxic smoke (including carbon monoxide and hydrogen cyanide), and chaotic conditions that include loud noise and low visibility. Further, this work must be done with time urgency and is often performed under the psychological stress of knowing that civilians are

Professor of Health and Exercise Sciences, Skidmore College, Health and Exercise Sciences, Saratoga Springs, NY; Research Scientist, University of Illinois, Fire Service Institute, Champaign, IL

Address for correspondence: Denise L. Smith, PhD, Professor of Health and Exercise Sciences, Skidmore College, 815 N. Broadway, Saratoga Springs, NY 12866 (E-mail: dsmith@skidmore.edu).

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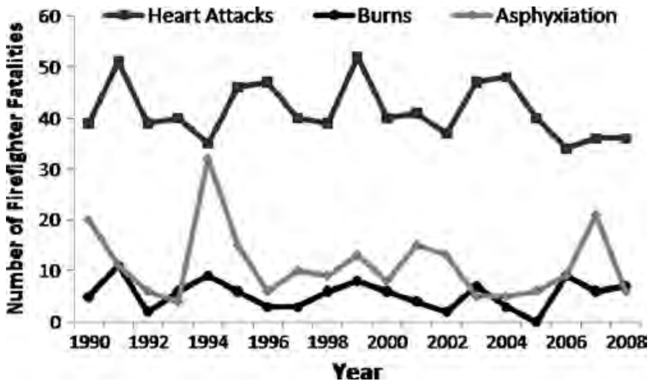

Figure 1: Firefighter casualty statistics from 1990 to 2008. Based on data from The National Fire Protection Association (NFPA).

in imminent danger. Additionally, firefighters must perform their work while wearing personal protective equipment (PPE), equipment that is necessary to protect the firefighter but that also imposes a considerable physiological burden because of its weight, insulative properties, and restrictiveness. The unique set of stressors that are encountered during firefighting results in substantial physiological strain, particularly to the thermoregulatory and cardiovascular systems.

Physiological Strain of Firefighting

Considering the work that is done and the environment in which it is performed, firefighting is among the most arduous work that humans undertake. Not surprisingly then, firefighting affects every system of the body. Figure 3 summarizes some of the major effects of firefighting on the body.

While firefighting results in significant physiological strain affecting nearly every system of the body, statistically the greatest risks to the firefighter come from the cardiovascular and thermal strain associated with firefighting. Strenuous firefighting activities lead to near maximal heart rates (HR) that can remain elevated for extended periods of time (1,38). Stroke volume decreases following strenuous firefighting activity (38). Firefighting may result in high blood pressures that quickly drop below resting values following cessation of work (21).

Firefighting is associated with profuse sweating and hence a decrease in plasma volume. A 15% reduction in plasma volume has been reported after 18 min of strenuous firefighting drills (38). The decrease in plasma volume contributes to the reduction in stroke volume noted above and leads to hemoconcentration. Hemoconcentration causes a change in blood electrolytes and increases blood viscosity (39). Platelet number increases (more than can be explained by hemoconcentration) and platelet aggregability increases following firefighting activity (41).

Given that firefighters wear heavy, insulative PPE that often weighs in excess of 22 kg and are called upon to perform strenuous muscular work in very hot environments, it is no surprise that firefighting leads to thermal strain. Challenges to the thermoregulatory system include elevated core temperature (hyperthermia) and dehydration. Hyperthermia and dehydration are very serious problems in the Fire Service because these twin challenges can hasten the onset of fatigue and limit work time, add to cardiovascular strain, lead to fatal heat illnesses (including heat stroke), impair cognitive function, and increase the risk of injury.

Core temperature increases rapidly but does not reach drastically high levels during short-term firefighting. Periods of 18 to 20 min of firefighting have been reported to cause an average increase in body temperature of 1.5 to 2.5°F (21,40). Prolonged firefighting or repeated evolutions of training would cause greater elevations in body temperature. Firefighting, like other strenuous activity, leads to fatigue. The fatigue may be due to neural, metabolic, or muscular factors and is likely hastened by work in the heat. Fatigue can impair the firefighting mission and may increase susceptibility to injury.

Performance Requirements

Firefighting requires high levels of aerobic fitness, anaerobic capacity, and muscular strength and endurance. Additionally, given the detrimental effects of excess body fat, firefighters also should possess an appropriate body composition. Several studies have attempted to quantify the aerobic

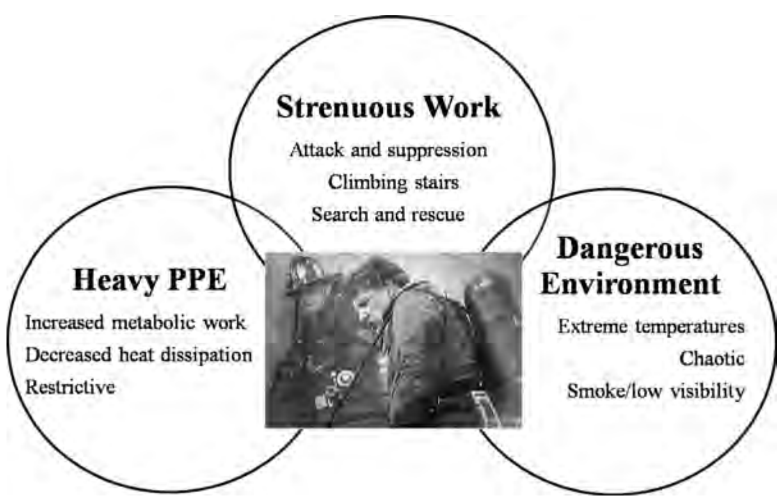

Figure 2: Unique job stressors. Stressors associated with firefighting include strenuous muscular work, heavy personal protective equipment (PPE), and a hot and dangerous environment.

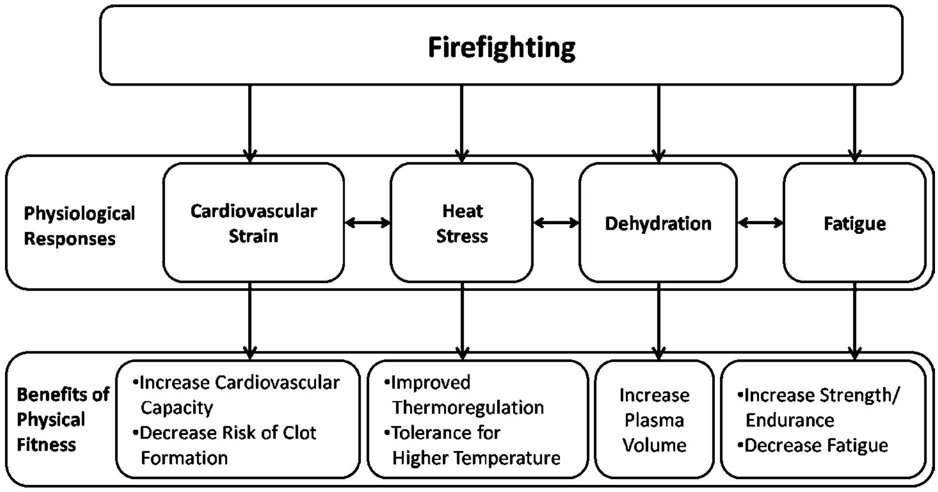

Figure 3: Primary physiological responses to firefighting and the benefits of physical fitness. Firefighting results in considerable physiological strain. A well-designed fitness program provides multiple benefits and helps prepare the firefighter for the demands of firefighting.

requirements of firefighting. A limitation to all of these studies is that they "simulate" firefighting activity. Further, the work that must be performed varies greatly based on the work assignment (*e.g.*, officer, venting, advancing a charged hose line, performing a rescue). Studies have reported the estimated oxygen consumption associated with firefighting to range between 33.6 and 49.0 $mL \cdot kg^{-1} \cdot min^{-1}$ (17,26,28,44). Sothmann and colleagues (1990) devised a simulated set of firefighting drills that took approximately 9 min to complete (44). The participants had an average $\dot{V}O_{2max}$ of 39.9 $mL \cdot kg^{-1} \cdot min^{-1}$ and worked at approximately 76% of their $\dot{V}O_{2max}$ to complete the simulated drills (44). To validate a minimum $\dot{V}O_{2max}$ requirement, the researchers recruited another group of firefighters ($\dot{V}O_{2max}$ range 26–51 $mL \cdot kg^{-1} \cdot min^{-1}$) and had them perform the fire-suppression drills. Seven of 10 firefighters with a $\dot{V}O_{2max}$ of 33.5 to 41.0 $mL \cdot kg^{-1} \cdot min^{-1}$ were able to successfully complete the drills within the allotted time. All participants with a $\dot{V}O_{2max}$ greater than 41 $mL \cdot kg^{-1} \cdot min^{-1}$ were able to complete the fire-suppression activities within the acceptable timeframe. Based on research findings, the National Fire Protection Association (NFPA) Standard on Occupational Medical Programs for Fire Departments recommends that firefighters have a minimal aerobic capacity of 42 $mL \cdot kg^{-1} \cdot min^{-1}$ (metabolic equivalent of task score, 12) (31).

Firefighters also must have a high anaerobic capacity to perform certain job tasks. Strenuous firefighting relies on anaerobic energy sources (in addition to aerobic sources) and high lactate values (6–13 mmol) have been reported following demanding firefighting simulations (2,17,26).

Muscular strength and endurance also are important to meet the physical demands placed on firefighters. Muscular strength and endurance are necessary for forcible entry, advancing the fire hose, chopping tasks, and victim rescues. Sothmann and colleagues (2004) have sought to validate minimally acceptable standards for muscular strength and endurance necessary to successfully perform firefighting tasks (43). Participants completed a simulated set of firefighting tasks and a battery of tests of physical abilities. The researchers found that physical ability tests (hose drag/high rise pack carry, arm lift, and muscle endurance) combined to significantly predict performance time on the simulated firefighting tasks. Rhea and colleagues (2004) investigated the relationship between several fitness scores and job performance (assessed by performance time on a simulated hose pull, dummy drag, stair climb, and hose hoist) (34). These authors reported high correlations between measures of muscular strength, muscle endurance, anaerobic performance, and performance times.

Fitness Profile of U.S. Firefighters

Given the heterogeneous nature of the U.S. Fire Service, it is difficult to get an accurate, generalizable assessment of the "typical" firefighter. Firefighter fitness profiles are likely to vary greatly depending upon region of the country, career or volunteer status, the age of the firefighter, and the hiring, medical, and fitness policies of the department.

Aerobic Capacity

Despite the physically demanding aspects of the job, several studies have reported that firefighters do not possess above-average aerobic capacity. Again, caution must be used when interpreting the literature because many articles report fitness values on a small number of firefighters, from a single department or small group of departments. Furthermore, many of the aerobic fitness values reported in the literature are based on submaximal exercise tests. In general, reported aerobic fitness values for firefighters range from 35 to 56 $mL \cdot kg^{-1} \cdot min^{-1}$ (9,35,37,49). An early study that randomly sampled 150 firefighters from a large metropolitan city found that aerobic capacity significantly decreased from the 20- to 25-yr-old group (47.7 $mL \cdot kg^{-1} \cdot min^{-1}$) to the 30- to 35-yr-old group (37.9 $mL \cdot kg^{-1} \cdot min^{-1}$) and from the 35-yr-old group to the 40- to 45-yr-old group (31.5 $mL \cdot kg^{-1} \cdot min^{-1}$). In each case, however, the firefighters' aerobic capacity was similar to that predicted for sedentary individuals (37). In contrast, Davis and colleagues (2002) studied a small municipal fire department on the West Coast and found that firefighters in the 20- to 29-yr age group had an aerobic capacity of 55.9 $mL \cdot kg^{-1} \cdot min^{-1}$ and that the oldest group, 50–59 yr, had an oxygen uptake of 40.4 $mL \cdot kg^{-1} \cdot min^{-1}$ (9). In every decade-group, the firefighters' aerobic capacity was higher than age-predicted values (9). While it is tempting to hope that the improvements in aerobic capacity cited in the more recent study reflect positive changes relative to fitness patterns among the Fire Service, other evidence suggests that firefighters possess modest aerobic capacity (7,9,49). A study of over 100 recruit firefighters in a metropolitan fire department found that recruit firefighters entered the fire service with an aerobic capacity of 35 $mL \cdot kg^{-1} \cdot min^{-1}$ (9). Encouragingly, the study went on to document a 28% increase in aerobic capacity following a 16-wk fitness program.

Muscular Strength and Endurance

In general, firefighters have high levels of muscular strength and endurance (2,9,29,34,35,43). Muscular strength and endurance are necessary to perform common firefighting activities, such as carrying ladders, advancing charged hose lines, and using heavy equipment. Firefighters rely on upper- and lower-body strength to perform their jobs. Further, core muscular strength also may serve to reduce the incidence of injuries (48). The high level of strength reported in the fire service also may reflect cultural values within the Fire Service.

Obesity

There is considerable evidence of a high prevalence of obesity among U.S. firefighters (7,12,16,42,46,50). Clark and colleagues (2002) investigated the body mass index (BMI) and health status of a group of municipal firefighters and reported that 80% of the firefighters were overweight or obese and that there was a significant increase in systolic blood pressure, diastolic blood pressure, cholesterol, and triglycerides as firefighters increased in fatness category (7). Conversely, $\dot{V}O_{2max}$ and METS decreased with increasing fatness (7). A study involving a large group of career firefighters (N = 332) found that at baseline testing, 53% of firefighters were overweight (BMI between 25 and 29.9), with an additional 35% classified as obese (BMI $\geq$ 30). Additionally, obese firefighters were more likely to have hypertension and low levels of high-density lipoprotein-cholesterol (42). A study of more than 100 career and volunteer firefighters with no known history of cardiovascular disease, stationed throughout Illinois, found an average BMI of 28.1 and that 75% of the participants had a BMI greater than 25 (12). Furthermore, Fahs and colleagues (2009) reported that increased BMI was associated with increased arterial stiffness (12). In addition to the high prevalence of overweight and obesity in the Fire Service, there is evidence that firefighters are getting heavier over time. Soteriades *et al.* (2005) found that over a 5-yr follow-up period, the prevalence of obesity increased from 35% to 40%, and the proportion of firefighters with extreme obesity increased fourfold (from 0.6% to 2.4%) (42).

Cardiovascular Risk

Most studies that have compared the overall cardiovascular mortality of firefighters with the general public have found that firefighters do not have an increased risk for cardiovascular death, except in instances where the careers of firefighters included significant time on the job before the use of respiratory protection (11). Studies in Boston, Connecticut, New Jersey, San Francisco, Seattle, Edmonton/Calgary and Florida all have found no association between cardiovascular mortality and occupation (3,10,14,18,27,30,36,47). Similarly, a recent review found that firefighters have similar risk profiles for obesity, hypertension, and hyperlipidemia compared with the general population (11).

Mismatch Between Fitness Demands and Fitness Profiles

Given that so much of a firefighter's time is sedentary, perhaps it is not surprising that they do not differ from the general population in fitness, obesity, or other cardiovascular risk factors. However, considering that their work is punctuated by periods of intense activity, these risk profiles may explain why sudden cardiac events are the leading cause of line-of-duty deaths among firefighters; essentially, there is a mismatch between the fitness and health requirements of strenuous firefighting and the current fitness profile of the U.S. Fire Service.

Fitness Recommendations

Current standards **recommend** that firefighters participate in a fitness program (22,32), but it is the responsibility of each individual department to determine whether to institute a fitness program. The NFPA 1583 Standard recommends a program that is positive, nonpunitive, and does not set fitness standards. Of the 440 firefighter fatalities investigated by the National Institute of Occupational Safety and Health (NIOSH) during the period from 1995 to 2004 (44% of fatalities during that period; 440 of 1,006), 39% of the departments offered a voluntary fitness program, but only 8% had mandatory participation (33).

Cardiovascular events are by far the leading cause of line-of-duty deaths among firefighters. Additionally, cardiac events are disproportionately related to fire suppression activities, with firefighters having a 10- to 100-fold increased risk of experiencing a fatal cardiac event after fire suppression versus normal duties at the station (23). Thus firefighters should have a high level of cardiovascular fitness in order to improve performance and decrease the risk of on-the-job fatalities associated with strenuous activity. Additionally, nearly 80,000 firefighters are injured each year, with a large percentage of these injuries occurring during fireground operations. Clearly, fitness has an important role to play in preparing firefighters for the strenuous activity they encounter during firefighting activity. Appropriate fitness programs can enhance overall health, improve performance, and lessen the risk of firefighter injury or fatality. Firefighters and the public they serve will benefit from more fitness programming in the Fire Service.

Fitness Prescription for Firefighter Health and Safety

Firefighting is strenuous physical work and places considerable strain on the body. In order to meet the unique physical demands of firefighting and to perform firefighting in a safe manner, firefighters must be physically fit. Like soldiers and elite athletes, firefighters should be physically prepared to meet the unique physical challenges they face. Figure 3 depicts the direct ways in which a fitness program can mitigate against the physiological strain of firefighting.

Fitness prescriptions for firefighters must meet certain criteria in order to adequately serve the U.S. Fire Service. Prescriptions need to address the unique and specific physiological demands of firefighting. This is difficult to accomplish because of the current diversity in fitness and health status of firefighters. Fitness prescriptions must recognize the unique structure and culture of volunteer and career fire departments. These prescriptions also must include individual and progressive programs to meet the individual needs of low-fit to highly-trained firefighters.

Aerobic Training

Aerobic training provides several health benefits, including improved body composition, serum lipids, glucose metabolism, and maximal aerobic capacity (20). While moderate-intensity aerobic exercise (50%–70% HR_{max}) is widely recommended for health benefits, research suggests that higher-intensity aerobic exercise training may promote weight loss and cardiovascular improvements to a greater extent (8). Given the physical demands of firefighting, and the high proportion of line-of-duty deaths attributed to cardiac events, it is essential that a training program for firefighters include endurance training.

Sprint Interval Training (SIT)

SIT is a type of high-intensity interval training (HIT) that is designed to improve endurance, increase anaerobic threshold, and improve maximal performance. This type of training has been shown to be effective at increasing aerobic capacity (6), improving endurance capacity when working at 80% of aerobic capacity (4), enhancing aerobic metabolism (19), and increasing muscle glycogen content and the maximal activity of citrate synthase (5). Given the effectiveness and efficiency of these workouts and the degree to which they mimic actual energy expenditure during an emergency, it is reasonable to include SIT in exercise prescriptions for firefighters. However, given the high intensity of the workouts and the heterogeneity of fitness levels in the Fire Service, it may be prudent to initiate exercise programs at a lower intensity and increase progressively.

Functional Training

Functional training targets movements that are necessary for activities of daily living (45). Functional training utilizes full-body, dynamic movements to increase muscular strength and endurance as well as aerobic capacity using equipment such as medicine balls, physioballs, and exercise bands to provide resistance. This type of exercise mimics the high-intensity demands of firefighting. In fact, functional training workouts have been gaining popularity among progressive Fire Departments. CrossFit workouts are now embraced by many members of the Fire Service.

Resistance Training

Resistance training increases muscle mass and function. Muscle strength and endurance routinely have been found to predict performance on simulated firefighting activities and are unquestionably important for firefighters. Additionally, resistance training is associated with a decreased risk of all-cause mortality, the development and maintenance of lean muscle mass, and enhanced glucose metabolism (15,20). Resistance training should be part of every firefighter's fitness program. Not only will it improve work capacity, it is likely to provide protection against injuries, especially muscular strains, on the fireground.

Lifestyle Modifications

There must be a cultural change within the U.S. Fire Service in order to improve fitness and decrease injuries and cardiac events. Changes should include a fitness program designed to improve aerobic capacity, muscle strength and endurance, and functional capacity. The fitness program and a sound dietary plan also should seek to promote healthy weight for firefighters. The development of a social support system with adequate leadership and incentives should promote healthy lifestyle changes. Each individual firefighter and Fire Department must set short- and long-term goals that are realistic and measureable as well as easy to implement within the constraints of space, equipment, and other duties.

Conclusion

Firefighting is strenuous and dangerous work with a unique set of stressors. In order to meet the physical demands of firefighting, firefighters must be physically fit. Firefighters who possess high levels of cardiovascular and muscular fitness are better able to serve the public by performing their job more effectively. Fit firefighters have increased mobility, energy, and endurance, allowing them to better perform job duties efficiently and safely, and fit firefighters also are less likely to jeopardize the safety of their fellow firefighters or the public they serve.

The safety of the public and the health and safety of firefighters would be greatly enhanced if firefighters followed well-designed fitness programs to improve overall health and fitness. Exercise scientists can play an important role in enhancing firefighter's fitness, thereby improving public health and safety. Specific fitness programs that meet the needs of a broad range of individuals within the Fire Service must be developed that are tailored to the specific job requirements that firefighters face. These fitness programs should be geared toward improving health, safety, and performance. In order to be adopted, these programs must be sensitive to the diverse needs in the Fire Service.

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ARTICLE

Cardiovascular Strain of Firefighting and the Risk of Sudden Cardiac Events

Denise L. Smith[1,2], Jacob P. DeBlois[1], Stefanos N. Kales[3,4], and Gavin P. Horn[2]

[1]Health and Exercise Sciences, Skidmore College, Saratoga Springs, NY; [2]University of Illinois Fire Service Institute, Champaign, IL; [3]Department of Environmental Health, Harvard TH Chan School of Public Health, Boston, MA; [4]Occupational Medicine, Cambridge Health Alliance/Harvard Medical School, Cambridge, MA

SMITH, D.L., J.P. DEBLOIS, S.N. KALES, and G.P. HORN. Cardiovascular strain of firefighting and the risk of sudden cardiac events. *Exerc. Sport Sci. Rev.*, Vol. 44, No. 3, pp. 90–97, 2016. *Approximately 45% to 50% of line-of-duty deaths in the fire service are caused by sudden cardiac deaths, which most often occur during or shortly after firefighting duties. We present a theoretical model linking the cardiac, vascular, and hematological responses of firefighting to the triggering of sudden cardiac death in susceptible individuals.*

Key Words: firefighting, cardiac, vascular, coagulatory, cardiovascular disease, sudden cardiac death.

Key Points

- The leading cause of duty-related death within the fire service is a sudden cardiac event, accounting for approximately 50% of line-of-duty deaths.
- Sudden cardiac events are much more likely to occur after firefighting activities than other duties and may be the result of primary arrhythmias or myocardial infarction.
- Firefighting leads to significant cardiovascular strain, including alterations in cardiac function, vascular function, and hemostasis.
- Most firefighters recover from the stress of firefighting without incident. However, the cardiovascular strain of firefighting may trigger a cardiovascular event in firefighters with an underlying disease.
- Increased cardiac work, vascular dysfunction, tissue ischemia, and a procoagulatory state may be important causal links that increase the risk of sudden cardiac events in the vulnerable firefighter.

Club

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INTRODUCTION

Firefighters respond to multiple types of emergencies, such as fires, vehicle/machinery accidents, medical calls, calls for public assistance, technical rescue, and hazardous materials spills to protect the communities they serve. However, statistics show that firefighting (*i.e.*, those activities directly related to fire suppression) results in the greatest risk of injury or fatality (8). Firefighting activities often are conducted in immediately dangerous to life or health conditions that may expose firefighters to extreme environmental temperatures and to multiple chemical and particulate hazards. These conditions necessitate that firefighters wear heavy, insulated, and restrictive personal protective equipment (PPE). Hence, it comes as no surprise that firefighting results in high levels of cardiovascular strain.

Fire service statistics reveal that despite all the acute traumatic risks that firefighters face (*e.g.*, burn injuries, smoke inhalation, structural collapse), by far, the leading cause of line-of-duty death is cardiac related. In fact, approximately 45% to 50% of all firefighter duty–related fatalities are caused by sudden cardiac death (SCD) — a proportion that is relatively stable and stubbornly high. This point is highlighted in Figure 1, which compares SCD with fatalities from burns and asphyxiation since 1990. The number of cardiac fatalities seems to be trending downward during the past 10 years. This encouraging trend may be caused by efforts by the International Association of Firefighters, the International Association of Fire Chiefs, and the National Volunteer Fire Council, all of which have undertaken rigorous campaigns to increase medical evaluations and to promote firefighter wellness and fitness. However, as the numbers indicate, considerable work remains to further reduce cardiac fatalities in the US Fire Service (Fig. 1).

Importantly, sudden cardiac events are disproportionately more likely to occur during or after a firefighting activity than other duties. Although firefighters spend a small percentage of their time (1%–5%) engaged in fire suppression activities, more

Address for correspondence: Denise L. Smith, Ph.D., Health and Exercise Sciences, Skidmore College, 815 North Broadway, Saratoga Springs, NY 12866 (E-mail: dsmith@skidmore.edu).
Accepted for publication: February 29, 2016.
Associate Editor: Bo Fernhall, Ph.D., FACSM

0091-6331/4403/90–97
Exercise and Sport Sciences Reviews
DOI: 10.1249/JES.0000000000000081

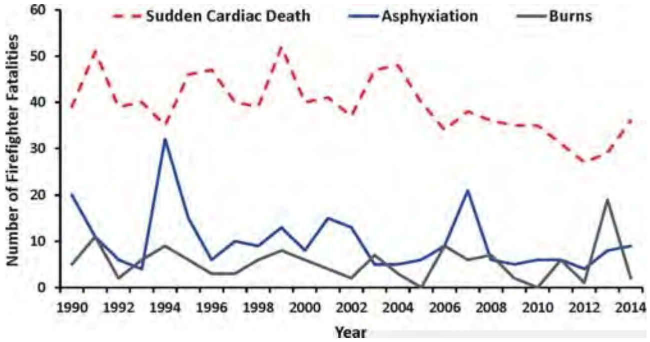

Figure 1. Line-of-duty deaths by major cause since 1990.

than 30% of cardiac fatalities occur during or shortly after firefighting activity, resulting in a 10 to 100 times greater risk of sudden cardiac events after firefighting versus station duties (19). Furthermore, there are approximately 17 to 25 duty-related nonfatal cardiovascular events (heart attacks and strokes) for every fatal event (8,15).

Cardiac events are devastating for individual firefighters and their families, but because firefighting relies on a coordinated team effort, duty-related cardiac events also can jeopardize job performance and the safety of other firefighters and may compromise the ability of firefighters to protect civilians during emergencies. Cardiac injuries likewise often will require significant time away from the fire department at significant cost and burden to the local fire department. Hence, there is an important public safety concern about cardiovascular events in the fire service. We recently have published a review that proposed a theoretical model highlighting the interaction of occupational, medical, and behavioral risk factors in contributing to underlying cardiovascular disease (CVD) (coronary heart disease (CHD) and/or structural heart disease) and where the strenuous duties of firefighting may trigger a cardiovascular event (Fig. 2) (32). In the current review, we extend the previous model by detailing results of translational research documenting the cardiovascular strain of firefighting and further highlighting the potential mechanisms by which cardiovascular responses to firefighting may lead to pathophysiologic changes that can trigger fatal arrhythmias or myocardial infarction, thus leading to a sudden cardiac event (Fig. 3).

FACTORS AFFECTING THE CARDIOVASCULAR STRAIN OF FIREFIGHTING

Firefighting involves performing a complex series of physically demanding tasks under psychologically stressful conditions within arduous environments. As depicted in Figure 3, the cardiovascular strain of firefighting results from multiple interacting factors including 1) sympathetic nervous system activation; 2) the strenuous physical work (aerobic and anaerobic); and 3) exposure to environmental conditions and pollutants contained in fire smoke.

Sympathetic Nervous System Activation

Sympathetic nervous activation begins with the alarm and continues throughout a fire call. The sudden sounding of an alarm increases psychological/mental stress, activating the sympathetic nervous system. While on the call, sympathetic activation continues because the fire scene is a dynamic cluttered environment in which fire behavior can change rapidly and where loud noises, time urgency, and potential danger produce powerful sympathetic arousal. Several studies have shown a fivefold to sevenfold risk of sudden cardiac events *during alarm response* versus nonemergencies (19,20). The increased relative risk of a cardiac event during this period can be attributed largely to sympathetic arousal and a putative surge in catecholamines because there is not yet exposure to the fire environment or the requirements for large amounts of physical work.

Physical Work

Structural firefighting requires a combination of static work and aerobic exertion, such as stair and ladder climbing (while

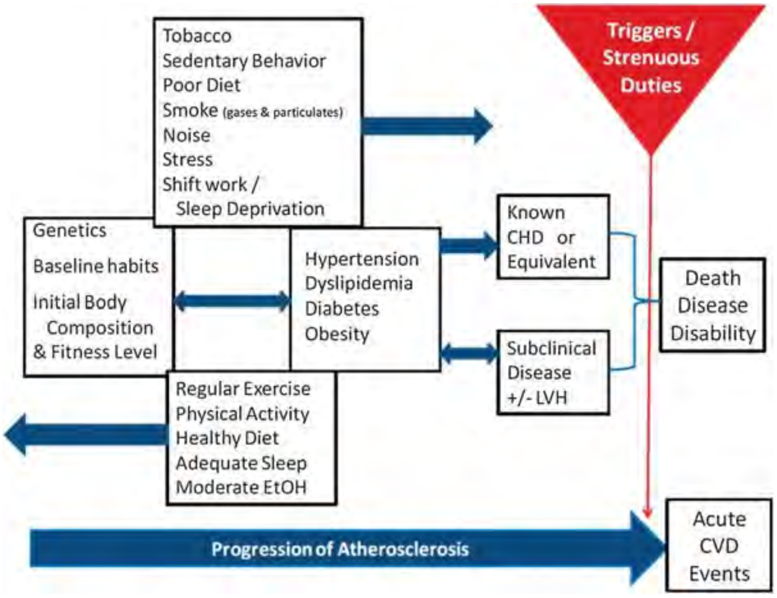

Figure 2. Theoretical model of occupational, medical and behavioral risk factors that contribute to sudden cardiac events following firefighting activities. Note that there is overlap between occupational and lifestyle risk factors. Arrows indicate that factors can be associated with progression or regression of risk factors and subclinical disease. EtOH, alcohol; CHD, coronary heart disease; LVH, left ventricular hypertrophy; CVD, cardiovascular disease. (Reprinted from (32). Copyright © 2011 Wolters Kluwer Health. Used with permission.)

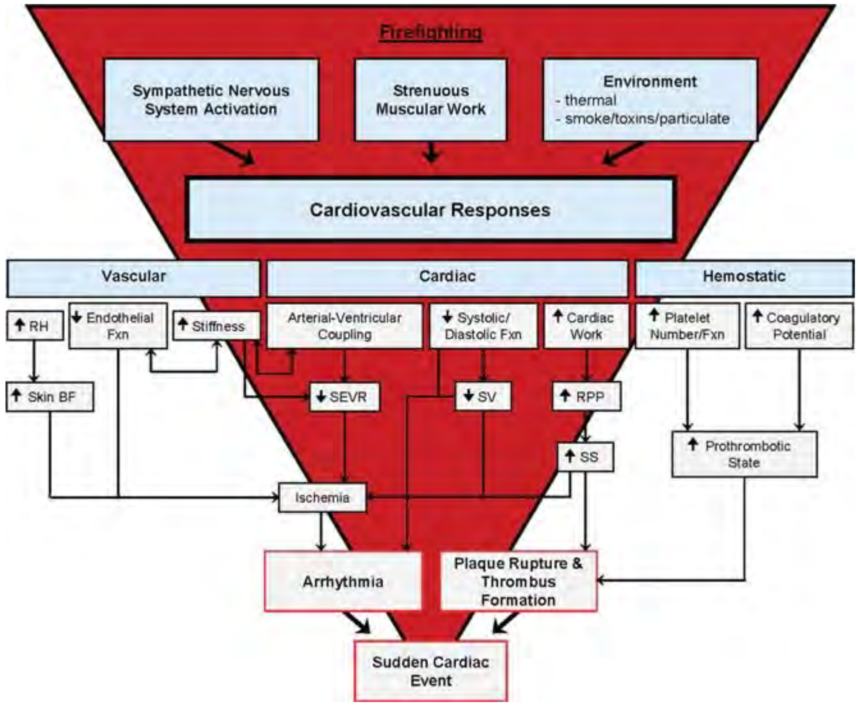

Figure 3. Theoretical interplay between cardiac, vascular, and hemostatic responses to firefighting and sudden cardiac events in susceptible individuals. RH, reactive hyperemia; BF, blood flow; Fxn, function; SEVR, sub-endocardial viability ratio; SV, stroke volume; RPP, rate pressure product; SS, shear stress.

carrying heavy equipment), forcible entry, victim search and rescue, building ventilation, and fire attack and suppression. Although it is known that different firefighting tasks require different levels of energy expenditure, firefighting often results in oxygen consumption of greater than of 40 $mL \cdot kg^{-1} \cdot min^{-1}$ (24). The strenuous work of firefighting is performed while wearing heavy (≥25 kg) and fully encapsulating PPE that provides range-of-motion restrictions, heavy insulation, and limited breathability and adds to the metabolic demands of firefighting. In addition, firefighters perform a great deal of upper body work (lifting and carrying heavy equipment, hose movement and control, chopping, ceiling overhaul), and upper body work (such as wood chopping or snow shoveling) leads to an exaggerated blood pressure response and an increased cardiac work and is associated with an increased risk of a sudden cardiac event (12).

Environmental Conditions

Radiant heat from a fire adds considerably to the heat stress experienced by firefighters. We have reported an increase in core temperature (T_{co}) of approximately 1.5°C after short-term (≤20 min) firefighting activity (30), and the rate of T_{co} change increased with subsequent firefighting activities (17). Both heat stress and dehydration exacerbate cardiovascular strain associated with heavy work (9).

Although firefighters regularly use self-contained breathing apparatus to protect their airways while operating inside the structure, firefighters routinely are exposed to fire smoke (outside of the structure and during overhaul/cleanup operations), which contains toxic and asphyxiant gases such as carbon monoxide, hydrogen cyanide, hydrogen sulfide, and particulate matter among a myriad of other chemicals (5). When inhaled, carbon monoxide reduces the availability of oxygen, thus, potentially resulting in tissue hypoxia. Tissue hypoxemia caused by carbon monoxide and other asphyxiants (*e.g.*, hydrogen cyanide, hydrogen sulfide) may lead to myocardial ischemia in susceptible individuals. Fire smoke also contains particulate matter associated with the promotion of arrhythmias, decreased heart rate variability, and increased blood pressure (23). Such particulates also may increase the formation of free radicals leading to activation of proinflammatory and prothrombotic pathways that may cause endothelial dysfunction and increased blood coagulability.

CARDIOVASCULAR RESPONSES TO FIREFIGHTING

Firefighting operations are complex, and no fire scene is identical to another. The magnitude of the cardiovascular strain is affected by the fuel that is burning (*e.g.*, heat release rate, products of combustion), the size of the fire (amount of fuel involvement), dimensions and layout of the structure, the resources (human and equipment) that are available to fight the fire, the tactics that are used (*e.g.*, interior, exterior, or combination attack), and the firefighter's assigned task. For example, a firefighter who is responsible for operating the pump on the engine at a small fire would have a different level of cardiac strain than a firefighter who is performing search and rescue activities on the interior of a large structure during fire suppression activities. The following sections detail research efforts to characterize systematically the effects of firefighting on the various components of the cardiovascular system — the heart, vasculature, and hemostatic system.

Cardiac Responses

During strenuous fire suppression activities, heart rates (HR) increase and rise to maximal or near maximal levels and T_{co} increases rapidly (18,29). Studies that have focused on long-term firefighting activities that require more than 1 cylinder of air (supporting heavy firefighting work for approximately 12–16 min) have shown that the rate of increase in T_{co} is augmented in later bouts of activity, further exacerbating cardiovascular strain and leading to higher HR (17). HR responses to firefighting vary tremendously depending on the type of work the firefighter is doing and multiple other factors (ambient temperature, length of time engaged, fitness level, etc.). Furthermore, firefighters' HR vary throughout a given emergency because of the intermittent nature of the work (17).

Although HR is the most frequently documented cardiovascular variable because of its ease of measurement, alterations in other cardiac variables are likely even more important to describe the cardiovascular risk associated with firefighting. We have reported a 35% reduction in stroke volume (seated position) after three short bouts of strenuous firefighting activity that lasted a total of approximately 20 min (29). More recently, we performed a full echocardiographic examination (supine position) before and after a 3-h training period that included multiple training evolutions/drills, each lasting approximately 15 to 30 min (11). The firefighting training resulted in near maximal HR (mean, 192 ± 15 beats min^{-1}) and an increase in T_{co} from 37.1 ± 0.5°C to 38.9 ± 0.6°C. Echocardiographic measurements were obtained within 30 min of firefighting, and mean HR had decreased to 90 ± 13 beats min^{-1} at the time of measurement. In this study, we found a 13% reduction in stroke volume (11). Furthermore, the repeated bouts of training resulted in significant reductions in left ventricular diastolic size and volume, transmitral flow velocities, mitral E/A (the ratio of passive ventricular filling to active atrial filling of the ventricle), and left ventricular shortening fraction and ejection fraction. The changes in left ventricular function observed in this study may reflect changes in preload after the firefighting activity. However, there is some evidence that intrinsic systolic and diastolic function also may be depressed after firefighting activity. TDI-E′, an indicator of rate of ventricular relaxation, decreased by 19% when measured at the lateral wall but was unchanged when measured at the septal wall (11). The decline in the lateral wall TDI-E′ is a marker of lusitropic function that is less load dependent than other measures of diastolic function. Although the clinical significance of the cardiac changes presented above are not fully comprehended, it is important to consider these changes in the context of overall cardiovascular function, especially given that these results were noted in apparently healthy firefighters with no known CVD. Indeed, this study found that, in addition to decreased left ventricular function, there was a decrease in systemic arterial compliance (11). These findings raise the possibility that arterial-ventricular coupling may be altered with firefighting and reinforces the importance of investigating vascular function after firefighting.

Vascular Responses

The myocardium and vasculature work together in a concerted effort to deliver blood to body tissues. Changes in vascular function and/or the interaction between the myocardium and the vasculature may lead to tissue ischemia/hypoxia, precipitating a sudden cardiac event. We have conducted several studies to investigate the effects of firefighting activities and heat stress on the vasculature and its function.

Yan *et al.* (35) reported changes in arterial-ventricular coupling after repeated bouts of firefighting during a 3-h period of live-fire training in a group of young (28 ± 1 yr) firefighters. Arterial-ventricular coupling was measured on the right common carotid artery using wave intensity analysis, a hemodynamic index in which changes in blood pressure and blood flow provide insights into cardiovascular stress (25). In response to live-fire training, wave 1 amplitude, an indicator of cardiac contractility, was reduced by approximately 28%, suggesting that systolic function decreased (35). In a laboratory study designed to further investigate the role of heat stress in changing arterial-ventricular coupling, Smith *et al.* (26) examined 11 young (22 ± 3 yr) men before and after a 100-min exercise/rest treadmill task (alternating 20-min walk/20-min rest in structural firefighting PPE) and found a nearly 32% increase in wave 2 amplitude. This measure of end-systolic/early-diastolic ventricular function from wave intensity analysis indicates increased afterload on the myocardium after heat stress (26).

We also have examined the influence of firefighting on vascular structure and function. Fahs *et al.* (6) examined the acute effects of live-fire training drills on arterial stiffness and limb blood flow in a group of 69 male firefighters (mean age, 28 ± 1 yr). After 3 h of live-fire training, hemodynamic proxies (wave reflection time and augmentation index) influenced by aortic stiffness increased by approximately 3%. Despite a possible increase in aortic stiffness, a concomitant increase in peripheral forearm vascular conductance (80%) and hyperemia (32%) also were observed (6). It is suggested that the unique combination of thermal, metabolic, psychological, and mental stress that occurs with firefighting activities might explain the increased aortic stiffness and forearm blood flow.

As a follow-up to live-fire studies, Lefferts *et al.* (22) conducted a laboratory-based study to isolate the influence of thermal stress on vascular and central hemodynamic changes. Controlling for hydration status, Lefferts *et al.* (22) reported that exercise-induced moderate heat stress (T_{co} of 37.8 ± 0.1°C caused by treadmill walking in firefighting PPE) did not change aortic stiffness (pulse wave velocity, pre: 5.0 ± 0.1 $\text{m}\cdot\text{s}^{-1}$ vs post: 4.9 ± 0.1 $\text{m}\cdot\text{s}^{-1}$; P = 0.698). However, Lefferts *et al.* (22) did find alterations in myocardial work demands (rate-pressure product increased by 37%) and an indirect proxy of coronary perfusion (subendocardial viability ratio (SEVR) reduced by about 27%). After a short 18-min bout of live-fire activity, Horn *et al.* (18) found a larger increase in rate-pressure product (80%–95%) and similar reductions in SEVR (30%–35%). These results, although they must be interpreted cautiously given limitations with SEVR, suggest a potential mismatch between myocardial oxygen demand and supply, which may result in ischemia during strenuous work in the heat. This potential mismatch may be more pronounced after firefighting activities than exercise-induced heat stress.

Thus, firefighting activity and heat stress may result in vascular dysfunction and arterial-ventricular uncoupling as evidenced by increased central arterial stiffness, decreased vascular function, and a myocardial oxygen supply-demand mismatch. A potential linkage between vascular alterations and the risk of SCD may be related to firefighters' individual characteristics. We have found increased arterial stiffness in a group of obese (≥29.5 $\text{kg}\cdot\text{m}^{-2}$) and overweight (25.9–29.4 $\text{kg}\cdot\text{m}^{-2}$) firefighters compared with lean (<25.9 $\text{kg}\cdot\text{m}^{-2}$) firefighters, where carotid artery β stiffness was greatest in the obese group compared with the overweight and lean groups (5.9 ± 0.3, 5.1 ± 0.3, and 4.9 ± 0.3, respectively) (7). Furthermore, we also have examined vascular changes in older firefighters (40–60 yr) before and after firefighting activity and found that reactive hyperemia, a measure of microvascular blood flow, and pressure-controlled arterial stiffness (central pulse wave velocity/aMAP) increased significantly after firefighting (21). The cause of increased vascular stiffness after firefighting is not known. The increased central vascular stiffness observed after firefighting activities could be a compensatory mechanism to counteract the profound skin vasodilation in an attempt to facilitate blood flow to the heart and brain or it could reflect a detrimental response to the stressors encountered during firefighting. Additional studies are necessary to better understand the cause and consequences of arterial stiffness and to elucidate what populations of firefighters who, through underlying disease or CVD risk factors, may have a greater risk of experiencing acute vascular changes that may result in SCD.

Because changes in vascular function may be caused by reactive oxygen species or prostaglandin production, we had conducted studies that used antioxidant supplementation or aspirin. We have investigated the effect of vitamin C supplementation on vascular responses to firefighting in young healthy firefighters and found that 2 g of vitamin C did not affect measures of vascular stiffness or microvascular function (6). We also have investigated the effect of aspirin supplementation on vascular changes associated with firefighting in older subjects and found that 2 wk of aspirin supplementation did not affect microvascular (reactive hyperemia) or macrovascular (arterial stiffness/central blood pressure) responses to firefighting (21).

Collectively, research has shown that firefighting and exercise-induced heat stress lead to vascular alterations, specifically, reduced vascular reactivity/endothelial function (6) and increased central arterial stiffness (7,22), which may play roles in arterial-ventricular uncoupling in response to firefighting activity and heat stress (26,35). The uncoupling of the arterial-ventricular system may explain the oxygen supply-demand mismatch observed after firefighting and exercise-induced heat stress (22), leading to ischemia. Increased arterial stiffness after firefighting may be detrimental because of increased cardiac work (increased afterload) or impaired vascular function (compromised vasodilation), and this effect is likely more pronounced in individuals with underlying CVD. Furthermore, overweight/obese and older firefighters may be at increased risk for abnormal vascular responses associated with firefighting and heat stress because the vasculature of these persons is stiffer at rest without the external influence of occupational stressors (7).

Hemostatic Responses

Firefighting leads to an increase in blood pressure and sweating. Accordingly, we have documented a decrease of approximately 15% in plasma volume after an 18-min bout of firefighting (30). In turn, this resultant hypovolemia decreases central venous pressure, causes hemoconcentration, and increases blood viscosity.

Firefighting likewise seems to disrupt hemostatic balance. We conducted a large study (N = 114) to examine the acute effects of firefighting on platelet number and function. Live-fire firefighting drills (~18 min) caused a modest change in T_{co} (0.7°C) and a peak HR of 167 beats min^{-1} and resulted in increased platelet number and decreased platelet closure time (increased aggregation) in young (29 ± 8 yr) apparently healthy firefighters (31). In a follow-up study, we evaluated the effects of firefighting activities on platelets, coagulation, and fibrinolytic activity and documented the extent to which these variables recovered 2 h after completion of the firefighting activity in young (25 ± 5 yr) apparently healthy firefighters (27). Platelet number, platelet activity, and coagulatory potential increased immediately after firefighting, and many variables (platelet function, activated partial thromboplastin time (aPTT) and factor VII) continued to reflect a procoagulatory state even after 2 h of recovery. Fibrinolysis also was enhanced immediately after firefighting but returned to baseline values 2 h after firefighting. Research with athletes has similarly indicated that strenuous physical activity acutely increases platelet number and platelet activation (4) and leads to a hypercoaguable state that is normally offset by simultaneous increases in fibrinolysis (16). This hypercoaguable state persists longer into the postactivity recovery period than does the increase in fibrinolysis, potentially reflecting a "vulnerable period" after strenuous exercise (16). In situations of abnormal hemostatic balance, the exercise-induced procoagulatory state may result in increased incidence in cardiovascular events during and immediately after strenuous physical activity. These data support the hypothesis that firefighting leads to a hemostatic imbalance that is primarily prothrombotic during the recovery period from firefighting activities.

INDIVIDUAL CHARACTERISTICS AND UNDERLYING CVD RISK

As we have summarized in a previous review (32), individual factors may mediate the magnitude of the cardiovascular strain of firefighting. Although firefighting results in significant cardiovascular strain, most firefighters recover from firefighting activities with no untoward event. However, the cardiovascular strain of firefighting interacts with an individual's health and fitness status to determine whether responses to the strain of firefighting are limited to transient physiologic disruptions or result in the activation of pathophysiologic pathways that may lead to sudden cardiac events (32). Underlying cardiovascular health status is determined largely by the prevalence of cardiovascular risk factors. As shown in the Table, such risk factors greatly increase the risk of cardiac death in the fire service, with smoking, hypertension, diabetes, and old age all associated with a greatly elevated risk. However, the greatest risk was associated with previous CHD diagnosis (32). In addition, low fitness also likely contributes to the increased risk of sudden cardiac events (2) because fit individuals can do more work at the same level of cardiovascular strain or they experience less strain at the same level of work. Unfortunately, there is substantial evidence that firefighters often lack high levels of fitness and a large pecentage are overweight or obese (2,7,32).

A potential linkage between vascular alterations and the risk of SCD also may be related to individual factors, including obesity. Obesity (body mass index (BMI), ≥30 $kg \cdot m^{-2}$) is a global epidemic affecting all members of society, including first responders. In the fire service, obesity has been found to increase the relative risk of an on-duty coronary heart disease fatality threefold (32). Obesity is a well-established risk factor for CVD and has been associated with reduced arterial function and increased aortic blood pressures (10). We examined the influence of body weight on vascular structure and function in a group of 110 firefighters (30 ± 8 yr). Firefighters were evenly

TABLE. Relative risk of cardiovascular outcome by risk factor in firefighters

	On-Duty CHD Fatalities, OR (95% CI) (20)	Non-CHD Cardiovascular Retirements, OR (95% CI) (16)	CHD Retirements, OR (95% CI) (16)
Current smoking	8.6 (4.2–17)	2.5 (1.2–5.1)	3.9 (2.5–6.2)
Hypertension	12 (5.8–25)	11 (6.1–20)	5.4 (3.7–7.9)
Obesity, BMI ≥30 $kg{\cdot}m^{-2}$	3.1 (1.5–6.6)	3.6 (2.0–6.4)	1.4 (0.96–1.93)
Cholesterol ≥5.18 $mmol{\cdot}L^{-1}$ (200 $mg{\cdot}dL^{-1}$)	4.4 (1.5–13)	1.1 (0.51–2.24)	2.4 (1.6–3.6)
Diabetes mellitus	10.2 (3.7–28)	7.7 (2.9–20)	13 (6.1–28)
Prior diagnosis of CHD	35 (9.5–128)	NA	30 (9.1–96)
Age ≥45 yr	18 (8.5–40)	26 (13–51)	63 (35–111)

BMI, body mass index; CHD, coronary heart disease; CI, confidence interval; diabetes mellitus, defined as random blood glucose level more than 8.3 $mmol{\cdot}L^{-1}$ (150 $mg{\cdot}dL^{-1}$), previous diagnosis, or receiving insulin or hypoglycemic medications; hypertension, defined as resting blood pressure of 140/90 mm Hg or higher, previous diagnosis of hypertension, or receiving antihypertensive therapy; OR, odds ratio. (Reprinted from (32). Copyright © 2011 Wolters Kluwer Health. Used with permission.)

divided into tertiles according to BMI (<25.9, 25.9–29.4, and ≥29.5 $kg{\cdot}m^{-2}$). We found increased arterial stiffness in the obese (≥29.5 $kg{\cdot}m^{-2}$) and overweight (25.9–29.4 $kg{\cdot}m^{-2}$) firefighters compared with that in lean (<25.9 $kg{\cdot}m^{-2}$) firefighters (7). Furthermore, carotid artery β stiffness was greatest in the obese group compared with the overweight and lean groups (5.9 ± 0.3, 5.1 ± 0.3, and 4.9 ± 0.3, respectively). However, measures of endothelial function did not differ by BMI classification (7).

We also have investigated the effect of obesity on coagulatory response to acute firefighting activity (28). An 18-min bout of live-fire training caused a significant increase in coagulatory and fibrinolytic markers, including an overall shift toward a procoagulatory state, as evidenced by a decrease in aPTT and an increase in platelet activity. We also found that obese firefighters exhibited lower baseline levels of fibrinolytic activity (lower tissue plasminogen activator and higher plasminogen activator inhibitor-1), which is consistent with previous literature. However, contrary to our hypothesis, we did not detect an increase in baseline coagulatory measures in obese firefighters nor did we find a greater coagulatory response among obese firefighters. Additional research is necessary to better understand how age, body composition, fitness, and cardiovascular risk factors affect vascular-hemostatic balance after firefighting because it is known that the vascular-hemostatic responses to exercise differ between healthy individuals and those with underlying CVD or CVD risk factors (34).

TRIGGERING A CARDIOVASCULAR EVENT

Atherosclerosis and structural heart changes, such as left ventricular hypertrophy (LVH), generally develop during a period of many years — even decades. Although CVD may progress with or without symptoms for many years, a plaque rupture or arrhythmia can lead to the rapid onset of severe symptoms and even SCD. Understanding what precipitates, or triggers, such an event is of interest to researchers, clinicians, and those involved in health policy.

Classic studies have temporally linked heavy physical exertion/strenuous work (such as running or snow shoveling) to the onset of acute cardiovascular events, with the risk being concentrated among individuals who are unaccustomed to such levels of exertion (1,12). Sympathetic nervous activation caused by emotional stress, such as excitement and frustration/anger, also is associated with triggering cardiovascular events in individuals with known CHD (32). In addition, environmental conditions such as elevated levels of air pollution have been shown to be associated with increased rates of sudden cardiac events among susceptible individuals (23).

Although a series of complex pathophysiological processes are involved in SCD, pump failure usually caused by terminal cardiac arrhythmias is ultimately the cause of death. Terminal arrhythmias may be caused by a primary electrical conduction problem (primary arrhythmia) or as complications of plaque rupture and thrombus formation that causes a myocardial infarction. SCD can be caused by many underlying conditions; however, a very large percentage of SCD is caused by CHD (*i.e.*, atherosclerosis) and/or cardiomegaly/LVH (13,36).

Firefighting as a Trigger for Sudden Cardiac Events

The work of a firefighter is characterized by long periods of low-intensity work, such as inspection, chores, and public education, unpredictably punctuated by episodes of strenuous work. During these intense intervals, firefighting activity involves heavy muscular work and requires high levels of oxygen consumption. Thus, during firefighting, multiple stressors may function independently or more likely synergistically to precipitate acute CVD events among susceptible firefighters (32).

Multiple studies have provided compelling evidence that firefighting activities can trigger cardiovascular events in susceptible firefighters (19,20). These studies found highly elevated and remarkably consistent odds for SCD and other acute CVD events during emergency firefighting activities compared with nonemergency duties. The largest of these studies (19) investigated line-of-duty deaths (n = 449) attributed to CHD between 1994 and 2004 and found that, although firefighting (*i.e.*, active fire suppression) represents between 1% and 5% of a firefighter's annual working time, firefighting accounted for more than 30% of line-of-duty CHD deaths. This resulted in a relative risk of SCD during fire suppression of roughly 10 to 100 times the risk encountered during nonemergency duties (19).

The aforementioned physiological disruption and cardiac strain associated with firefighting do not normally pose a significant risk in healthy individuals. However, in susceptible individuals, the stress of firefighting can serve as a trigger for SCD. Most sudden cardiac events are likely caused by myocardial infarctions in individuals with CHD or fatal arrhythmias in individuals with CHD or cardiomegaly/LVH.

Coronary Heart Disease

Studies that have examined autopsy findings of firefighters who suffered SCD have found that roughly 90% of victims had evidence of coronary atherosclerosis (13,20). CHD is characterized by atherosclerotic plaque in the arterial wall, which is preceded by endothelial dysfunction as the onset of the atherosclerotic process. As the plaque progresses, it results in stenosis and can cause ischemia. Death from a myocardial infarction frequently involves the rupture of vulnerable plaque, exposing blood to underlying connective tissue that is highly thrombotic. Platelets begin to adhere to the vessel and aggregate to each other to form a plug. Ultimately, this may result in the formation of an occlusive thrombus that causes a myocardial infarction.

Firefighting leads to increased shear stress that may increase the risk of plaque rupture. Furthermore, firefighting increases platelet number and activity and leads to a procoagulatory condition that may make thrombus formation more likely. Thus, although most firefighters recover from the cardiovascular strain of firefighting without incident, an individual with underlying atherosclerotic plaque, especially vulnerable plaque, is at a greatly increased risk of plaque rupture and thrombus formation during firefighting activity.

Cardiomegaly/LVH

Cardiomegaly (increased heart size and mass) and LVH (increased wall thickness and mass) are structural abnormalities that increase the risk of SCD caused by arrhythmia. LVH is a powerful predictor of cardiovascular morbidity and mortality in population-based studies (3), and there is a strong graded association between left ventricular mass and increased cardiovascular risk (14). LVH is frequently associated with fatal arrhythmias (33). Research has found that the increased risk associated with LVH is independent of other factors such as age, sex, smoking status, diabetes, and serum cholesterol. In a majority of cases, LVH is typically a result of hypertension with or without obesity and/or CHD. Obstructive sleep apnea, which also is commonly associated with hypertension and obesity, is another risk factor for LVH. In cases of firefighting SCD, CHD and LVH are frequently comorbid (13,20,36). Myocardial fibrosis is thought to be an important mediator of increased risk of SCD associated with LVH, although the precise mechanisms by which LVH causes cardiovascular morbidity and mortality are not fully understood. However, vascular changes, such as increased arterial stiffness, altered wave reflections and arterial-ventricular uncoupling may lead to the development of LVH.

A recent retrospective study found that cardiomegaly/LVH is a frequent cause of SCD in the general public and is highly associated with obesity and death at a younger age than CHD (33). There is mounting evidence that LVH/cardiomegaly is common among US firefighters and plays a major role in CVD events in the fire service. Kales *et al.* (20) conducted a case-controlled investigation of on-duty CHD fatalities and found evidence for LVH in 76% of the CHD deaths where the autopsy results were available. Subsequently, a larger follow-up case-fatality study was conducted to compare firefighters succumbing to on-duty CHD fatalities with firefighters suffering nonfatal CHD events leading to retirement. Among the fatalities, LVH/cardiomegaly was mentioned in summary reports of almost 60% of the available autopsies (13). In addition, Yang *et al.* (36) studied younger (<45 yr) firefighters and found a greater than 100-g difference in heart weight among SCD cases compared with trauma fatality controls. Furthermore, approximately 66% of cardiac cases had evidence of cardiomegaly (heart weight, >450 g), and this conveyed a fivefold increase in relative risk of SCD. These studies provide convincing evidence that LVH/cardiomegaly plays a role in a large percentage of firefighter fatalities.

As illustrated in Figure 3, firefighting may lead to several cardiac and vascular changes that increase the risk of arrhythmia, particularly in individuals with underlying vascular dysfunction and/or structural heart abnormalities. Obviously, firefighting leads to increased cardiac work. Furthermore, our research suggests that firefighting also leads to increased arterial stiffening and decreased arterial compliance. The combination of increased cardiac work and decreased arterial compliance may lead to ischemia that could provoke an arrhythmia, particularly in individuals with underlying CHD and/or structural heart changes that include myocardial fibrosis, which likely increases susceptibility to electrical abnormalities.

CONCLUSIONS

The proposed model suggests that the cardiovascular strain associated with firefighting may trigger a sudden cardiac event in a susceptible person through several biological pathways. Increases in shear stress may cause rupture of vulnerable plaque, resulting in thrombus formation and the occlusion of coronary arteries, which may be exacerbated by hypercoagulability that is known to increase the risk of thrombotic events. Alternately, acute risks encountered during firefighting activities may increase the risk of fatal arrhythmias. Ischemia (caused by an increase in myocardial oxygen demand that exceeds myocardial supply) may result in electrical, mechanical, and biochemical dysfunction of the cardiac muscle. Exposure to environmental conditions (such as gaseous and particulate toxicants in smoke) also may increase susceptibility to arrhythmias (23), particularly in those with LVH and other forms of cardiomegaly or in the context of ischemia.

Additional research is necessary to better understand how individual characteristics affect the cardiovascular responses to firefighting and the precise mechanisms by which firefighting leads to an increased risk of fatal arrhythmias and plaque rupture. Additional research also is needed to identify the types of physical fitness training programs that provide the greatest potential for reducing the risk of sudden cardiac events in the fire service. Firefighters accept great risks to protect their communities. Exercise professionals have a unique opportunity to help improve the health of this remarkable occupation, which is so important to our public safety.

Acknowledgments

The authors express their appreciation to Steve Ives and Kevin Heffernan who provided a review of the manuscript.
D. L. Smith and J. P. DeBlois were supported by FEMA-AFG EMW-2013-FP00749.

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Sritharan et al. Environmental Health (2017) 16:124
DOI 10.1186/s12940-017-0336-z

Environmental Health

REVIEW

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Prostate cancer in firefighting and police work: a systematic review and meta-analysis of epidemiologic studies

Jeavana Sritharan[1,2*], Manisha Pahwa[1], Paul A. Demers[1,2,3,4*], Shelley A. Harris[1,4,5], Donald C. Cole[4] and Marie-Elise Parent[6]

Abstract

Objectives: We conducted a systematic review and meta-analysis to evaluate potential associations between firefighting and police occupations, and prostate cancer incidence and mortality.

Methods: Original epidemiological studies published from 1980 to 2017 were identified through PubMed and Web of Science. Studies were included if they contained specific job titles for ever/never firefighting and police work and associated prostate cancer risk estimates with 95% confidence intervals (CI). Study quality was assessed using a 20-point checklist. Prostate cancer meta-risk estimates (mRE) and corresponding 95% CIs were calculated for firefighting and police work separately and by various study characteristics using random effects models. Between-study heterogeneity was evaluated using the I^2 score. Publication bias was assessed using Begg's and Egger's tests.

Results: A total of 26 firefighter and 12 police studies were included in the meta-analysis, with quality assessment scores ranging from 7 to 19 points. For firefighter studies, the prostate cancer incidence mRE was 1.17 (95% CI = 1.08–1.28, I^2 = 72%) and the mortality mRE was 1.12 (95% CI = 0.92–1.36, I^2 = 50%). The mRE for police incidence studies was 1.14 (95% CI = 1.02–1.28; I^2 = 33%); for mortality studies, the mRE was 1.08 (95% CI = 0.80–1.45; I^2 = 0%). By study design, mREs for both firefighter and police studies were similar to estimates of incidence and mortality.

Conclusion: Small excess risks of prostate cancer were observed from firefighter studies with moderate to substantial heterogeneity and a relatively small number of police studies, respectively. There is a need for further studies to examine police occupations and to assess unique and shared exposures in firefighting and police work.

Keywords: Firefighters, Police, Occupation, Prostate cancer risk, Incidence, Mortality, Meta-analysis, Systematic review, Epidemiology

Background

Prostate cancer is one of the most commonly diagnosed cancers in men worldwide but its etiology remains poorly understood [1–5]. The only established risk factors for prostate cancer are older age, positive family history of prostate cancer, and African-American ethnicity [1, 2, 4, 5]. There is some evidence linking prostate cancer to differences in socioeconomic status, increased height, increased obesity, reduced physical activity, and active smoking and alcohol use [3, 5–10]. There is growing evidence that occupation may be a risk factor, and previous studies have shown increased risks associated with employment in agriculture/farming, management and administration, rubber production, metal work, and transportation [11–13]. Some studies have also suggested associations between prostate cancer risk and employment in protective services occupations [11, 12, 15–17].

Protective services occupations include firefighting, police, military, and other groups (eg. security guards). Previous epidemiological studies have demonstrated consistent associations between firefighting and different

* Correspondence: jeavana.sritharan@occupationalcancer.ca; paul.demers@cancercare.on.ca
[1]Occupational Cancer Research Centre, Cancer Care Ontario, 525 University Avenue, Toronto, ON M5G 2L3, Canada
Full list of author information is available at the end of the article

types of cancer, with some evidence for prostate cancer [14]. In 2007, the International Agency for Research on Cancer (IARC) classified firefighting as "possibly" carcinogenic to humans (IARC Group 2B) [16]. IARC's evaluation was based on evidence from 42 epidemiological studies, including two previous meta-analyses on firefighting and cancer [14, 18]. Based on studies published at the time, IARC evaluated multiple cancer sites and identified statistically significant increased risks of prostate cancer, testicular cancer, and non-Hodgkin lymphoma [16]. Since the IARC evaluation, 11 new studies have been published that included assessments of prostate cancer risk in firefighters. Relatively less is known about prostate cancer risk in police occupations, as this group is often understudied and findings have been inconsistent [11, 12, 15, 19, 20].

Only one meta-analysis, published over a decade ago, focused on firefighting and cancer risks that included prostate cancer [14]. This study found a significant association with prostate cancer incidence (summary risk estimate: 1.28, 95% CI: 1.15–1.43) based on evidence from 6 cohort studies [14]. Recently, a narrative review examined cancer risk in police work. Eight studies reported on prostate cancer risk in police work, with mixed findings [15]. The objective of the present systematic review and meta-analysis was to evaluate the quality of the epidemiological evidence on firefighting and police employment in association with prostate cancer incidence and mortality, and to conduct a quantitative synthesis. Based on the availability of epidemiologic literature, this meta-analysis focused on firefighting and police work, and not protective services as a whole.

Material and methods

Search strategy

A search was conducted on PubMed and Web of Science to identify epidemiological studies published between January 1980 and December 2017 in English or French about employment in firefighting and police occupations, and risk of prostate cancer. Various combinations of MeSH terms were used to search for studies that included firefighter and police occupations (firefighting OR firefighter OR fire fighter OR fire OR police OR police officer OR policeman OR policemen) and that reported on associations with prostate cancer risk (prostate OR prostate neoplasm OR neoplasm OR cancer). Cited references in individual papers and review papers that resulted from the search were used to identify any additional studies.

Inclusion criteria

To be included in the meta-analysis, articles must have reported results for original case–control or cohort studies that contained specific job titles related to ever/never firefighting and police work and that examined associated prostate cancer incidence and/or mortality using any type of relative risk estimator (hazard ratio (HR), odds ratio (OR), relative risk (RR), standardized mortality ratio (SMR), or standardized incidence ratio (SIR)) with corresponding 95% confidence intervals. Reviews, meta-analyses, editorials, and experimental studies were excluded. For any articles with overlapping study populations, only the most recently published study with prostate cancer incidence and/or mortality results was included. Furthermore, studies were excluded if reported risk estimates were only based on internal comparisons between different occupational groups rather than based on comparisons to the general population. Titles and abstracts were initially screened for eligibility, and for those eligible, full-text articles were reviewed.

Data extraction

Information on author(s), date of publication, title, country of study, study design, number of cases/deaths and controls/non-cases, data collection method, effect sizes and 95% CIs for prostate cancer, and covariates was extracted from and tabulated for each study included in the meta-analysis. Effect sizes and 95% CIs recorded from included studies were for ever vs. never firefighter or police employment in models that were adjusted for the maximum number of potentially confounding variables.

Quality assessment

The quality of each study included in the meta-analysis was independently assessed by two authors (JS and MP) using a modified quality assessment checklist by Downs and Black [21]. Checklist items that were irrelevant to observational studies were omitted, resulting in a maximum of 20 achievable points for reporting (9 points), external validity (2 points), internal validity (bias and confounding) (8 points), and power (1 point) [21]. Any disagreement of ratings was discussed and a consensus was arrived at mutually or by consulting a third author, if earlier consensus could not be reached.

Statistical analysis

Reported ORs, HRs, RRs, SIRs, and SMRs were considered as RRs in meta-analyses and used in forest plots. A random effects model was used to calculate meta-risk estimates (mREs) in all meta-analyses due to potential variance in effect sizes between the included studies. mREs were calculated separately for firefighting and police occupations and prostate cancer risk. mREs were calculated for subgroups based on the following characteristics: incidence versus mortality, study design (i.e. cohort versus case–control, and administrative linkage-based studies, defined as large studies that used multiple linked administrative databases, e.g. census data and tumour registries.

For each mRE, heterogeneity was evaluated using the I^2 statistic. The I^2 statistic is a percentage that describes the variation between studies that is not due to chance [22]. Two-sided *p*-values for the I2 statistic were reported. Ninety-five percent confidence intervals for the I2 statistic were calculated to address small numbers of included studies ($N < 5$) in some subgroup meta-analyses. In addition, the Galbraith plot was used to visualize if individual studies fell within or outside of the 95% confidence region. Studies outside of the 95% confidence region can contribute to high heterogeneity. These studies were removed in sensitivity analyses to evaluate the impact of decreased heterogeneity on mREs [23].

Begg's test and Egger's test were used to assess publication bias. Begg's test uses the correlation between ranks of effect sizes and variances, whereas Egger's test uses a funnel plot to plot the effect estimates against sample size [24, 25]. All statistical analyses were performed using STATA version 14.2 (StataCorp LLC, College Station, USA).

Results

The literature search resulted in 366 unique studies published in English or French. Based on the screening of titles and abstracts, 318 (87%) were excluded due to non-observational/non-human studies, missing job titles, missing effect estimates for prostate cancer, duplicate studies, or irrelevancy to the objective of this meta-analysis. Of the remaining 48 studies that were obtained in full text, 17 were excluded because they did not include reports of relative risks for prostate cancer with 95% CIs, had overlapping study populations, or were studies of military workers. As a result, 31 unique studies were included (Fig. 1).

Of these, 24 were cohort and seven were case–control studies. Nineteen studies only included investigations of firefighters (Table 1) and five focused on police workers (Table 2); seven contained investigations of both firefighters and police workers (Table 3). In all studies that included firefighters ($N = 26$), there were 5712 incident cases of prostate cancer and 428 deaths from prostate cancer. In all studies that included police workers ($N = 12$), there were 1510 incident cases and 49 deaths. The characteristics of each included study are summarized in Tables 1 (firefighters), 2 (police workers), and 3 (both). Covariates included in the risk estimates selected from each of the seven case–control studies are shown in Additional file 1: Table S1.

Of all the firefighter studies, 2 pairs of studies (Ma et al., 2005 & Ma et al., 2006; Demers et al., 1992 & Demers et al., 1994) [26–29] examined the same respective populations but reported on different prostate cancer outcomes (incidence and mortality). In the meta-analyses of prostate cancer incidence and mortality in firefighters, respective results from both pairs of studies were retained and used. Two studies [30, 31] published results for both prostate cancer incidence and mortality, and each estimate was used [31, 32]. For the police studies, [28, 29] reported on the same populations with different outcomes of incidence and mortality, and each estimate was used. Each incidence and mortality outcome was used only in their respective categories and not included together for any meta-risk estimates.

Quality assessment

The overall quality assessment of all 31 included studies ranged from 5 to 19 points (Table 4). Scores were similar for firefighter, police, and firefighter and police studies across the different quality assessment categories. The mean score for reporting was 6 out of 9, based on clear

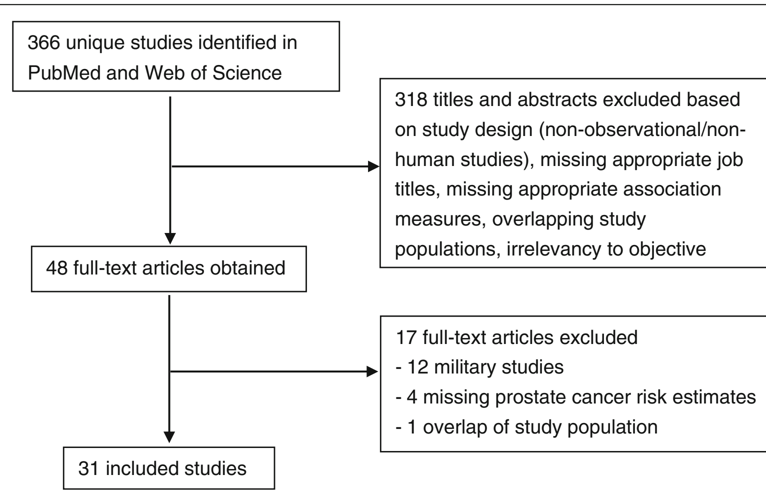

Fig. 1 Descriptive flow chart of study selection in this meta-analysis

Table 1 Characteristics of included studies on firefighting and prostate cancer risk (*N* = 19)

Author/ Year	Location of Study	Study Design	Incidence or Mortality	Follow-up period	Number of Cases/ Deaths	Cohort Size/Total Number of Cases[a]	Prostate Cancer Risk Estimates for Ever versus Never Employment[b]
Glass et al. 2016 [63]	Australia	Cohort	Incidence	1980–2011	478	30, 057	SIR 1.31, 95% CI 1.19–1.43
Brice et al. 2015 [64]	France	Cohort	Mortality	1979–2008	17	10, 829	SMR 0.54, 95% CI 0.31–0.86
Daniels et al. 2014 [32]	USA	Cohort	Incidence; Mortality	1950–2009	1261 cases 282 deaths	29, 993 29, 993	SIR 1.03, 95% CI 0.98–1.09; SMR 1.09, 95% CI 0.96–1.22
Pukkala et al. 2014 [17]	Denmark, Finland, Iceland, Norway and Sweden	Cohort (linkage)	Incidence	1961–2005	660	16, 422	SIR 1.13, 95% CI 1.03–1.22
Ahn et al. 2012 [65]	Korea	Cohort	Incidence	1996–2007	9	33, 416	SIR 1.32, 95% CI 0.60–2.51
Ma et al. 2006 [27]	USA	Cohort	Incidence	1981–1999	209	34, 796	SIR 1.10, 95% CI 0.95–1.42
Ma et al. 2005 [26]	USA	Cohort	Mortality	1972–1999	21	34, 796	SMR 1.08, 95% CI 0.67–1.65
Baris et al. 2001 [66]	USA, USA	Cohort	Mortality	1925–1986	31	7, 789	SMR 0.96, 95% CI 0.68–1.37
Bates et al. 2001 [67]	New Zealand	Cohort	Incidence	1977–1995	11	4, 221	SIR 1.08, 95% CI 0.50–1.90
Tornling et al. 1994 [31]	Sweden	Cohort	Incidence; Mortality	1951–1986	28 cases 14 deaths	1, 116 1, 091	SMR 114, 95% CI 76–165; SMR 121, 95% CI 66–202
Aronson et al. 1994 [68]	Canada	Cohort	Mortality	1950–1989	16	5, 373	SMR 132, 95% CI 76–215
Giles et al. 1993 [69]	Australia	Cohort	Incidence	1980–1989	5	2, 865	SIR 2.09, 95% CI 0.67–4.88
Guidotti 1993 [70]	Canada	Cohort	Mortality	1927–1987	8	3, 328	SMR 146.1, 95% CI 63.1–287.9
Beaumont et al. 1991 [33]	USA	Cohort	Incidence	1940–1982	8	3, 066	RR 0.38, 95% CI 0.16–0.75
Grimes et al. 1991 [71]	USA	Cohort	Mortality	1969–1988	4	205	PRR 2.6, 95% CI 1.4–5.0
Vena & Friedler 1987 [72]	USA	Cohort	Mortality	1950–1979	5	470	SMR 0.71, 95% CI 0.23–1.65
Tsai et al. 2015 [73]	USA	Case–control (linkage)	Incidence	1988–2007	1397	3, 996	OR 1.45, 95% CI 1.25–1.69
Kang et al., 2008 [74]	USA	Case–control (linkage)	Incidence	1986–2003	577	285, 964	SMOR 1.05, 95% CI 0.88–1.24
Krstev et al. 1998 [75]	USA	Case–control	Incidence	1986–1989	12	981	OR 3.34, 95% CI 1.13–9.91

[a]cohort size represents the total sample size in only cohort studies, and the total number of cases is only applicable to case–control studies
[b]HR – hazard ratio, SIR – standardized incidence ratio, SMR – standardized mortality/morbidity ratio, RR – relative risk, PRR – proportionate risk ratio, OR – odds ratio, NR – not reported

and detailed reporting of aims/hypotheses, outcomes measures, participant information, confounder information, and loss to follow-up. Studies were generally found to be externally valid, and there was minimal bias. Studies of firefighters had higher scores for confounding factors than studies of police workers. Only one study reported a power calculation making it difficult to evaluate this category.

Table 2 Characteristics of included studies on police work and prostate cancer risk (*N* = 5)

Author/Year	Location of Study	Study Design	Incidence or Mortality	Follow-up Period	Number of Cases/Deaths	Cohort Size/Total Number of Cases[a]	Prostate Cancer Risk Estimates for Ever versus Never Employment[b]
Vena et al. 2014 [19]	USA	Cohort	Mortality	1980–2005	31	3, 424	SMR 1.18, 95% CI 0.80–1.67
Gu et al. 2011 [76]	USA	Cohort	Incidence	1976–2006	104	2, 234	SIR 0.88, 95% CI 0.72–1.07
Finkelstein 1998 [20]	Canada	Cohort	Incidence	1964–1995	85	22, 197	SIR 1.16, 95% CI 0.93–1.43
Forastiere et al. 1994 [77]	Italy	Cohort	Mortality	1973–1991	7	3, 868	SMR 0.77, 95% CI 0.31–1.50
Bouchardy et al. 2002 [78]	Switzerland	Case–control	Incidence	1980–1993	129	9, 126	OR 1.20, 95% CI 1.00–1.50

[a]cohort size represents the total sample size in only cohort studies, and the total number of cases is only applicable to case–control studies
[b]HR – hazard ratio, SIR – standardized incidence ratio, SMR – standardized mortality/morbidity ratio, RR – relative risk, OR – odds ratio

Firefighter and prostate cancer meta-analyses

There were significantly elevated prostate cancer risks for firefighting occupations for incidence outcomes, cohort studies, and administrative linkage-based studies. For incidence studies, the mRE was 1.17 (95% CI: 1.08–1.28; I^2 = 72%, 95% CI: 55–82%, *p*-value <0.001; 19 studies) (Fig. 2); for mortality studies, it was 1.12 (95% CI: 0.92–1.36; I^2 = 50%, 95% CI: 0–76%, p-value = 0.04; 10 studies) (Fig. 3). In cohort studies, the prostate cancer mRE was 1.14 (95% CI: 1.03–1.26; I^2 = 67%, 95% CI: 46–80%, *p*-value <0.001; 18 studies) (Additional file 2: Figure S1). The meta-analysis of case–control studies resulted in an mRE of 1.27 (95% CI: 0.95–1.69; I^2 = 78%, 95% CI: 53–90%, *p*-value <0.001; 6 studies) (Additional file 3: Figure S2). The mRE for census or administrative linkage-based studies was 1.19 (95% CI: 1.06–1.34; I^2 = 61%, 95% CI: 0–85%, *p*-value = 0.04; 5 studies) (Additional file 4: Figure S3).

Police work and prostate cancer meta-analyses

There were significantly elevated prostate cancer risks for police occupations by incidence outcomes and in case–control studies. The mRE for prostate cancer incidence studies was 1.14 (95% CI: 1.02–1.28; I^2 = 33%, 95% CI: 0–74%, *p*-value = 0.16; 9 studies) (Fig. 4) while the mRE for prostate cancer mortality studies was 1.08 (95% CI: 0.80–1.45; I^2 = 0%, 95% CI: 0%–90%, *p*-value = 0.62; 3 studies) (Fig. 5). The mRE for case–control studies was higher compared to the mRE for cohort studies (case–control studies: mRE = 1.22, 95% CI: 1.03–1.44; I^2 = 0% (95% CI 0%–85%, p-value = 0.42; 4 studies) (Additional file 5: Figure S4) versus cohort studies: mRE = 1.10, 95% CI: 0.96–1.26; I^2 = 37%, 95% CI: 0–79%, p-value = 0.15; 7 studies) (Additional file 6: Figure S5). There were no administrative linkage-based studies of police workers and prostate cancer risk.

Table 3 Characteristics of included studies on both firefighting and police work and prostate cancer risk (*N* = 7)

Author/Year	Location of Study	Study Design	Incidence or Mortality	Follow-up Period	Number of Cases/Deaths	Cohort Size/Total Number of Cases[a]	Prostate Cancer Risk Estimates for Ever versus Never Employment[b]
Sritharan et al, 2017b*	Canada	Cohort (linkage)	Incidence	1991–2011	165 firefighters; 325 police	1,100,000 1,100,000	HR 1.17, 95% CI 1.01–1.36; HR 1.22, 95% CI 1.09–1.36
Zeegers et al. 2004 [11]	Netherlands	Cohort (linkage)	Incidence	1986–1993	709 firefighters; 693 police	58, 279 58, 279	RR 0.59, 95% CI 0.05–6.33; RR 1.62, 95% CI 0.62–4.27
Demers et al. 1994 [28]	USA	Cohort	Incidence	1974–1989	66 firefighters; 28 police	2, 447 1, 878	SIR 1.40, 95% CI 1.10–1.70; IDR 1.10, 95% CI 0.70–1.80
Demers et al. 1992 [29]	USA	Cohort	Mortality	1945–1989	30 firefighters; 11 police	4, 546 3, 676	SMR 1.34, 95% CI 0.90–1.91; SMR 1.02, 95% CI 0.51–1.82
Sritharan et al. 2017a [79]	Canada	Case–control	Incidence	1995–1998	38 firefighters; 35 police	1, 737 1, 737	OR 1.67, 95% CI 0.94–2.95; OR 1.15, 95% CI 0.66–1.99
Sritharan et al. 2016 [80]	Canada	Case–control	Incidence	1994–1997	53 firefighters; 12 police	760 760	OR 0.73, 95% CI 0.53–1.01; OR 0.82, 95% CI 0.41–1.63
Sauve et al. 2016 [12]	Canada	Case–control	Incidence	2005–2009	26 firefighters; 45 police	1, 937 1, 937	OR 1.72, 95% CI 0.88–3.37; OR 1.60, 95% CI 1.00–2.40

[a]cohort size represents the total sample size in only cohort studies, and the total number of cases is only applicable to case–control studies
[b]HR – hazard ratio, SIR – standardized incidence ratio, SMR – standardized mortality/morbidity ratio, RR – relative risk, IDR – incidence density ratio, OR – odds ratio
*manuscript submitted and currently being revised for publication

Table 4 Quality assessment of included firefighter and police studies

Quality Assessment Category	Maximum Attainable Score	Studies on firefighters (n = 19)		Studies on police workers (n = 5)		Studies on both firefighters and police workers (n = 7)		All studies (n = 31)
		Range	Mean	Range	Mean	Range	Mean	Mean
Reporting	9	4–9	6.0	1–8	5.4	4–8	6.1	5.9
External Validity	2	1–2	1.8	0–2	1.6	1–2	1.6	1.7
Internal Validity: Bias	4	3–4	3.8	3–4	3.8	4	4	3.8
Internal Validity: Confounding	4	2–4	3.2	1–4	2.8	3–4	3.6	3.2
Power	1	0	0	0	0	0–1	0.1	0.0
Total	20	10–19	14.8	5–18	13.6	12–18	15.4	14.6

Between-study heterogeneity

There was high heterogeneity (72%) for the meta-analysis of all 19 firefighter incidence studies. As a sensitivity analysis, the Galbraith plot was used and one study [33], appeared outside of the 95% confidence region. Removal of this study resulted in a minimal change in heterogeneity (72 versus 69%, respectively). For the meta-analysis of the 10 mortality studies, there was moderate heterogeneity (50%). High heterogeneity was observed for the six case–control studies (78%), 18 cohort studies (67%) and the five administrative linkage-based studies (61%). When plotting these subgroups using the Galbraith plot, no studies appeared outside of the 95% confidence region.

For police studies, heterogeneity ranged from none to moderate. Moderate heterogeneity was observed for the nine incidence studies (33%) and seven cohort studies (37%), but no heterogeneity (0%, 95% CI: 0–90%) was observed for the mortality (three studies) and case–control (four studies) subgroups. I^2 values of 0% are biased and imprecise, likely because of the small number of studies in these subgroups (n < 5) [34]. Using the Galbraith plot, none of the police studies appeared outside of the 95% confidence region.

Publication bias

There was no evidence of publication bias according to Begg's test (p = 0.86) and Egger's test (p = 0.11) for the meta-analysis of all 19 firefighter incidence studies. No publication bias was evident for the 9 police incidence studies (Begg's test: p = 0.60, Egger's test: p = 0.68). There were also no statistically significant findings for

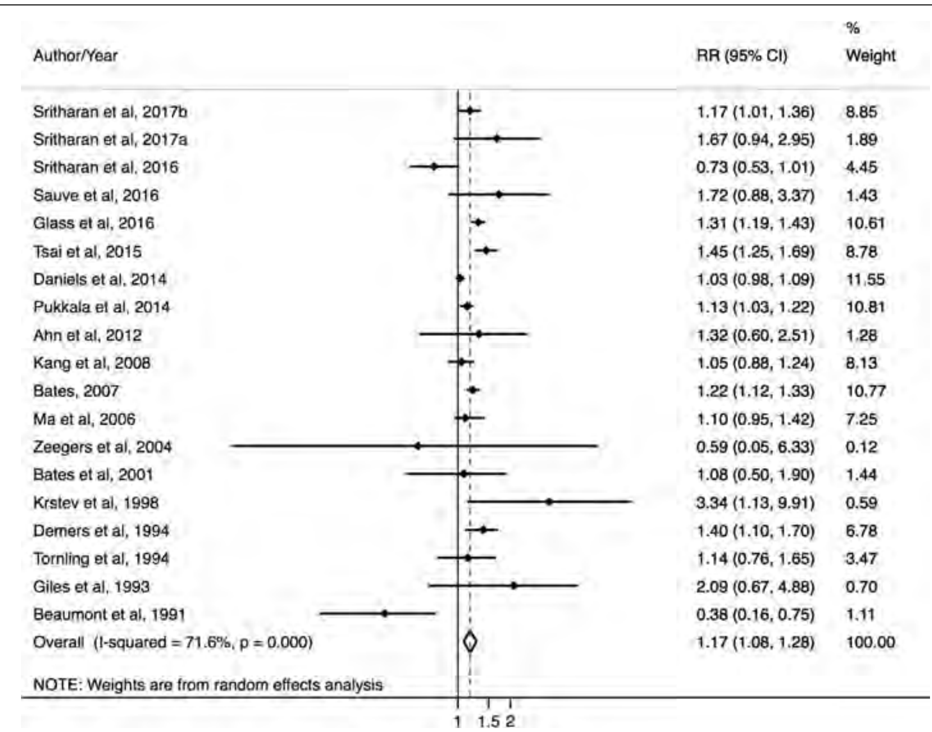

Fig. 2 Forest plot and mRE of all included prostate cancer incidence studies on firefighters

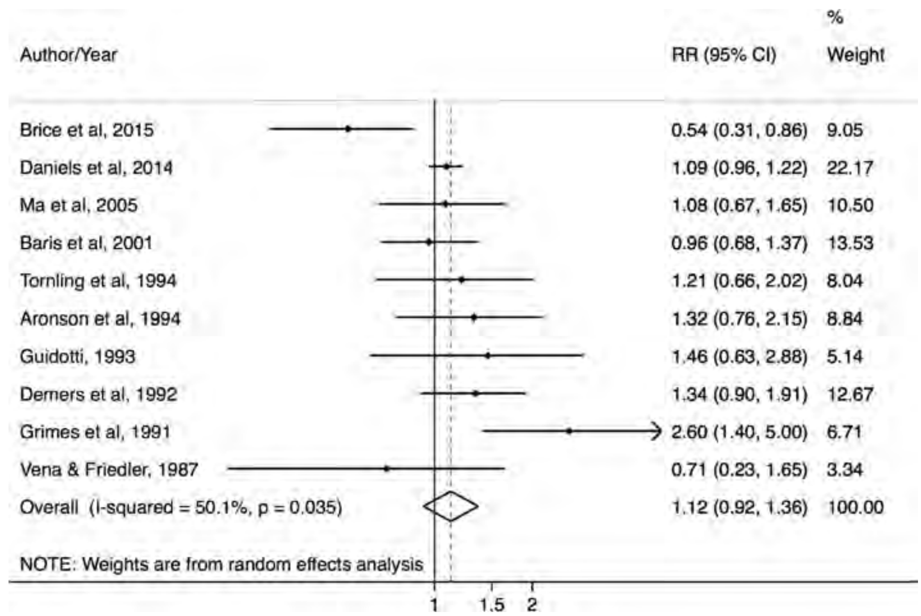

Fig. 3 Forest plot and mRE of all included prostate cancer mortality studies on firefighters

publication bias for mortality studies, case–control, cohort, and administrative linkage-based studies.

Discussion

In this meta-analysis of 31 epidemiological studies of protective services workers, nearly identical and small statistically significant excess risks of prostate cancer were found for ever working in firefighting and police work. Statistically significant and borderline prostate cancer mREs were found for firefighters in separate evaluations of incidence studies, cohort studies, and administrative linkage studies, as well as in each meta-analysis of police worker incidence studies and case–control studies. Most studies were of average quality, with opportunities for improvement in reporting and study power assessment. As expected, case–control studies compared to cohort studies generally had more information on variables that can act as potential confounders of the firefighter/police work and prostate cancer associations. All case–control studies reported prostate cancer risk estimates that were adjusted for age;

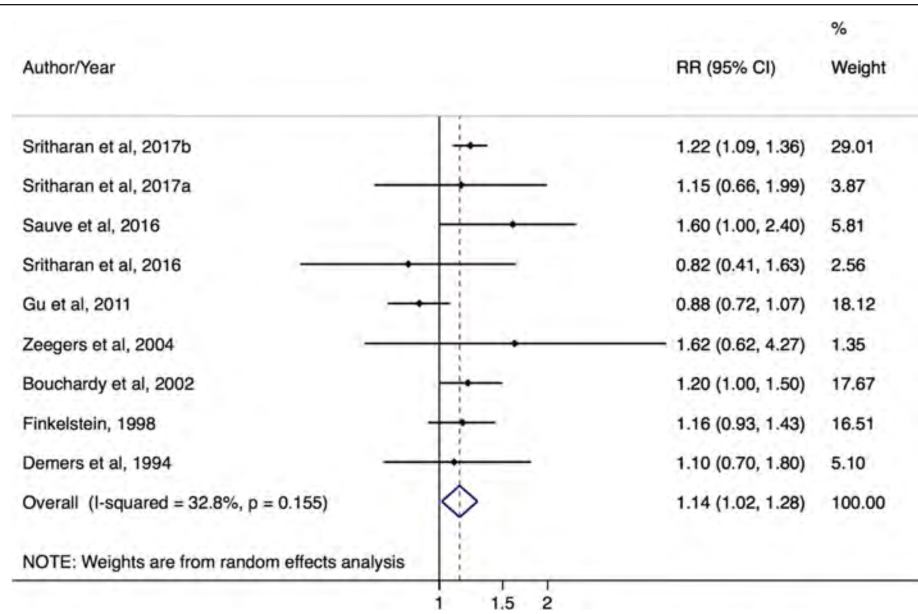

Fig. 4 Forest plot and mRE of all included prostate cancer incidence studies on police workers

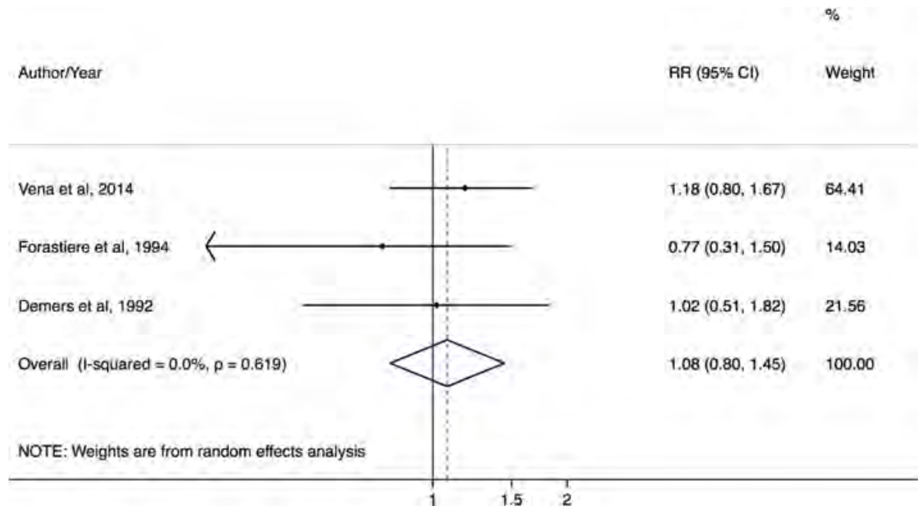

Fig. 5 Forest plot and mRE of all included prostate cancer mortality studies on police workers

most were also adjusted for ethnicity. Fewer case–control studies adjusted risk estimates for family history of prostate cancer and potentially confounding variables such as socioeconomic status, physical activity, height, obesity, active smoking, and alcohol consumption. Overall, findings from this meta-analysis support positive associations found between prostate cancer risk and firefighting in the epidemiological literature, and indicate a potential relationship with police work as well.

There are a few hypotheses that may explain why employment in protective services occupations could be associated with increased prostate cancer risk. Firefighting and police jobs are inherently dangerous occupations that involve stressful, and, at times, life-threatening, situations with exposure to multiple hazards [14–16]. Psychological stressors can influence biological processes and lead to decreased immune function, increased pro-inflammatory cytokine secretion, and cancer progression [15]. Shift work, which is common in protective services work, was significantly associated with increased prostate cancer risk in a recent meta-analysis of eight case–control and cohort studies [35]. Firefighters are also exposed to toxins released by fire and smoke including benzene, 1,3-butadiene, formaldehyde and at times can be exposed to other compounds such as radiation, diesel exhaust, asbestos, metals (arsenic and cadmium), and PAHs [14, 16, 27]. The chemical reactions during combustion and the age and type of building or material on fire can contribute to exposure to these compounds [16]. Police work involves fewer chemical exposures compared to firefighting, although exposure to ionizing radiation from radar devices is a concern for overall cancer risk [11, 12]. Firefighters and police workers may also be exposed to air pollution on the job, as ambient concentrations of ultrafine particles and NO_2 have been previously linked to prostate cancer risk [36, 37]. Of the described chemical exposures, only x and gamma radiation, arsenic compounds, and cadmium compounds have been linked to prostate cancer by IARC based on limited evidence in non-occupational settings. However, IARC has classified benzene, ionizing radiation, diesel exhaust, asbestos, arsenic compounds, cadmium compounds, and air pollution as all Group 1 carcinogens, based on evidence for other cancer sites [38]. There is a need to further examine these chemical exposures in both firefighting and police work to understand if these exposures are involved in prostate cancer risk.

Evaluating potential associations between shift work and prostate cancer is an active area of ongoing research [39–41]. Shift work can disrupt the body's endogenous circadian rhythm (sleep-wake cycle) and contribute to increased susceptibility to acute and chronic diseases. However, the biological mechanisms that may be involved in prostate and other cancers have not been established [18, 42]. One hypothesis is that night shift work can lead to decreased melatonin, which can then lead to continuous testosterone production, influencing the growth and differentiation of prostate cancer cells [16]. In addition, decreased sunlight exposure in night shift workers reduces the production of vitamin D, thereby compromising the effects of vitamin D on suppressing the production of prostate cancer cells [16].

Psychological stress also has been linked to cancer progression, but there is limited evidence for how this impacts cancer promotion [43]. Firefighting and police work involve constant stressors that can potentially affect cancer progression, particularly prolonged stress over years of employment in these jobs [44]. A recent study on stress at work and cancer outcomes found that the highest prevalence of stress at work was reported among firemen when compared to other types of occupations [45].

Another factor that may influence our meta-analysis results is prostate cancer screening. Although prostate specific antigen (PSA) testing varies across different countries and within countries, it is believed that protective services workers have frequent and better access to health resources compared to other workers, including access to cancer screening [32]. In North America, for example, firefighters are provided with health information and recommendations on what to consider when completing a health examination with their primary physician, including recommendations for prostate cancer screening [46]. However, it is up to each fire department to disseminate this information and ultimately up to each firefighter to request screening from their primary physician. In this meta-analysis we found slightly lower mortality mREs compared to incidence mREs for firefighters and police officers. As increased screening of prostate cancer leads to the identification of more early stage cases (increased incidence), this may be indicative of a screening effect. However, the mREs for both incidence and mortality were so similar that it was difficult to attribute these differences to screening. Also, prostate cancer screening may not be of high importance in firefighting compared to other cancers (ex. brain, bladder, and colon) and health conditions that have been consistently associated with firefighting. We evaluated study estimates based on different follow-up periods defined as pre-PSA period (prior to 1990 before the PSA test was introduced), during the introduction of PSA testing (early 1990s), and after the introduction of PSA testing (late 1990s and onwards). Although we included studies from different nations, most of the studies were North American so we loosely defined the time periods based on North America. We identified a number of pre-PSA period firefighter studies and observed a meta-risk estimate of 1.26 (95% CI 0.96–1.67) for these studies. For firefighter studies that had follow-up periods during and after the introduction of PSA testing, we observed a meta-risk estimate of 1.13 (95% CI 1.02–1.25). It was challenging to define firefighter study follow-up periods as post PSA testing (late 1990s onwards) since most of these studies had follow-up periods that overlapped the early 1990s when PSA testing began. We identified only a few firefighter studies that had later follow-up periods (late 1990s and early 2000s) and observed a meta-risk estimate of 1.58 (95% CI 1.09–2.29) for these studies. Overall, we observed an elevated risk for firefighter studies that were conducted before the introduction of PSA testing, and a statistically significant elevated risk for firefighter studies that took place during and after the introduction of PSA testing. These findings may be representative of the increased screening that took place over this time period. We attempted to evaluate police studies as well but were limited as almost all included police studies had follow-up periods overlapping periods with and without PSA testing.

Our findings of a slight excess risk of prostate cancer in firefighting and police services should be cautiously interpreted. As expected, there was considerable heterogeneity between studies, particularly in subgroup meta-analyses of police workers and prostate cancer risk that involved small numbers of studies. This makes it challenging to interpret mRE values with precision [34]. Heterogeneity was likely due to differences in study design and populations studied, follow-up years, occupational exposure assessment and job coding, and adjustment of relative risk values for known or potential covariates. Specifically, there were differences in how the study populations were defined, in terms of paid or unpaid work, full time vs. part time, and eligible employment duration. Some heterogeneity may also be attributed to different follow-up periods in each study, especially those overlapping the pre and post PSA era. The variation in age distribution across included studies could also contribute to heterogeneity based on differences in how studies stratified by age. Some studies had relatively younger populations than other studies and we observed a similar elevated meta-risk estimate for these younger population studies as we did for the overall estimates Publication bias was also considered, but was not recognized as a significant factor as a majority of the included studies were cohort designs. The cohort studies generally looked at multiple cancer sites as outcomes, so it is unlikely that publication bias would have been of concern based on solely prostate cancer results.

A major strength of this meta-analysis is that it was the first to assess prostate cancer risk in both firefighting and police work, replete with subgroup analyses and assessments of study quality, heterogeneity, and publication bias. This meta-analysis captured all previously and newly published studies since the IARC evaluation of firefighting in 2007, and also quantitatively evaluated prostate cancer risk in police studies which had not been done before. Firefighting and police work should be priority areas for investigation because these occupations frequently involve exposure to multiple chemical, biological, physical, and psycho-social hazards. Exposure to some hazards may be associated with increased risk of prostate cancer, although the strength and consistency of associations varies across studies and there are substantial research gaps. Altogether, this research can be used to help identify opportunities for further research on occupation and prostate cancer risk.

Other occupations of interest with respect to prostate cancer risk are military workers. While we initially sought to include military studies in this meta-analysis, they were ultimately not included because these studies were primarily based on specific historical events (ex. Gulf war) or internal comparisons between military groups [47–62]. This made it difficult to compare findings to other studies that did not focus on single events or that compared workers to the general population. Future assessments can separately consider military studies.

Conclusions

Overall, the slight excess risks of prostate cancer in firefighting and police services found in this meta-analysis of 31 studies were generally robust to subgroup analyses by outcome (incidence and mortality) and study design. Our findings are important as they show the importance of prostate cancer incidence and mortality among protective services workers, and as this is the first meta-analysis to include both firefighting and police work and prostate cancer risk. The observed findings suggest that screening may not entirely explain our findings, but further investigation into actual screening rates and screening behaviours in firefighting and police work is warranted. Also, further investigations should be designed to assess specific exposures such as benzene, radiation, diesel exhaust, arsenic and cadmium compounds, PAHs, asbestos, and air pollution which are involved in firefighting. Little evidence on how they may relate to prostate cancer risk has been accrued. There is also a need for future studies to examine prostate cancer risk in police work given the small number of police workers published to date. By addressing these important issues in future studies, there will be better understanding on prostate cancer risk in firefighting and police work.

Additional files

Additional file 1: Table S1. Covariates adjusted for in firefighter and police case–control studies (DOCX 12 kb)

Additional file 2: Figure S1. Forest plot and mRE of all included cohort studies on firefighters. (DOCX 285 kb)

Additional file 3: Figure S2. Forest plot and mRE of all included case–control studies on firefighters. (DOCX 137 kb)

Additional file 4: Figure S3. Forest plot and mRE of all included administrative linkage-based studies on firefighters. (DOCX 153 kb)

Additional file 5: Figure S4. Forest plot and mRE of all included cohort studies on police workers. (DOCX 175 kb)

Additional file 6: Figure S5. Forest plot and mRE of all included case–control studies on police workers. (DOCX 117 kb)

Abbreviations

CI: Confidence Interval; HR: Hazard Ratio; IARC: International Agency for Research on Cancer; mRE: Meta-risk Estimate; OR: Odds Ratio; PSA: Prostate Specific Antigen; RR: Relative Risk; SIR: Standardized Incidence Ratio; SMR: Standardized Mortality Ratio

Acknowledgements

We would like to acknowledge Sheila Kalenge's contribution to prostate cancer screening behaviours in firefighters.

Data availability statements

All data generated or analyzed during this study are included in this published article.

Funding

The corresponding author is supported by the Occupational Cancer Research Centre which is funded by the Canadian Cancer Society, Cancer Care Ontario and the Ontario Ministry of Health and Long-Term Care. Grant number 2014–703257.

Authors' contributions

The corresponding author, JS, is the main contributor in the design and conceptualization of the study, analysis and interpretation of the data, drafting the work and revising content critically, final approval of the work to be published. MP contributed to the design and conceptualization of the study, analysis and interpretation of the data, drafting and revising the work critically, and final approval of the version to be published. PD contributed to the conceptualizing and design of the study, acquisition and interpretation of the data, drafting the work and revising content critically, and final approval of the work to be published. SH and DC contributed to the design and interpretation of the work, drafting and revising content critically, and final approval of the version to be published. MEP contributed to the design and conceptualization of the study, interpretation of the data, drafting and revising the work critically, and final approval of the version to be published.

Ethics approval and consent to participate

Not Applicable.

Consent for publication

Not Applicable.

Competing interests

The authors declare that they have no competing interests.

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Author details

[1]Occupational Cancer Research Centre, Cancer Care Ontario, 525 University Avenue, Toronto, ON M5G 2L3, Canada. [2]Institute of Medical Science, University of Toronto, 525 University Avenue, Toronto, ON M5G 2L3, Canada. [3]CAREX Canada, Simon Fraser University, Burnaby, Canada. [4]Dalla Lana School of Public Health, University of Toronto, 525 University Avenue, Toronto, ON M5G 2L3, Canada. [5]Population Health and Prevention, Cancer Care Ontario, 525 University Avenue, Toronto, ON M5G 2L3, Canada. [6]INRS-Institut Armand-Frappier, University of Quebec, 531 Boulevard des Prairies, Laval, Quebec H7V 1B7, Canada.

Received: 20 September 2017 Accepted: 27 October 2017
Published online: 17 November 2017

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Published in final edited form as:
Am J Ind Med. 2015 July ; 58(7): 715–729. doi:10.1002/ajim.22466.

Risk of Cancer Among Firefighters in California, 1988–2007

Rebecca J. Tsai, PhD[1], **Sara E. Luckhaupt, MD, MPH**[1], **Pam Schumacher**[1], **Rosemary D. Cress, PhD**[2,3], **Dennis M. Deapen, DrPH**, and **Geoffrey M. Calvert, MD, MPH**[1]

[1]Division of Surveillance, Hazard Evaluations and Field Studies, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Cincinnati, Ohio

[2]Public Health Institute, Cancer Registry of Greater California, Sacramento, California

[3]Department of Public Health Sciences, UC Davis School of Medicine, Davis, California

Abstract

Background—Most studies of firefighter cancer risks were conducted prior to 1990 and do not reflect risk from advances in building materials.

Methods—A case–control study using California Cancer Registry data (1988–2007) was conducted to evaluate the risk of cancer among firefighters, stratified by race.

Results—This study identified 3,996 male firefighters with cancer. Firefighters were found to have a significantly elevated risk for melanoma (odds ratio [OR]=1.8; 95% confidence interval [CI] 1.4–2.1), multiple myeloma (OR 1.4; 95%CI 1.0–1.8), acute myeloid leukemia (OR 1.4; 95%CI 1.0–2.0), and cancers of the esophagus (OR 1.6;95%CI 1.2–2.1), prostate (OR 1.5; 95%CI 1.3–1.7), brain (OR 1.5; 95%CI 1.2–2.0), and kidney (OR 1.3; 95%CI 1.0–1.6).

Conclusions—In addition to observing cancer findings consistent with previous research, this study generated novel findings for firefighters with race/ethnicity other than white. It provides additional evidence to support the association between firefighting and several specific cancers.

Keywords

cancer; firefighters; occupation; registry; risk

Correspondence to: Rebecca J. Tsai, PhD, National Institute for Occupational Safety and Health, 1090 Tusculum Avenue, R-17, Cincinnati, OH 45226. rtsai@cdc.gov.

Author Contribution Statement: All authors contributed to the conception, acquisition, analysis, or interpretation of data. Additionally, all authors were involved in reviewing and revising this manuscript for intellectual content, approving the final manuscript, and agreeing to account for all aspects of this manuscript.

Disclaimers: The collection of cancer incidence data used in this study was supported by the California Department of Public Health as part of the statewide cancer reporting program mandated by California Health and Safety Code Section 103885; the National Cancer Institute’s Surveillance, Epidemiology and End Results Program under contract HHSN261201000140C awarded to the Cancer Prevention Institute of California, contract HHSN261201000035C awarded to the University of Southern California, and contract HHSN261201000034C awarded to the Public Health Institute; and the Centers for Disease Control and Prevention’s National Program of Cancer Registries, under agreement U58DP003862-01 awarded to the California Department of Public Health. The ideas and opinions expressed herein are those of the author(s) and endorsement by the National Institute for Occupational Safety and Health, the National Center for Health Statistics, the State of California, Department of Public Health, the National Cancer Institute, and the Centers for Disease Control and Prevention or their Contractors and Subcontractors is not intended nor should be inferred.

Conflict of interest: All authors are federal or state government employees and preparation of this manuscript was completely funded by the US Government. Otherwise, no additional financial disclosures were reported by the authors of this paper.

INTRODUCTION

Firefighting is considered one of the most hazardous occupations [Guidotti, 1993]. In 2013, there were about 354,600 (31%) career firefighters and 786,150 (69%) volunteer firefighters in the United States [National Fire Protection Association, 2014]. Firefighters are expected to perform under stressful conditions and are at risk for physical, biological, and chemical-related injuries and illnesses, including cancer [Melius, 2001].

Firefighters are often exposed to known carcinogens in their line of work [Stefanidou et al., 2008]. Additionally, the introduction of newer building materials beginning approximately 40 years ago (e.g., engineered thermoplastics such as polyvinylidene fluoride, and laminated veneer lumber), may expose firefighters to potentially new carcinogenic combustion products [Beaumont et al., 1991; Grundahl, 1992]. The burning of plastics found in home appliances, furniture, and electronics may also introduce firefighters to new carcinogens [Korst, 2012]. While the use of a self-contained breathing apparatus (SCBA) can eliminate or significantly decrease respiratory exposure to toxic particles during firefighting [Bates, 2007], SCBAs are not always worn, especially during overhaul. Overhaul is a late-stage in fire suppression when the burned area is inspected for flammable sources that can rekindle a fire. During overhaul, firefighters can be exposed to combustion products through disassembling walls or removing furniture [Bates, 2007]. Furthermore, even when SCBAs are worn, firefighters can absorb combustion products through the unprotected skin on their neck [Fent et al., 2014]. Several combustion products are classified by the International Agency for Research on Cancer (IARC) as carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B). These combustion products include benzene (Group 1), benzo[a]pyrene (Group 1), vinyl chloride (Group 1), formaldehyde (Group 1), 1, 3-butadiene (Group 1), and polychlorinated biphenyls (PCBs) (Group 1) [Melius, 2001; Stefanidou et al., 2008; International Agency for Research on Cancer, 2015]. Firefighters may also be exposed to asbestos (Group 1) and lead (Group 2A) when present in burning buildings [International Agency for Research on Cancer, 2015]. Non-fire-related exposures may also increase cancer risk, as firefighters can be exposed to diesel exhaust from fire trucks, and diesel exhaust was found to be associated with increased cancer risks [International Agency for Research on Cancer, 2015].

Studies have found that firefighting is significantly associated with an increased risk for developing the following cancers: colorectal [Vena and Fiedler, 1987; Burnett et al., 1994; Baris et al., 2001; Daniels et al., 2014], lung [Pukkala et al., 2014; Daniels et al., 2015], melanoma [Howe and Burch, 1990; Sama et al., 1990], prostate [Grimes et al., 1991; Demers et al., 1994; LeMasters et al., 2006], testis [LeMasters et al., 2006; Ma et al., 2006], urinary bladder [Vena and Fiedler, 1987; Sama et al., 1990; Ma et al., 2006], kidney [Burnett et al., 1994; Delahunt et al., 1995; Daniels et al., 2014], brain [Grimes et al., 1991; Demers et al., 1992; Aronson et al., 1994; Ma et al., 2006], myeloma [LeMasters et al., 2006], non-Hodgkin lymphoma [Burnett et al., 1994; Figgs et al., 1995; Golden et al., 1995], and leukemia [Morton and Marjanovic, 1984; Golden et al., 1995; Baris et al., 2001; Daniels et al., 2015]. In recognition of these cancer risks, as of 2015, a total of 33 states cover firefighters for one or more cancers under workers' compensation as a result of presumption legislation [International Association of Fire Fighters, 2015]. In 20 of these states, the language in the presumption legislation contains broad or nonspecific language that can be interpreted to cover any cancer experienced by a firefighter. In the other 13 states, only certain specific cancers are covered, most commonly leukemia (12 states), brain cancer (10 states), bladder cancer (9 states), non-Hodgkin lymphoma (9 states), and gastrointestinal cancer (8 states).

Ongoing assessment of cancer risks among firefighters is needed because of inconsistent findings across previous studies [International Agency for Research on Cancer, 2010], and because most studies were conducted prior to 1990 which may limit their ability to detect new risks arising from advances in building materials. In addition, few studies have examined the cancer risks among firefighters of other race/ethnicity. This study aims to update and expand a previous study by Bates [Bates, 2007], assessing cancer risks among firefighters using data from the California Cancer Registry (CCR). In addition, this is one of the first studies to include an examination of firefighter risk for subtypes of leukemia, esophageal cancer and lung cancer, and cancer risks among firefighters of other race/ ethnicity (e.g., blacks and Hispanics).

MATERIALS AND METHODS

California Cancer Registry (CCR)

CCR is a population-based cancer surveillance system that collects data on all cancers (excluding non-melanoma skin cancers and in-situ cervical carcinoma) among California residents. It is estimated that at least 95% of cancer cases are ascertained by CCR [North American Association of Central Cancer Registries, 2015]. Cancer reporting has been mandated by California law since 1985 and CCR has collected statewide cancer data from doctors, hospitals, and other medical facilities since January 1, 1988. Data collected by CCR include demographics, cancer characteristics, and cancer treatments. Information on the industry and occupation (I&O) of the job held longest by each case are also collected in narrative form. CCR provided the National Institute for Occupational Safety and Health (NIOSH) with de-identified cancer data collected from 1988 to 2007. Because this is a public health surveillance study with analyses conducted on anonymous data without links to personal identifiers, it was exempted from review by the NIOSH Institutional Review Board.

Firefighter Definition

To identify all cancer cases among firefighters, the I&O narrative fields were extensively searched for key words consistent with firefighting. The identified I&Os were coded using 1990 Bureau of Census (BOC) codes. Occupation codes used to indicate a career in firefighting are 413, 416, and 417. All firefighters with these codes were selected regardless of industry. The BOC manual states that the 417 code includes firefighters, fire chief's aides, smoke jumpers, forest-fire fighters, and crash-crew men [U.S. Department of Commerce, 2000]. Their main duties are to control and extinguish fires that threaten life, property or environment, fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster management [U.S. Department of Commerce, 2000]. A total of 29 search terms (e.g., firefighter, fire crew worker) were used to identify and code individuals as BOC code 417.

Individuals who work at a fire department but do not usually carry out firefighting duties have a BOC occupation code of 413 or 416. BOC code 413 indicates positions that supervise and coordinate the firefighter's activities, as well as participate in fire prevention and control [U.S. Department of Commerce, 2000]. A total of 11 search terms (e.g., fire captain, fire chief, and fire marshal) were used to identify and code individuals as BOC code 413. BOC code 416 refers to positions that inspect buildings and firefighting equipment for fire hazards, enforce state and local fire-related ordinances, determine cause of fires or explosions, and recommend fire prevention measures [U.S. Department of Commerce, 2000]. A total of 23 search terms (e.g., fire inspector, arson investigator, forest fire control officers, fire ranger, fire warden, and fire lookout) were used to identify and code individuals as BOC 416. Many of these individuals (i.e., those with BOC codes 413 or 416) likely started their career as firefighters (BOC code 417) and were labeled as firefighters in this study. Because our findings were very similar whether firefighters were defined as BOC code 417 only versus combining 413, 416, and 417, to maximize sample size we report only the findings for the combined definition.

Cancer cases can have multiple cancer records at CCR if they were diagnosed with the same primary cancer multiple times or diagnosed with two or more primary cancers at different times. A separate cancer record is created for each cancer diagnosis or recurrence. The I&O assigned to these cases with multiple cancer records were the I&O present at the initial diagnosis because I&O information from the earliest record is thought to provide the best indication for longest-held job. In addition, some individuals were found to have more than one primary cancer at initial diagnosis. CCR assigned the cancer with the worse prognosis as the "first" primary.

Exclusion Criteria

This study included only adult male subjects (18–97 years of age) who had I&O information available. Excluded were females, homemakers, those with insufficient I&O narratives (e.g., narratives that mentioned only unemployed, disabled, or retired, or were blank), those who never worked, and those in the military.

Selection of Cases and Control Cancers

In situ and benign tumors were excluded. Cancers that spread into surrounding tissues (malignant/invasive), and were identified as the first "malignant" primary were included in this study. The cancer risk among firefighters was assessed for all cancers that included at least 10 firefighters. Control cancers were selected after reviewing the literature for cancers that appeared to have little or no association with firefighting and its related exposures. These control cancers were cancers of the pharynx, stomach, liver, and pancreas. Cancers and histological subtypes were defined using Surveillance, Epidemiology, and End Results Program (SEER) recodes.

Data Analysis

SAS ® 9.3 (Research Triangle Institute, Research Triangle Park, NC) was used. For each type of cancer analyzed, the proportion of cases who were firefighters was compared to the proportion of control cancer cases who were firefighters. Unconditional logistic regression was used to calculate odds ratios (OR) and ORs were adjusted for age at diagnosis (5-year intervals), year of diagnosis (5-year intervals), and race. The Wald test was used to test the level of statistical significance and was defined by a $P < 0.05$.

The risk of cancer among firefighters was examined in three ways: (i) all firefighters combined, (ii) firefighters of other race/ethnicity (i.e., blacks, Hispanics, Asians/Pacific islanders, Indian/Alaskan natives, other/unknown) and, (iii) white firefighters. Analyses of case and control groups were restricted by race category. That is, when other races/ ethnicities were assessed, only other races/ethnicities were included in the case and control groups. The analyses involving only whites were handled similarly. All cancers examined and reported in the “all firefighters combined” group, were also examined and reported in the race-stratified groups.

RESULTS

A total of 2,470,496 cancer reports did not meet the eligibility requirements and were excluded from analysis (Table I). The study sample was selected from 678,132 cancer subjects diagnosed in California who met all eligibility requirements. A total of 48,725 of those in the study sample had a control cancer. Among the control cancers, 31% were diagnosed with pancreatic cancer, 29% with stomach cancer, 23% with liver cancer, and 18% with pharyngeal cancer.

The study sample included 3,996 firefighters. Compared to non-firefighters, firefighters in the study sample were slightly but significantly older (aged 63.3 years vs. 62.6 years) and more likely to be white (90.2% vs. 74%).

Among the 32 examined cancers, three were significantly elevated among all firefighters combined and among firefighters in both race groups (Tables II–IV). These three cancers were melanoma, prostate cancer, and brain cancer.

Three cancers were significantly elevated among all firefighters combined and among white firefighters: adenocarcinoma of the esophagus; non-specific, non-small cell lung cancer; and, acute myeloid leukemia (AML). Three cancers were significantly elevated among all firefighters combined and firefighters of other race/ethnicity: kidney cancer, multiple myeloma, and overall leukemia.

There were six cancers that were significantly elevated among firefighters of other race/ ethnicity only: tongue cancer, testicular cancer, bladder cancer, non-Hodgkin lymphoma, chronic lymphocytic leukemia (CLL), and chronic myeloid leukemia (CML). Neither of the two other groups (i.e., all firefighters combined and white firefighters) had a significantly elevated cancer risk that was unique (i.e., that was not observed in at least one of the other two groups).

There were 18 cancers for which a significantly elevated risk was not found among any firefighter group. These were: cancer of the lip; cancer of the salivary gland; gum and other mouth cancer; pharyngeal cancer; esophageal squamous carcinoma; stomach cancer; colorectal cancer; liver cancer; pancreatic cancer; laryngeal cancer; four lung cancer subtypes (i.e., adenocarcinoma, squamous cell carcinoma, small cell carcinoma, and large cell carcinoma); soft tissue sarcoma; mesothelioma; thyroid cancer; and Hodgkin lymphoma.

DISCUSSION

To our knowledge, this study included more firefighters with cancer than any previous study. This allowed us to assess the association between firefighters and the development of 32 cancers in all firefighters combined, white firefighters, and firefighters of other race/ethnicity. Of the 32 cancers assessed in this analysis of CCR data from 1988 to 2007, the risk for 14 cancers was significantly elevated in one or more firefighter groups. Firefighters of other race/ethnicity had significantly increased risk for more cancers than white firefighters. These findings warrant the need for further investigation of cancer risks among firefighters of other race/ethnicity.

Comparison With a Pooled Cohort of Firefighters from San Francisco, Chicago, and Philadelphia

Daniels et al. [2014] reported mortality and cancer registry findings for firefighters who were employed for at least one day between 1950 and 2009 in fire departments that served San Francisco, Chicago, or Philadelphia. Their findings were similar to ours. Both Daniels et al. [2014] and our study found elevated risks for esophageal and kidney cancer among all firefighters combined and prostate cancer among firefighters of other race/ethnicity. In addition, Daniels et al. [2014] also found significantly elevated risks for melanoma and brain cancer incidence among San Francisco firefighters only, which were also elevated in our study of firefighters in the entire state of California. However, differences were identified when we compared the Daniels et al. [2014] overall findings (all three cities combined) with our study results. Daniels et al. [2014], unlike our study, found a significantly increased risk for mesothelioma and cancers of the pharyngeal/buccal cavity (including lip, tongue, other buccal, and pharynx), colon, larynx, and lung. Our study, unlike Daniels et al. [2014], found an increased risk for non-Hodgkin lymphoma and overall leukemia among all firefighters combined, and an increased risk for testicular cancer, bladder cancer, and multiple myeloma among firefighters of other race/ethnicity. Study design dissimilarities that may explain some of the differences in findings include: (i) the types of firefighters included (structural firefighters in Daniels et al. [2014] vs. all firefighters in ours); (ii) location of fire departments (Daniels et al. [2014] studied three major US cities, whereas we studied California); (iii) Daniels et al. [2014] used a retrospective cohort study design whereas we used a case– control study approach involving cancer registry data only; (iv) Daniels et al. [2014] had a smaller sample size of firefighters of other race/ethnicity with cancer; (v) inclusion of study participants for Daniels et al. [2014] was based on year employed (i.e., between 1950 and 2009), whereas ours was based on year of cancer diagnosis (i.e., between

1988 and 2007); and (vi) inclusion of female firefighters in Daniels et al. [2014] but not in our study.

Comparison With Another Large Firefighter Study and a Meta-Analysis

Two other reports are notable for including large numbers of firefighters: Pukkala et al. [2014] and a meta analysis by LeMasters et al. [2006]. Like our study, Pukkala et al. [2014] and LeMasters et al. [2006] found firefighters to be at significantly increased risk for melanoma and prostate cancer. In addition, our study and LeMasters et al. [2014] found a significantly increased risk for brain cancer and non-Hodgkin lymphoma. Additionally, our study (i.e., only in firefighters of other race/ethnicity) and LeMasters et al. [2006] found an increased risk for multiple myeloma and testicular cancer. Unlike our study, neither Pukkala et al. [2014] or LeMasters et al. [2006] found increased risks for leukemia, or cancers of the esophagus, bladder, or kidney. Differences in findings between Pukkala et al. [2014] and our study may be attributed to sample size (2,536 firefighters with cancer in Pukkala et al. [2014] vs. 3,996 in ours), and differences in geographic region studied (Nordic countries in Pukkala et al. [2014] vs. the state of California).

Commonly Observed Increased Cancer Risks Among Firefighters

The only two cancers consistently found significantly elevated in three large studies [Daniels et al., 2014, Pukkala et al., 2014, and ours] and a meta-analysis [LeMasters et al., 2006] were melanoma and prostate cancer. Significant elevations in two of the studies/meta-analysis, were observed for non-Hodgkin lymphoma, multiple myeloma, and cancers of the tongue, esophagus, colon, testis, kidney, and brain. Significantly increased risks identified in at least one large study/meta-analysis but not ours included: larynx [Daniels et al., 2014]; lung and bronchus [Daniels et al., 2014; Pukkala et al., 2014]; mesothelioma [Daniels et al., 2014]; colon cancer [LeMasters et al., 2006; Daniels et al., 2014] and stomach cancer [LeMasters et al., 2006].

Comparison With Bates [2007]

A previous study by Bates also assessed cancer risks among firefighters using CCR data; however, Bates did not conduct analyses by race and did not examine as many cancers [Bates, 2007]. Both Bates and our study found a significantly increased risk for esophageal, melanoma, prostate, and brain cancers among all firefighters combined. Cancers significantly elevated in one or more of the firefighter groups in our study, but not in Bates were bladder cancer, kidney cancer, non-Hodgkin lymphoma, multiple myeloma, and leukemia. No cancers were significantly elevated in Bates and not in our study.

In addition to conducting analyses by race, there were other differences in study design that likely explain at least some of the differences observed between Bates and our study. These include: (i) Our study used a more exhaustive keyword search for firefighters; (ii) Our study used four more years of data, as our study collected data from 1988 to 2007, while Bates only included data from 1988 to 2003; (iii) Differences in the cancers selected to serve as controls. For each examined cancer, Bates used all other cancers as the controls. In contrast, our study used cancers not thought to be associated with firefighting (i.e., cancers of the pharynx, stomach, liver, and pancreas); (iv) Our study examined more cancers. Only one cancer examined in our study but not by Bates had a significantly elevated risk: cancer of the tongue.

Firefighters of Other Race/Ethnicity

Firefighters of other race/ethnicity had significantly elevated risks for 12 cancers (tongue, melanoma, prostate, testicular, bladder, kidney, brain, non-Hodgkin, multiple myeloma, leukemia [overall], CLL, and CML). In contrast, only six cancers were significantly elevated among white firefighters.

Most of the 365 firefighters of other race/ethnicity in our study were Hispanic (62.2%) or black (27.7%). Since Hispanics and blacks generally have higher incidence rates for cancers than Asians [United States Cancer Statistics Working Group, 2014] and less than 10% of firefighters of other race/ethnicity were Asians, cancer risks observed among firefighters of other race/ethnicity were most likely driven by the Hispanic and black firefighters.

The reasons for the race/ethnicity-associated differences in our findings are unclear. Race/ethnicity is related to general constraints that can lead to differential access to opportunities in society [Jones, 2001]. In addition, those of other race/ethnicity have historically been subjected to prejudice and discrimination [Jones, 2001], including those seeking employment or promotion in fire departments [Ricucci and Saldivar, 2014]. Furthermore, those of other race/ethnicity may have selectively been assigned to busier fire stations. This is supported by studies of other industries that demonstrated that workers of other race/ethnicity may be more frequently exposed to occupational hazards than white workers [Birdsey et al., 2007]. These societally imposed conditions, as experienced by firefighters of other race/ethnicity, may lead to differential exposure to carcinogens or may heighten susceptibility to the effects of carcinogenic exposures.

To our knowledge, only two other studies reported cancer risks among firefighters of other race/ethnicity: Daniels et al. [2014] and Ma et al. [1998]. Ma et al. [1998] looked only at black firefighters, whereas Daniels et al. [2014] did not report the race/ethnicity distribution of firefighters of other race/ethnicity. Our study included more firefighters of other race/ethnicity with cancer (n=365) than Daniels et al. [2014] or Ma et al. [1998] (n=240 and n=66, respectively). Daniels et al. [2014] found only prostate cancer at significantly increased risk among firefighters of other race/ethnicity. Ma et al. [1998] found significantly increased risks for cancers of the prostate and brain among firefighters of other race/ethnicity, as in our study; they also found significant increases in nasopharyngeal and colon cancers, unlike our study. Differences between Ma et al. [1998] and our study may be due to our inclusion of nonwhite race/ethnicity other than blacks in our study, and different study periods. In addition, our larger study population of other race/ethnicity may have allowed us to detect more differences. Moreover, the evolving mix of carcinogenic exposures among firefighters may have also affected the types of cancer that were observed.

Prostate Cancer

The prostate is a hormone-regulated gland (i.e., testosterone). Chemicals, such as pesticides, cadmium, Bisphenol A (BPA), or PCB, have been shown to be endocrine disruptors [Diamanti-Kandarakis et al., 2009] that interfere with androgen metabolism. This disruption elevates the bioavailability of androgen which can initiate prostate cancer. The increased prostate cancer risk could also be due to an increased frequency of prostate cancer screening among firefighters as compared to the general population. Such a screening effect is supported by a recent study showing a lack of a positive dose-response relationship between fire-fighting exposure and prostate cancer incidence and mortality [Daniels et al., 2015].

Melanoma

Although exposure to ultraviolet radiation (i.e., sunlight, tanning beds) is commonly associated with melanoma, melanoma has also been found on the unexposed skin of petrochemical refinery workers [Mehlman, 2006]. Researchers have found a significant positive association between melanoma and exposure to benzene, PAH, PCB, aromatic hydrocarbons, and heavy oil [Mehlman, 2006].

Esophageal Cancer

The inhalation of smoke and dust during fire suppression activities and overhaul may have contributed to an increased risk of esophageal cancer. It is possible that mucociliary clearance of combustion products in the trachea led to esophageal irritation and inflammation. The inflammatory response, such as the infiltration of reactive oxygen species and inflammatory mediators, may further damage esophageal tissue [Kavanagh et al., 2014]. A study following a group of firefighters who responded to the 9/11 attack found an increased prevalence of gastroesophageal reflux disease (GERD) symptoms (5.8% prevalence pre-9/11 to a prevalence of 40% 4 years post 9/11) [Webber et al., 2009]. GERD is a strong predictor for esophageal adenocarcinoma, the most common type of esophageal cancer today [Lagergren and Lagergren, 2013]. Our study found that 68% of esophageal cancer in firefighters was adenocarcinoma, and that only esophageal adenocarcinoma, and not squamous carcinoma, was significantly elevated among firefighters.

Limitations

This study has several limitations. First, using other cancer cases as controls may bias our findings towards the null if the selected control cancers are related to firefighting exposures. To minimize this bias, we did a comprehensive literature review of cancers found to be elevated among firefighters. Cancers that consistently showed very weak or no association with firefighters were selected as control cancers. Second, I&O data were missing for approximately 50% of cancer cases in CCR. Individuals in the CCR dataset who had unknown I&O were more likely to be older and of Hispanic descent compared to the CCR cases meeting study eligibility. Ascertainment bias would be present if the proportion of firefighters who were ascertained by the CCR varied across the different cancers. However, the California cancer presumption law enacted in 1982 and amended periodically can award compensation and benefits to any firefighter diagnosed with any cancer within 10 years of their last day worked [William Dallas Jones Cancer Presumption Act, 2010]. It should be noted that the employer can challenge the firefighter’s compensation filing on the basis of an insufficient latency period (i.e., 10 years or less), or if the employer can prove that the association between the cancer and firefighting has been examined scientifically and shown not to exist [Heald, 2005]. Since firefighters can presume that any cancer was caused by work, it is unlikely that ascertainment bias was introduced. Third, because I&O recording is not standardized, I&O data obtained may not be the longest-held job, but rather the current job. It is reassuring that findings based on large representative samples of U.S. workers found moderate to high correlation between current and longest-held job [Gomez-Marin et al., 2005; Luckhaupt et al., 2013], indicating that current job may be an acceptable surrogate for longest-held job. Fourth, those who worked as volunteer firefighters may have been classified as non-firefighters in our analyses because it is unlikely that volunteer firefighting was captured as the longest-held job. Conversely, some individuals with the designation of firefighter in this study may not have been involved in firefighting. The former misclassification of fire-fighting exposure may have biased the estimates towards the null, and it's not clear how the latter misclassification would bias our findings. Fifth, CCR does not have information on smoking, alcohol consumption, obesity, workplace exposures, length of employment, and actual job duties. Although many cancers of interest are influenced by lifestyle factors, this study was not able to adjust for these potential confounders. Recent studies found that firefighters working in the central region of the United States were less likely to smoke [Haddock et al., 2011], but have high rates of heavy and binge drinking on their off-duty days [Haddock et al., 2012]. Any differences in lifestyle factors could have biased our estimates in either direction. Sixth, due to small sample sizes, we were unable to examine blacks, Hispanics, and Asians separately. Finally, this study did not adjust for multiple comparisons and some findings may have arisen due to chance. Nevertheless, it is reassuring that many of the findings from this study are similar to those of previous studies.

Strengths

CCR is one of the most comprehensive and complete cancer registries with a case ascertainment rate of at least 95% [North American Association of Central Cancer Registries, 2008,2015]. In addition, our study is among the largest cancer studies of firefighters. It is also one of the few studies that reported firefighter risk for cancer subtypes, including for leukemia, esophageal cancer, and lung cancer. Finally, ours is one of the few studies that reported findings for firefighters of other race/ethnicity.

CONCLUSION

This study found that firefighters had a significantly elevated risk for melanoma, multiple myeloma, leukemia (i.e., AML), and cancers of the esophagus, prostate, kidney, and brain. Moreover, firefighters of other race/ethnicity, in addition to being at significantly increased risk for the same cancers identified for all firefighters combined, were found to have a significantly increased risk for non-Hodgkin lymphoma, leukemia (i.e., CLL, CML) and cancers of the tongue, testis, and bladder. The consistency of many of these findings with prior large studies (i.e., melanoma, non-Hodgkin lymphoma, multiple myeloma, and cancers of the prostate, esophagus, testis, bladder, kidney, and brain) strengthens the evidence supporting the association between firefighting exposures and these cancers.

Acknowledgments

Contract grant sponsor: National Cancer Institute's Surveillance, Epidemiology and End Results Program; Contract grant number: HHSN261201000140C; Contract grant sponsor: National Cancer Institute's Surveillance, Epidemiology and End Results Program; Contract grant number: HHSN261201000035C; Contract grant sponsor: National Cancer Institute's Surveillance, Epidemiology and End Results Program; Contract grant number: HHSN261201000034C; Contract grant sponsor: Centers for Disease Control and Prevention's National Program of Cancer Registries; Contract grant number: U58DP003862-01; Contract grant sponsor: Centers for Disease Control and Prevention's National Program of Cancer Registries; Contract grant number: 1U58DP000807-3.

The authors thank the following individuals for their review of earlier versions of this manuscript: Dr. Doug (Robert) Daniels and Dr. David Lee. The collection of data used in this publication was supported by the California Department of Health Services as part of the statewide cancer reporting program mandated by California Health and Safety Code Section 103885; by the National Cancer Institute, National Institutes of Health, Department of Health and Human Services under Contract No. N01-PC-2010-00035; and grant number 1U58DP000807-3 from the Centers for Disease Control and Prevention.

The study was conducted at the National Institute for Occupational Safety and Health.

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TABLE I

Number of Individuals Eligible for Study Inclusion, and Number Excluded From Study by Reason

	n	Total n
Total number of cancer records in CCR		3,148,628
Excluded: in-situ, benign, borderline cancers	346,379	
Excluded: multiple records[a]	251,501	
Excluded: non-first primary	168,696	
Excluded gender: Females, other, unknown gender	1,159,007	
Subtotal[b]		1,223,045
Industry and occupation (I&O) exclusions		
Unemployed, or unknown I&O	308,753	
Never worked	29,400	
Homemaker	366	
Retired	193,276	
Military	10,475	
Subtotal after I&O exclusions		680,775
Age exclusions		
Age <18, or >97 years	2,644	
Total eligible for study		678,132

[a] Individuals with more than one cancer diagnosis may have more than one cancer record. The first primary malignant cancer diagnosis recorded in CCR was retained in this study.

[b] Subtotal after benign/in-situ tumors, non-first primary cancer, multiple record, and gender exclusions.

TABLE II

Odds Ratios for Various Cancers Among Firefighters—All Races Combined, California, 1988–2007

Cancer	SEER code	Number of firefighters N	%[a]	OR[b]	95%CI
Head and neck					
Lip	20010	19	0.96	1.44	0.89–2.33
Tongue	20020	35	0.65	1.18	0.82–1.70
Salivary gland	20030	14	0.70	1.30	0.75–2.25
Gum and other mouth	20050	14	0.56	1.07	0.62–1.85
Pharyngeal	20060–20100	43	0.50	1.06	0.75–1.50
Digestive					
Esophagus	21010	68	0.82	**1.59**	**1.20–2.09**
Esophagus-adenocarcinoma		46	1.04	**1.85**	**1.34–2.55**
Esophagus-squamous carcinoma		12	0.43	0.96	0.53–1.73
Stomach	21020	52	0.37	0.81	0.59–1.11
Colorectal	21041–21252	347	0.55	1.10	0.93–1.31
Liver	21071	39	0.35	1.07	0.75–1.53
Pancreas	21100	79	0.53	1.10	0.83–1.46
Respiratory					
Larynx	22020	25	0.32	**0.59**	**0.39–0.89**
Lung and bronchus	22030	533	0.58	1.08	0.92–1.28
Lung-adenocarcinoma[c]		173	0.58	1.10	0.89–1.35
Lung-squamous cell[c]		95	0.48	0.89	0.69–1.14
Lung-small cell[c]		82	0.69	1.24	0.95–1.61
Lung-large cell[c]		25	0.48	0.84	0.55–1.28
Lung-non-specific non-small cell cancer[c]		42	0.87	**2.01**	**1.38–2.93**
Connective tissue/skin					
Soft tissue, including heart	24000	26	0.54	1.16	0.76–1.77
Melanoma	25010	265	1.06	**1.75**	**1.44–2.13**
Mesothelioma[d]		21	0.75	1.40	0.89–2.21

Cancer	SEER code	Number of firefighters			
		N	%[a]	OR[b]	95%CI
Urinary/reproductive					
Prostate	28010	1397	0.72	**1.45**	**1.25–1.69**
Testis	28020	85	0.67	1.10	0.73–1.66
Urinary bladder	29010	106	0.56	0.99	0.78–1.26
Kidney	29020	115	0.62	**1.27**	**1.01–1.59**
Cranial/endocrine					
Brain	31010	87	0.75	**1.54**	**1.19–2.00**
Thyroid	32010	41	0.64	1.27	0.88–1.84
Blood					
Hodgkin lymphoma	33011–33012	29	0.52	1.15	0.72–1.83
Non-Hodgkin lymphoma	33041–33042	183	0.60	1.22	1.00–1.50
Multiple myeloma	34000	55	0.64	**1.35**	**1.00–1.82**
Leukemia	35011–35043	122	0.64	**1.32**	**1.05–1.66**
CLL	35012	43	0.74	1.34	0.96–1.87
AML	35021, 35031	42	0.69	**1.44**	**1.02–2.02**
CML	35022	21	0.73	1.51	0.95–2.40

SEER code = recode based on ICD-O-3 (http://seer.cancer.gov/siterecode/). A total of 187 firefighters had rare cancers (i.e., cancers with fewer than 10 firefighter cases) and these rare cancers are not included in this table. The race was not stated for 2,719 individuals. Bolded values indicate a statistically significantly elevated (or decreased) OR at $P < 0.05$.

OR, odds ratio; CI, confidence interval; ALL, acute lymphocytic leukemia; CLL, chronic lymphocytic leukemia; Other LL, other lymphocytic leukemia; AML, acute myeloid leukemia; CML, chronic myeloid leukemia.

[a] Controls consist of cancers of the pharynx, stomach, liver, and pancreas; 0.44% of individuals with control cancers were firefighters. This 0.44% applies to the comparison group for all case cancer examined except for pharyngeal, stomach, liver, and pancreatic cancers (which were also control cancers), where 0.42%, 0.46%, 0.46%, and 0.40% of individuals with control cancers were firefighters respectively (i.e., these represent the proportion of firefighters when the case cancer was removed from the control group).

[b] Adjusted for age of diagnosis, race, and year of diagnosis.

[c] Histological subtype of lung cancer. International Classification of Diseases for Oncology (ICD-O3 codes) for Adenocarcinoma = 8050, 8051, 8140, 8141, 8143, 8147, 8200, 8201, 8250–8255, 8260, 8310, 8320, 8323, 8430, 8480, 8481, 8490, 8550, 8551, 8560, 8562, 8570–8576; Squamous Cell = 8052, 8070–8076, 8078; Small Cell = 8002, 8041–8045; Large Cell = 8012–8014; Non-Small Cell Cancer, unspecified = 8046.

[d] Histological subtype of mesothelioma: ICD-O3 code = 9050–9055.

TABLE III

Odds Ratios for Various Cancers Among Firefighters* of Other Race/Ethnicity—California, 1988–2007

Cancer	SEER code	Number of firefighters N	%[a]	OR[b]	95%CI
Head and neck					
Lip	20010	1	0.67	6.56	0.87–49.58
Tongue	20020	4	0.41	**3.57**	**1.23–10.35**
Salivary gland	20030	2	0.45	3.60	0.83–15.59
Gum and other mouth	20050	1	0.16	1.50	0.20–11.15
Pharyngeal	20062–20100	4	0.15	1.35	0.45–4.05
Digestive					
Esophagus	21010	5	0.26	2.14	0.81–5.65
Esophagus-adenocarcinoma		2	0.37	2.79	0.66–11.87
Esophagus-squamous carcinoma		2	0.18	1.44	0.34–6.14
Stomach	21020	10	0.17	1.61	0.71–3.65
Colorectal	21041–21052	30	0.18	1.41	0.82–2.41
Liver	21071	5	0.08	0.51	0.19–1.39
Pancreas	21100	5	0.12	0.90	0.33–2.45
Respiratory					
Larynx	22020	0			
Lung and bronchus	22030	26	0.13	1.01	0.57–1.78
Lung-adenocarcinoma[c]		8	0.11	0.89	0.40–2.00
Lung-squamous cell[c]		5	0.12	0.78	0.29–2.11
Lung-small cell[c]		1	0.05	0.36	0.05–2.71
Lung-large cell[c]		0			
Lung-non-specific non-small cell cancer[c,d]		5	0.37	2.42	0.86–6.80
Connective tissue/skin					
Soft tissue, including heart	24000	2	0.13	1.39	0.32–5.98
Melanoma	25010	7	0.61	**4.51**	**1.85–10.97**
Mesothelioma[e]		2	0.38	2.86	0.67–12.28

Cancer	SEER code	Number of firefighters N	%[a]	OR[b]	95%CI
Urinary/reproductive					
Prostate	28010	125	0.27	**2.42**	**1.53–3.84**
Testis	28020	15	0.43	**3.73**	**1.26–11.02**
Urinary bladder	29010	8	0.29	**2.37**	**1.05–5.33**
Kidney	29020	18	0.33	**2.59**	**1.40–4.80**
Cranial/endocrine					
Brain	31010	10	0.38	**3.58**	**1.65–7.74**
Thyroid	32010	5	0.25	1.92	0.66–5.60
Blood					
Hodgkin lymphoma	33011–33012	4	0.25	2.50	0.76–8.28
Non-Hodgkin lymphoma	33041–33042	24	0.30	**2.17**	**1.20–3.92**
Multiple myeloma	34000	13	0.47	**3.77**	**1.91–7.44**
Leukemia	35011–35043	20	0.41	**3.64**	**1.96–6.74**
CLL	35012	7	0.86	**7.04**	**2.99–16.56**
AML	35021, 35031	2	0.11	1.12	0.26–4.76
CML	35022	6	0.61	**4.91**	**1.84–13.12**

SEER code =recode based on ICD-O-3 (http://seer.cancer.gov/siterecode/). Bolded values indicate a statistically significantly elevated (or decreased) OR at P <0.05.

OR, odds ratio; CI, confidence Interval; ALL, acute lymphocytic leukemia; CLL, chronic lymphocytic leukemia; Other LL, other lymphocytic leukemia; AML, acute myeloid leukemia; CML, chronic myeloid leukemia.

[*] Other race/ethnicity consists of individuals who were Black, Hispanic, Asian/Pacific Islander, Indian/Alaskan Native, and Other/unknown race.

[a] Controls consist of cancers of the pharynx, stomach, liver, and pancreas; 0.13% of individuals with control cancers were firefighters. This 0.13% applies to the comparison group for all case cancer examined except for pharyngeal, stomach, and liver cancers (which were also control cancers), where 0.12%, 0.11%, and 0.15% of individuals with control cancers were firefighters respectively (i.e., these represent the proportion of firefighters when the case cancer was removed from the control group).

[b] Adjusted for age of diagnosis and year of diagnosis.

[c] Histological subtype of lung cancer. International Classification of Diseases for Oncology (ICD-O3 codes) for Adenocarcinoma = 8050, 8051, 8140, 8141, 8143, 8147, 8200, 8201, 8250–8255, 8260, 8310, 8320, 8323, 8430, 8480, 8481, 8490, 8550, 8551, 8560, 8562, 8570–8576; Squamous Cell = 8052, 8070–8076, 8078; Small Cell = 8002, 8041–8045; Large Cell = 8012–8014; Non-Small Cell Cancer, unspecified = 8046.

[d] Firth bias-correction applied.

[e] Histological subtype of mesothelioma: ICD-O3 code = 9050–9055.

TABLE IV

Odds Ratios for Various Cancers Among White Firefighters—California, 1988–2007

		Number of firefighters			
Cancer	**SEER code**	**N**	**%[a]**	**OR[b]**	**95%CI**
Head and neck					
Lip	20010	17	0.95	1.36	0.82–2.25
Tongue	20020	31	0.70	1.10	0.75–1.61
Salivary gland	20030	12	0.77	1.19	0.66–2.15
Gum and other mouth	20050	13	0.70	1.06	0.60–1.87
Pharyngeal	20062–20100	38	0.66	1.03	0.71–1.48
Digestive					
Esophagus	21010	63	0.99	**1.59**	**1.19–2.12**
Esophagus-adenocarcinoma		44	1.14	**1.84**	**1.32–2.56**
Esophagus-squamous carcinoma		10	0.61	0.94	0.49–1.78
Stomach	21020	42	0.51	0.73	0.52–1.03
Colorectal	21041–21052	317	0.69	1.08	0.90–1.30
Liver	21071	34	0.70	1.21	0.83–1.76
Pancreas	21100	74	0.67	1.14	0.85–1.54
Respiratory					
Larynx	22020	25	0.41	**0.64**	**0.42–0.97**
Lung and bronchus	22030	506	0.71	1.10	0.92–1.30
Lung-adenocarcinoma[c]		164	0.73	1.11	0.90–1.38
Lung-squamous cell[c]		90	0.58	0.90	0.70–1.17
Lung-small cell[c]		81	0.84	1.30	1.00–1.70
Non-large cell[c]		25	0.62	0.89	0.58–1.36
Non-specific, non-small cell cancer[c]		37	1.07	**2.02**	**1.34–3.04**
Connective tissue/skin					
Soft tissue, including heart	24000	24	0.73	1.16	0.75–1.82
Melanoma	25010	254	1.09	**1.71**	**1.40–2.09**
Mesothelioma[d]		19	0.85	1.34	0.83–2.16

Cancer	SEER code	Number of firefighters			
		N	%[a]	OR[b]	95%CI
Urinary/reproductive					
Prostate	28010	1256	0.87	**1.40**	**1.19–1.64**
Testis	28020	70	0.78	0.91	0.58–1.44
Urinary bladder	29010	98	0.61	0.94	0.73–1.21
Kidney	29020	96	0.74	1.16	0.91–1.49
Cranial/endocrine					
Brain	31010	76	0.85	**1.41**	**1.07–1.87**
Thyroid	32010	36	0.82	1.21	0.81–1.80
Blood					
Hodgkin lymphoma	33011–33012	25	0.64	1.07	0.63–1.80
Non-Hodgkin lymphoma	33041–33042	159	0.71	1.16	0.94–1.45
Multiple myeloma	34000	42	0.73	1.17	0.84–1.64
Leukemia	35011–35043	101	0.73	1.17	0.91–1.49
CLL	35012	36	0.73	1.17	0.82–1.67
AML	35021, 35031	40	0.93	**1.46**	**1.03–2.08**
CML	35022	14	0.74	1.14	0.66–1.99

EER code =recode based on ICD-O-3 (http://seer.cancer.gov/siterecode/). Bolded values indicate a statistically significantly elevated (or decreased) OR at P <0.05.

OR, odds ratio; CI, confidence interval; ALL, acute lymphocytic leukemia; CLL, chronic lymphocytic leukemia; Other LL, other lymphocytic leukemia; AML, acute myeloid leukemia; CML, chronic myeloid leukemia.

[a]Controls consists of cancers of the pharynx, stomach, liver, and pancreas; 0.63% of individuals with control cancers were firefighters. This 0.63% applies to the comparison group for all case cancer examined except for pharyngeal, stomach, liver and pancreatic cancers (which were also control cancers), where 0.62%, 0.67%, 0.62%, and 0.61% of individuals with control cancers were firefighters respectively (i.e., these represent the proportion of firefighters when the case cancer was removed from the control group).

[b]Adjusted for age of diagnosis and year of diagnosis.

[c]Histological subtype of lung cancer. International Classification of Diseases for Oncology (ICD-O3 codes) for Adenocarcinoma = 8050, 8051, 8140, 8141, 8143, 8147, 8200, 8201, 8250–8255, 8260, 8310, 8320, 8323, 8430, 8480, 8481, 8490, 8550, 8551, 8560, 8562, 8570–8576; Squamous Cell = 8052, 8070–8076, 8078; Small Cell = 8002, 8041–8045; Large Cell = 8012–8014; Non-Small Cell Cancer, unspecified = 8046.

[d]Histological subtype of pleural mesothelioma[d] (ICD-O3 code = 9050–9055).

Office of the City Manager

09

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Lisa Warhuus, Director, Health, Housing, and Community Services

Subject: Contract: Interior Motions for HHCS Public Health Division Furniture

RECOMMENDATION

Adopt a Resolution authorizing the City Manager or her designee to execute a contract, and any amendments or extensions, with Interior Motions for new furniture for the Public Health Division offices.

The contract will be in an amount not to exceed $100,000 for the period January 1, 2022 through December 30, 2022.

FISCAL IMPACTS OF RECOMMENDATION

Interior Motions, a City vendor, has been selected to furnish the Public Health Division Office in preparation for a number of staff and program moves. Interior Motions has met all of the steps of the City's competitive Request for Proposal process and has submitted a revised quote with final pricing. The original and revised pricing proposal includes delivery, assemblage, and installation of all furniture.

The contract will have a total not to exceed amount of $100,000 from Account 011-51-506-555-0000-000-451-651120.

CURRENT SITUATION AND ITS EFFECTS

The Public Health Division provides a variety of services and programs to the community, including Maternal, Child, Health, Emergency Preparedness, Tobacco Programs, Oral Health, and Nutrition Services. The Public Health Division has several organizational changes underway, including multiple staff and program relocations across three locations, resulting in a need for additional furniture and equipment. Additionally, furniture and equipment are needed to provide accommodations for social distancing and workplace ergonomics. Updated furnishings will enable our staff and community members to engage safely in socialization and health promotion activities.

The furniture contract with Interior Motions will enable the Public Health Division to provide welcoming and well-maintained facilities in order to foster dynamic and sustainable service provision to the community.

BACKGROUND

The City released a Request for Proposals (RFP) under Specification No. 22-11486-C, conducted a voluntary site walk-thru, and convened a panel of stakeholders to select Interior Motions as the most responsive and responsible bidder for this contract.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no environmental impacts identified at this time.

RATIONALE FOR RECOMMENDATION

Interior Motions is a current City vendor. Their proposal includes high quality furniture that aligns with the intended multifunctional uses for HHCS facilities.

ALTERNATIVE ACTIONS CONSIDERED

The City could not provide updated furniture to staff, and program, staffing and safety practices would be limited by the use of existing furniture.

CONTACT PERSON

Janice Chin, Public Health Division Manager, HHCS, (510) 981-5121

Attachments:
1: Resolution

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

CONTRACT: INTERIOR MOTIONS FOR HHCS FURNITURE

WHEREAS, new office furniture and equipment will serve current and future staff to operate programs and services; and

WHEREAS, new office furniture and equipment will also provide a more efficient delivery of services to community members; and

WHEREAS, Interior Motions was selected by the City's RFP process which includes bidding from vendors, draft proposals, and pricing; and

WHEREAS, funds are available in the current year budget in the 011-51-506-555-0000-000-451-651120

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager or her designee is authorized to execute a contract and any amendments, with Interior Motions to deliver, assemble, and install office furniture and equipment for the Public Health Division in an amount not to exceed $100,000 for the period January 1, 2022 thru December 30, 2022. A record signature copy of said contract and any amendments to be on file in the City Clerk Department.

Office of the City Manager

10

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Lisa Warhuus, Director, Health, Housing, and Community Services

Subject: Contract No. 32100178 Amendment: California Mental Health Services Authority Help@Hand Participation Agreement

RECOMMENDATION

Adopt a Resolution authorizing the City Manager or her designee to execute an Amendment to the Help@Hand Participation Agreement with the California Mental Health Services Authority (CalMHSA) (Contract No.32100178) to increase the amount of funding by $140,800 for a total amount not to exceed $541,715 through June 30, 2024, and any amendments.

FISCAL IMPACTS OF RECOMMENDATION

In this amendment $140,800 will be provided from Medi-Cal Funds for a total not-to-exceed contract amount of $542,715. The funds will be appropriated into the Medi-Cal budget code 316-51-503-520-0000-000-451-636110 as part of the Second Amendment to the FY 2022 Annual Appropriations Ordinance. The City previously committed $400,915 of Mental Health Services Act (MHSA) funds to this project.

CURRENT SITUATION AND ITS EFFECTS

The City receives State Mental Health Services Act (MHSA) Innovations (INN) funds on an annual basis. MHSA regulations require that MHSA INN are to be utilized on short term pilot projects that increase learning in the mental health field.

Help@Hand is a MHSA INN funded multi-county collaborative project which provides broad public access to mental health technology applications. In the Help@Hand Project there are currently ten counties and two cities (Berkeley, and Tri-City) who have come together through the California Mental Health Services Authority (CalMHSA), a Joint Powers Authority (JPA), to fund free access to mental health technology applications.

In November 2021, Help@Hand launched a local marketing campaign and made free access to the HeadSpace and myStrength applications available to anyone who lives, works, or goes to school in Berkeley. Since then, public interest in Headspace has been much greater than originally anticipated. In order to provide access to Headspace for more people, the CalMHSA Help@Hand Participation Agreement (Contract No.

32100178) needs to be amended to add $140,800 to the project. These funds will be used to purchase and manage an additional 5,000 user slots (for a total of 10,000) until fall 2023.

BACKGROUND

State of California MHSA funds are provided to mental health jurisdictions to transform the mental health system through five funding components. The INN component is comprised of annually recurring funds for short-term pilot projects that contribute new learning in the mental health field. The MHSA program requires jurisdictions receiving the funds to create a stakeholder-informed, locally-approved plan.

On June 26, 2018, per Resolution No. 68,493 –N.S., City Council approved the MHSA INN Technology Suite Project Plan, which has since been renamed, “Help@Hand”. This project allocates $462,916 of INN funds to make mental health technology apps locally accessible in Berkeley. With Resolution 69,514 –N.S., the City Council approved entering into a Participation Agreement with CalMHSA and allocated $352,916 in MHSA INN funds to participate in this project. A portion of the remaining funds was used on project coordination services from Resource Development Associates. An evaluation conducted by Hatchuel, Tabernik and Associates will also be purchased with these funds. On November 30, 2021, per Resolution No. 70,122 – N.S., City Council approved the amendment of Contract No. 32100178 to add $47,999 of local project funds for this project.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable environmental effects or opportunities associated with the subject of this project.

RATIONALE FOR RECOMMENDATION

Staff recommend allocating additional funds to the Help@Hand Participation Agreement in order to purchase access for the Headspace application for more people to meet community needs. The COVID-19 pandemic has increased isolation and limited access to mental health resources for many Berkeley residents; contributing to much greater demand for these applications than originally anticipated. Making HeadSpace available to the community is an innovative approach that has provided individuals with access to mental health resources, information, and supports.

ALTERNATIVE ACTIONS CONSIDERED

The City could choose not to increase the amount of funds for this project, which would limit the number of community members that would be able access the HeadSpace App. This action is not recommended as it is not consistent with the City’s MHSA Innovation Plan or Council’s previous direction.

<u>CONTACT PERSON</u>
Karen Klatt, Community Services Specialist III, HHCS, (510) 981-7644

Attachments:
1: Resolution

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

CONTRACT 32100178: AMENDMENT FOR HELP@HAND WITH THE CALIFORNIA MENTAL HEALTH SERVICES AUTHORITY

WHEREAS, the City's Department of Health, Housing & Community Services, Mental Health Division, currently receives Mental Health Services Act (MHSA) Innovations (INN) funds on an annual basis for short term projects that will increase learning in the mental health field through strategies that will either improve the access, quality, or outcomes of services, and/pr promote community collaborations; and

WHEREAS, in order to utilize MHSA INN funds, the Mental Health Division must have a stakeholder informed, locally approved plan in place; and

WHEREAS, by Resolution No. 68,493-N.S., the City Council authorized the City Manager to approve the MHSA INN Technology Suite Project Plan to implement technology-based mental health services and supports in Berkeley utilizing $462,916 by June 30, 2021; and

WHEREAS, the MHSA INN Technology Suite project is part of a multi-county collaborative that utilizes a Joint Powers Authority (JPA), the California Mental Health Servjces Authority (CalMHSA), as the fiduciary intermediary for the project; and

WHEREAS, the multi-county collaborative renamed the Technology Suite project to the "Help@Hand" project; and

WHEREAS, in order to allocate funds to the fiscal intermediary to participate in the multi-county collaborative, the City of Berkeley was required to enter into a Participation Agreement with CalMHSA; and

WHEREAS, per Resolution No. 69,514-N.S., the City Council authorized the City Manager to enter into a Participation Agreement with CalMHSA and to extend the project to June 30, 2024; and

WHEREAS, the City executed Contract No. 32100178 to enter into a Participation Agreement and allocate $352,916 of Help@Hand project funds to CalMHSA; and

WHEREAS, per Resolution No. 70,122-N.S., the City Council authorized the City Manager to amend Contract No. 32100178 to revise the Participation Agreement and add $47,999 of funds for the project for a total not to exceed amount of $400,915; and

WHEREAS, public interest in the HeadSpace application has been higher than originally anticipated, and the City wishes to expand access to it; and

WHEREAS, in order to revise the Participation Agreement and allocate additional funds for this project, the City must amend Contract No. 32100178 with CalMHSA; and

WHEREAS, funding for this contract has been included in the FY 2022 Budget and is available in ERMA GL Code 316-51-503-520-0000-000-451-636110 subject to approval of the Second Amendment to the FY2022 Annual Appropriations.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager or her designee is hereby authorized to execute an Amendment to Contract No. 32100178 to revise the Help@Hand Participation Agreement and any amendments with CalMHSA to increase the amount by $140,800, for a total amount not to exceed $541,715, through June 30, 2024.

11

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Lisa Warhuus, Director, Health, Housing and Community Services Department

Subject: Revenue Contract: Alameda County Behavioral Health Care Services

RECOMMENDATION

Adopt a Resolution authorizing the City Manager or her designee to execute a revenue contract amendment with Alameda County Behavioral Health Care Services (ACBH) for the provision of mental health services, including Medi-Cal, Medicare, Educationally Related Mental Health Services (ERMHS), and Early Periodic Screening, Diagnosis and Treatment (EPSDT) billing and reimbursement, with an Effective Date of July 1, 2021.

FISCAL IMPACTS OF RECOMMENDATION

The proposed revenue contract sets out the conditions under which the City will receive reimbursement for mental health services provided to eligible individuals that are billed through Alameda County to the State of California, and for services funded by Alameda County directly. There is no fixed "not to exceed" amount in the contract because the amount of revenue will fluctuate each year based on the amount of billable services provided. ACBH will charge the City of Berkeley a flat fee of $100,000 annually for administrative services provided as part of the agreement. The fee is taken out of the City's reimbursement. Revenue funds will be deposited in revenue budget codes 065-4431-331-4090, 065-4401-331-4045, 065-4445-331.40-88, 065-4406-331.40-86, 065-4455-331.40-89, 065-4431-331.40-87, and 065-4431-331.40-90.

CURRENT SITUATION AND ITS EFFECTS

Alameda County and the City of Berkeley are amending a revenue contract covering mental health services performed by the City of Berkeley as part of the Alameda County Behavioral Healthcare Plan. This amendment establishes a new "Effective date" rather than a start and end date, so that the agreement can be considered ongoing and will remain in place if future amendments need to be negotiated.

BACKGROUND

The City of Berkeley has had a contract with Alameda County for mental health services reimbursement since July 1, 2011 as a result of Resolution No. 65,438-N.S., passed by the Berkeley City Council on September 11, 2011. On April 20, 2021, via Resolution No.

69, 796-N.S., City Council approved entering into Contract No. 42100097 to clarify the relationship between the two parties.

In order to streamline the annual contract renewal process with City of Berkeley, the contract has an effective date rather than a specific time period. This is consistent with past practice. If there are updates needed for the contract, negotiated changes will be noted through subsequent amendments. This contract's new Effective Date is July 1, 2021.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
There are no identifiable environmental effects, climate impacts, or sustainability opportunities associated with the subject of this report.

RATIONALE FOR RECOMMENDATION
There is mutual interest by the City and County in execution of this contract. It ensures that the City's mental health programs will follow applicable regulations and requires the County to provide the City with timely billing and reimbursement.

ALTERNATIVE ACTIONS CONSIDERED
No alternative action was considered because of the need to maintain this critical relationship with Alameda County for the provision of mental health services by the City of Berkeley.

CONTACT PERSON
Steven Grolnic-McClurg, Manager of Mental Health, (510) 981-5249
Conor Murphy, Assistant Management Analyst, HHCS, (510) 981-7611

Attachments:
1: Resolution

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

REVENUE CONTRACT: ALAMEDA COUNTY FOR MENTAL HEALTH SERVICES

WHEREAS, Alameda County and the City of Berkeley jointly agreed to create a new contract to clarify the relationship between these two parties. This revenue contract will facilitate the receipt of funding for the mental health services provided by the City's Mental Health Division, including Medi-Cal, Medicare, Educationally Related Mental Health Services (ERMHS), and Early Periodic Screening, Diagnosis and Treatment (ESPDT) billing and reimbursement; and

WHEREAS, there is mutual interest by the City and County in execution of this contract. The agreement ensures that the City's mental health programs will follow applicable regulations and requires the County to provide the City with timely billing and reimbursement; and

WHEREAS, the City utilizes the revenue received to fund a wide variety of mental health programs for residents of Berkeley. ACBH will charge the City of Berkeley a flat fee of $100,000 annually for administrative services provided as part of the agreement. The revenue received will be deposited into revenue budget codes: 065-4431-331-4090, 065-4401-331-4045, 065-4445-331.40-88, 065-4406-331.40-86, 065-4455-331.40-89, 065-4431-331.40-87, and 065-4431-331.40-90.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager or her designee is authorized to execute a contract and negotiate any amendments with Alameda County Behavioral Health Care Services (ACBH) for mental health services, Effective Date July 1, 2021. A record signature copy of said contract and any amendments to be on file in the City Clerk Department.

12

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Lisa Warhuus, Director, Health, Housing, and Community Services

Subject: Increase Taxi Scrip Window Daily Cash Redemption Limit

RECOMMENDATION
Adopt a Resolution authorizing Berkeley Rides for Seniors & the Disabled (BRSD) to increase the Taxi Scrip Window daily cash redemption limit from $800 to $1,000, one day per week.

FISCAL IMPACTS OF RECOMMENDATION
Funds are currently available to support the increase as follows: $62,088 in Measure B (132-51-505-542-2038-000-444-612990) and $289,000 in Measure BB (136-51-505-542-2038-000-444-612990).

CURRENT SITUATION AND ITS EFFECTS
Through its implementation of Measures B and BB, the City distributes taxi vouchers ("scrip") to seniors and people with disabilities, who use the scrip to pay for taxi rides. The taxi drivers who receive scrip then come to the City to receive cash for the value of the scrip. The current cash drawer amount allows BRSD to disburse $800 per day, one day per week, to taxi drivers. Occasionally, taxi drivers earn a total in excess of $800 of taxi scrip in a given week. Increasing the daily cash redemption limit to $1,000 will help ensure drivers are reimbursed for the total amount earned each week.

BACKGROUND
Transportation is one of the most significant issues facing seniors and people with disabilities. To address this need, Alameda County voters approved the reauthorization of Measure B in 2000 and the passage of Measure BB in 2014, which enable the Alameda County Transportation Commission to continue to administer the proceeds from the one half cent transportation sales tax from each Measure. The inception date for the new Measure B was April 1, 2002 and Measure BB began on April 1, 2015.

Measure B and BB funds are critical resources in the Berkeley community to support the needs of disabled and senior Berkeley residents. The City of Berkeley utilizes these funds to administer the BRSD Taxi Scrip program and the BRSD High Medical Need (supplemental taxi scrip) Program which both increase transportation options for disabled and senior community members in Berkeley.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
By allowing a larger daily cash redemption limit, taxi drivers will be required to make fewer trips to the cash window, saving on transport to and parking in the downtown area.

RATIONALE FOR RECOMMENDATION
Berkeley taxi drivers are required by Berkeley Municipal Code Ordinance 7,336-NS to provide service to recipients of BRSD taxi scrip. Increasing the daily cash redemption limit to $1,000, one day per week, will allow taxi drivers more economic flexibility throughout the month, which is more suited to the current reality of the program

ALTERNATIVE ACTIONS CONSIDERED
Keeping the weekly limit at $800 will require some tax drivers to make multiple trips to the cash window and delay receiving payments.

CONTACT PERSON
Mary Triston, Transportation Services Coordinator, Aging Services, HHCS (510) 981-5135

Attachments:
1: Resolution

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

INCREASE BERKELEY RIDES FOR SENIORS & THE DISABLED TAXI SCRIP WINDOW DAILY CASH REDEMPTION LIMIT

WHEREAS, the City of Berkeley Municipal Code Ordinance 7,336-NS provides for the use of taxi scrip as payment; and

WHEREAS, Alameda County voters passed Measure B in 2000 and Measure BB in 2014, which enabled the Alameda County Transportation Commission to continue to administer the proceeds from the one-half cent transportation sales tax from each Measure; and

WHEREAS, Berkeley taxi drivers are providers of critical transportation services to Berkeley residents with disabilities and seniors; and

WHEREAS, funds are available to support an increase in the daily cash redemption limit as follows: $62,088 in Measure B (132-51-505-542-2038-000-444-612990) and $289,000 in Measure BB (136-51-505-542-2038-000-444-612990).

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the Berkeley Rides for Seniors & the Disabled Taxi Redemption Window daily cash redemption limit be increased from $800 to $1,000, one day per week.

13

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Lisa Warhuus, Director, Health, Housing, and Community Services

Subject: Amending Berkeley Municipal Code (BMC) Chapter 12.70 Sections 12.70.031 and 12.70.050A.1 to align with State and Local Laws

RECOMMENDATION

Staff recommends the City Council adopt the reading of an Ordinance amending Berkeley Municipal Code (BMC) Chapter 12.70 Smoking Pollution Control to incorporate two changes:

1) Amending BMC 12.70.030 to replace the outdated term “Dispensary” with “Cannabis Retailer” in order to align with the State’s Medicinal and Adult-Use of Cannabis Safety and Regulation Act (MAUCSRA); and

2) Revise BMC Chapter 12.70.050.A.1 to clarify that smoking *tobacco* is allowed at a tobacco retailer, and smoking *cannabis* is allowable at a Cannabis Retailer, subject to Council-approved BMC Sections 23.320.020.F.2, 12.21.020.U, V, and Y, and 12.22.040.F.2 allowing “Cannabis Lounges”.

FISCAL IMPACTS OF RECOMMENDATION

The updates and amendments have no additional long-term financial impact to the City.

CURRENT SITUATION AND ITS EFFECTS

In 2017 the State of California adopted MAUCSRA which established a new legal framework for cannabis cultivation, manufacturing, testing and distribution. A cannabis seller is now a “Cannabis Retailer” under MAUCSRA which allows pre-tested, pre-packaged cannabis products to be sold at retail. The proposed changes to BMC 12.70 will align the BMC with MAUCSRA.

Furthermore, BMC 12.70 “Smoking Pollution Control”, currently bans smoking in most workplaces with the exception of a Tobacco Retailer. The State of California and City of Berkeley defined smoking to include both tobacco *and* cannabis products during the adoption of BMC 12.70.020.V. However, the adopted definition of “smoking” in BMC 12.70 was not explicit to include cannabis. Therefore, the proposed amendment clarifies “smoking” to include cannabis at a Cannabis Retailer, which will enable the City to approve Cannabis Smoking Lounges, pursuant to Council's approval of such lounges.

<u>BACKGROUND</u>
In the past, the City permitted and licensed cannabis sellers known as "Dispensaries." The Dispensaries obtained cannabis directly from growers in bulk, sent samples to labs to test for contaminants, and if it passed, the cannabis product was packaged, labeled, and ready to be sold under tightly regulated circumstances. At the time, Berkeley was the only jurisdiction in California performing this degree of regulation, and in the process, developed a robust inspection program to ensure compliance with the City's unique Dispensary program.

Since the passage of MAUCSRA the State took over most of these program responsibilities and created new permit classifications. This required the City to update its cannabis program, including governing regulations, to be consistent with State law.

On January 28, 2020, Council adopted comprehensive changes to the cannabis ordinances, including 23.320.020.F.1 and 2; 12.21.020.U, V, and Y; 12.22.040.F.1 and 2 that defined and specified conditions for the operation of lounges, necessitating the changes to BMC 12.70.050.A.1 in the attached ordinance.

On November 20, 2020, in alignment with State law, Council adopted a change to BMC 12.70 to define "smoking" to include cannabis, both medical and adult. Consequently, cannabis is now subjected to the same smoking restrictions in place for tobacco. The changes in the attached ordinance in BMC Chapter 12.70.050.A.1 clarify and align this section with the changes made previously.

<u>ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS</u>
There are no known additional environmental sustainability and climate impacts associated with the recommended action.

<u>RATIONALE FOR RECOMMENDATION</u>
The proposed changes in the attached ordinance will align BMC 12.70 with related changes already made at the state level and by Council.

<u>ALTERNATIVE ACTIONS CONSIDERED</u>
Staff did not identify any alternative actions that are consistent with state law and Council's previous changes to the municipal code.

<u>CONTACT PERSON</u>
Ron Torres, Environmental Health Division Manager, HHCS, (510) 981-5231.

Attachments:

1: Ordinance

Exhibit A: Ordinance with strike thru revisions

ORDINANCE NO. -N.S.

AMENDING BERKELEY MUNICIPAL CODE CHAPTER 12.70 SMOKING POLLUTION CONTROL

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

Section 1. That Berkeley Municipal Code Subsection 12.70.031 is amended to read as follows:

12.70.031 Smoking Medical Cannabis at Cannabis Retailers

Notwithstanding anything to the contrary in this Chapter, the inhalation of medical cannabis through the use of an electronic smoking device inside a Cannabis Retailer and on the public right of way within 50 feet of such a Cannabis Retailer, is not prohibited by this Chapter.

Section 2. That Berkeley Municipal Code Subsection 12.70.050.A.1 is amended to read as follows:

12.70.050 Where Smoking is not Regulated

A. This chapter is not intended to regulate smoking in the following places and under the following conditions within the City:

1. Tobacco in retail tobacco stores and cannabis in State-permitted Storefront Cannabis Retailers within a Designated Smoking Room in compliance with the Environmental Health Division’s Lounge Operating Standards and except as stated in Section 12.70.031;

2. Private residences, which may serve as a place of employment except when used as a childcare or health care facility and except as stated in Sections 12.70.035 and 12.70.037.

B. Notwithstanding any other provision of this section, any owner, operator, manager, or other person who controls a business or other establishment may declare that entire establishment as a nonsmoking establishment.

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

ORDINANCE NO. -N.S.

AMENDING BERKELEY MUNICIPAL CODE CHAPTER 12.70 SMOKING POLLUTION CONTROL

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

Section 1. That Berkeley Municipal Code Subsection 12.70.031 is amended to read as follows:

12.70.031 Smoking Medical Cannabis at ~~Dispensaries~~ Cannabis Retailers

Notwithstanding anything to the contrary in this Chapter, the inhalation of medical cannabis through the use of an electronic smoking device inside a ~~dispensary~~ Cannabis Retailer and on the public right of way within 50 feet of such a ~~Dispensary~~ Cannabis Retailer, ~~by a member of that dispensary,~~ is not prohibited by this Chapter.

Section 2. That Berkeley Municipal Code Subsection 12.70.050.A.1 is amended to read as follows:

12.70.050 Where Smoking is not Regulated

A. This chapter is not intended to regulate smoking in the following places and under the following conditions within the City:

1. Tobacco in ~~R~~retail tobacco stores and cannabis in State-permitted Storefront Cannabis Retailers within a Designated Smoking Room in compliance with the Environmental Health Division's Lounge Operating Standards and except as stated in Section 12.70.031;

2. Private residences, which may serve as a place of employment except when used as a childcare or health care facility and except as stated in Sections 12.70.035 and 12.70.037.

Commented [DA1]: In the report these are referred to as Cannabis Lounges, and the names should match.

Where are the Lounge standards published? Are they in the BMC or published by EH? I think that should be clearer. If in the BMR, include the BMC section

Commented [BP2R2]: Agree

B. Notwithstanding any other provision of this section, any owner, operator, manager, or other person who controls a business or other establishment may declare that entire establishment as a nonsmoking establishment.

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

Office of the City Manager

14

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Scott Ferris, Director, Parks Recreation & Waterfront
Liam Garland, Director, Public Works

Subject: Amendments to On-Call Architectural Services Contract No. 31900137 (ELS Architecture and Urban Design), Contract No. 31900155 (Siegel & Strain Architects), and Contract No. 31900131 (Noll & Tam Architects)

RECOMMENDATION

Adopt Resolutions authorizing the City Manager to:

1. Execute an amendment to Contract No. 31900137 for ELS Architecture and Urban Design increasing the contract amount by $900,000; and
2. Execute amendments to Contract No. 31900155 for Siegel & Strain Architects, and Contract No. 31900131 for Noll & Tam Architects by increasing the contract amount by $900,000 each and duration by 9 months each, from June 30, 2022 to March 31, 2023.

FISCAL IMPACTS OF RECOMMENDATION

The following funding source and amount is an estimate as funding for these on-call contracts will be identified and expended only for actual architectural services required. $2.7M in funding is available in the FY 2022 budget in Measure T1 Fund and additional funding is subject to appropriation in the FY 2023 budget in the T1, Parks Tax and General Funds.

CURRENT SITUATION AND ITS EFFECTS

The capital divisions of the Departments of Public Works (PW) and Parks, Recreation, and Waterfront (PRW) require architectural services to implement the City's Capital Improvement Program. Every 3-4 years, PW and PRW conduct a competitive Request For Qualifications process (RFQ) for On-call architectural, landscape architectural, engineering, construction management and a variety of other technical consultant services. This reduces the need for multiple RFQ processes and accelerates the time it takes to complete a project, sometimes by up to two years.

Currently the three On-call architecture firms for the City are ELS Architecture and Urban Design, Siegel & Strain Architects and Noll and Tam Architects. PW and PRW have begun the RFQ process for architecture services that will be awarded at Council later this year and result in new On-call contracts being in place by the end of March, 2023. These new on-call contracts will potentially award over $10M in City work. In the meantime, staff recommends increasing the length of time on two existing On-call contracts by nine months and increasing the spending authority of all three on-call architecture firms by $900,000 each. The ELS and Urban Design contract length has already been extended to June 30, 2024.

Additional funding for the three existing On-calls is needed to fulfill both departments' needs for current and upcoming projects in design and construction prior to the end of 2022. The current project list in need of these services includes, but is not limited to the following projects:

- Civic Center Design
- Corp Yard Improvement Projects
- Fire Station Upgrades
- John Hinkel Park Amphitheater, 2-12 Play Structure, and Picnic Area
- Right of Way, Harrison and Ohlone Parks and Waterfront Restrooms
- South Berkeley Senior Center Upgrades
- Tom Bates Regional Sports Complex and Restrooms
- West Berkeley Service Center Upgrades

The current contract amounts for both Siegel & Strain and ELS are projected to be depleted by March 31, 2022. This additional funding is required in order to proceed with design and construction services over the next year, especially for T1 projects that must be constructed within the next several years.

The Siegel & Strain contract, as well as the Noll & Tam contract will be increased by $900,000 to $2,600,000 each. The ELS contract will be increased by $900,000 to $3,500,000.

<u>BACKGROUND</u>

On August 15, 2018, the City issued a Request for Qualifications (RFQ) for On-Call Architectural Services (Specification No. 18-11235-C). The City received Statements of Qualifications (SOQs) from 15 firms. After evaluation of the SOQs by the review panel, ELS Architecture and Urban Design, Noll & Tam, and Siegel & Strain Architects were among the firms selected.

On January 22, 2019, Council authorized a $1,700,000 contract for On-call architectural design services with ELS Architecture and Urban Design, Noll & Tam Architects, and Siegel & Strain Architects, respectively, for the period February 1, 2019 through June 30, 2022 (Resolutions No. 68,738-N.S., 68,739-N.S., and 68,740).

On September 14, 2021, the City authorized an amendment to the on-call architectural services contract for ELS Architecture to increase the on-call contract by $900,000 from

$1,700,000 to $2,600,000 and from June 30, 2022 to June 30, 2024 (Resolution No. 70,023–N.S.)

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Consultants and City staff evaluate water and energy efficiency upgrade opportunities during the design of improvement and renovation projects. Improving City facilities and reducing water and energy consumption is consistent with the City’s Climate Action Plan goals.

RATIONALE FOR RECOMMENDATION

The three On-call firms – ELS Architecture and Urban Design, Siegel & Strain Architects, and Noll & Tam Architects – includes highly-qualified staff for the projects, as previously evaluated through the City’s contracting process. They have the required expertise in design, architecture, project management, and support to meet the City’s on-going capital program needs, and complement the personnel and capacity available in the Public Works and Parks, Recreation and Waterfront Departments to complete existing projects. City staff does not have the expertise to provide architectural services.

ALTERNATIVE ACTIONS CONSIDERED

None

CONTACT PERSON

Scott Ferris, Director, Parks Recreation & Waterfront, (510) 981-6700
Liam Garland, Director, Public Works, (510) 981-6300
Elmar Kapfer, Supervising Civil Engineer, Public Works, (510) 981-6435
Evelyn Chan, Supervising Civil Engineer, PRW, (510) 981-6430

Attachments:
1: Resolution: ELS Architecture and Urban Design
2: Resolution: Siegel & Strain Architects
3: Resolution: Noll & Tam Architects

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

AMENDMENT TO CONTRACT NO. 31900137 FOR ON-CALL ARCHITECTURAL SERVICES BY ELS ARCHITECTURE AND URBAN DESIGN

WHEREAS, on January 22, 2019, the City Council authorized Contract No. 31900137 with ELS Architecture and Urban Design in an amount not to exceed $1,700,000 for on-call architectural design services for various Department of Public Works and Department of Parks, Recreation and Waterfront capital improvement projects through June 30, 2022 (Resolution No. 68,738-N.S.); and

WHEREAS, on September 14, 2021, the City Council authorized an amendment to Contract No. 31900137 with ELS Architecture and Urban Design increasing the amount not-to-exceed to $2,600,000 and contract time to June 30, 2024 (Resolution No. 68,738-N.S.); and

WHEREAS, City staff does not have the expertise to provide architectural services; and

WHEREAS, the current contract not to exceed amount is projected to be depleted by March 31, 2022 and the City has need of ELS Architecture and Urban Design's continued architectural services through June 30, 2024; and

WHEREAS, funds are available from the Measure T1 Fund.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute an amendment to Contract No. 31900137 with ELS Architecture and Urban Design for architectural services increasing the amount by $900,000 for a revised contract amount not-to-exceed $3,500,000.

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

AMENDMENT TO CONTRACT NO. 31900155 FOR ON-CALL ARCHITECTURAL SERVICES BY SIEGEL & STRAIN ARCHITECTS

WHEREAS, on January 22, 2019, the City Council authorized Contract No. 31900155 with Siegel & Strain Architects in an amount not-to-exceed $1,700,000 for On-call architectural design services for various Department of Public Works and Department of Parks, Recreation and Waterfront capital improvement projects through June 30, 2022 (by Resolution No. 68,740-N.S.); and

WHEREAS, City staff does not have the expertise to provide architectural services; and

WHEREAS, the current contract not to exceed amount is projected to be depleted by March 31, 2022 and the City has need of Siegel & Strain's continued architectural services through March 31, 2023; and

WHEREAS, funds are available from the Measure T1 Fund.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute an amendment to Contract No. 31900155 with Siegel & Strain Architects for architectural services increasing the amount by $900,000 for a revised contract amount not-to-exceed $2,600,000, and extending the contract term by nine months to March 31, 2023.

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

AMENDMENT TO CONTRACT NO. 31900131 FOR ON-CALL ARCHITECTURAL SERVICES BY NOLL & TAM ARCHITECTS

WHEREAS, on January 22, 2019 by Resolution No. 68,739-N.S. the City Council authorized Contract No. 31900131 with Noll & Tam Architects in an amount not-to-exceed $1,700,000 for On-call architectural design services for various Department of Public Works and Department of Parks, Recreation and Waterfront capital improvement projects through June 30, 2022; and

WHEREAS, City staff does not have the expertise to provide architectural services; and

WHEREAS, the current contract not-to-exceed amount is projected to be depleted by March 31, 2022 and the City has need of Noll & Tam's continued architectural services through March 31, 2023; and

WHEREAS, funds are available from the Measure T1 Fund.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute an amendment to Contract No. 31900131 with Noll & Tam Architects for architectural services increasing the amount by $900,000 for a revised contract amount not-to-exceed $2,600,000, and extending the contract term by nine months to March 31, 2023.

Office of the City Manager

15

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Department of Public Works

Subject: Purchase Order: Nicholas K Corp dba the Ford Store San Leandro for Fifteen Ford Interceptor Utility Hybrid Vehicles

RECOMMENDATION

Adopt a Resolution satisfying requirements of City Charter Article XI Section 67.2 allowing the City Manager to participate in Alameda County bid procedures and authorize the City Manager to execute a purchase order for fifteen (15) Ford Interceptor Utility Hybrid vehicles with Nicholas K Corp dba the Ford Store San Leandro in an amount not to exceed $765,000.

FISCAL IMPACTS OF RECOMMENDATION

The purchase of fifteen Ford SUV Hybrid Interceptors will not exceed $765,000 and includes CA tire fees and sales tax. Funding for the purchase of these vehicles is available in the FY 2022 budget for Equipment Replacement Fund (account code 671-54-626-723-0000-000-473-664120).

CURRENT SITUATION AND ITS EFFECTS

This purchase will replace fifteen gas-powered existing vehicles that have reached far past the end of their planned useful life of 5 years with hybrid vehicles. They are needed by the City's Police Department's Patrol and Detective Divisions in their work to provide public safety services in Berkeley. Vehicles are equipped with advanced safety features including 75 mph rear impact protections; side protection and cabin enhancement architecture; and structural reinforcements to protect officers while working. Vehicles being replaced include the following:

Veh.#	Year		Veh.#	Year		Veh.#	Year
1537	2004		1727	2013		1752	2011
1548	2006		1745	2011		1806	2013
1702	2006		1749	2011		1807	2013
1721	2008		1750	2011		1812	2016
1726	2009		1751	2011		1813	2016

Replaced vehicles will be turned into Equipment Maintenance for auction unless otherwise authorized by the City Manager.

Failure to replace vehicles at the end of their planned useful life leads to higher operations expenses, decreased safety, increased pollution, decreased public safety service levels, and higher greenhouse gas emissions.

This purchase supports the City's Strategic Plan Goal of being a global leader in addressing climate change, advancing environmental justice, and protecting the environment.

BACKGROUND

Throughout the year, each City Department pays its proportionate share into the Equipment Replacement Fund, and those funds are utilized to replace equipment at the end of its useful life. If a vehicle purchase request exceeds $25,000, the Department of Finance General Services Division solicits bids or "piggybacks" off competitively bid contracts to ensure City Departments receive the best pricing.

City Charter XI Section 67.2 allows the City to purchase goods without undergoing a competitive bid process. On June 16, 2021 the County of Alameda General Services Agency released Request for Quotation (RFQ) No. 901979 for Vehicle Purchase. RFQ No. 901979 language required that the award go to the qualified bidder with lowest mark-up over triple-net dealer invoice price. Triple-net price is the dealer's actual cost of the vehicles after all discounts, rebates and deductions are taken off. On July 27, 2021, one bid was received and opened and, upon review by the evaluation committee, Nicholas K Corp dba the Ford Store San Leandro was determined to be a responsive responsible bidder and was awarded County of Alameda Purchase Order contract (Master Contract No. 901979). The County of Alameda's bid procedures satisfy the procurement requirements of the City of Berkeley.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

New vehicles will be powered by a 3.3l V6 Direct-injection Hybrid Drive System offered by the Ford Motor Company in a Police Interceptor SUV Model. The Hybrid design will significantly reduce idle time, reduce fuel consumption, decrease carbon footprint and tailpipe emissions, and reduce maintenance costs.

In June 2020, the City Council received the Municipal Fleet Electrification Assessment. The assessment proposed by 2030 to install 51 charging stations with 100 chargers and to upgrade all 129 vehicles in the light duty fleet to EV. Public Works (PW) has made progress in implementing the recommendations. PW has installed 31 charging stations and 61 chargers. In 2020, the light duty fleet included 46 hybrids and 15 plug in hybrid-electric vehicles. Since then six EV sedans, three hybrid SUV's for the Police Department, and four hybrid pickup trucks were added to the city's fleet. In the current fiscal year, vehicle orders include 24 EV's (sedans and pickups), 11 vehicles transitioning from unleaded to renewable diesel, two hybrid pickups, and these 15 hybrid SUV's for the Police Department. In FY23, Public Works will replace existing sedans with another 11 EVs. All together, these improvements are moving the City's fleet towards a fossil-free goal and have reduced the City fleet's consumption of traditional gasoline by 37% from its 2001 peak.

Public Works is on track to complete conversion of the light duty fleet to EVs by 2028, two years ahead of the assessment's schedule. However, failure to fund and/or install the Corporation Yard charging stations may delay this schedule. The FY 2022 budget did not include the $850,000 necessary to construct the charging infrastructure for the Corporation Yard. In light of this funding gap, Public Works and Office of Energy and Sustainable Development continue discussions with East Bay Community Energy for their potential financing and management of this capital project.

RATIONALE FOR RECOMMENDATION

All City vehicles are due for replacement at the end of their recognized economic lifecycles. City departments that utilize fleet vehicles pay into the equipment replacement fund, which fully funds vehicle replacement as they reach the end of their lifecycle.

ALTERNATIVE ACTIONS CONSIDERED

None, listed vehicles have reached the end of their lifecycle, and funded for replacement.

CONTACT PERSON

Greg Ellington, Superintendent, Department of Public Works (510) 981-6469

Attachment:
1: Resolution

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

PURCHASE ORDER: NICHOLAS K CORP DBA THE FORD STORE SAN LEANDRO FOR FIFTEEN FORD INTERCEPTOR UTILITY HYBRID VEHICLES

WHEREAS, fifteen (15) new Ford SUV Interceptors are needed by the City of Berkeley Police Department, Patrol Division to provide public safety services in Berkeley; and

WHEREAS, equipment unit 1537, 1548, 1702, 1721 1726, 1727, 1745 1749, 1750, 1751, 1752, 1806, 1807, 1812 and 1813; and

WHEREAS, equipment must be replaced on a reasonable schedule and allows Police Officers to efficiently and effectively carry out their duties; and

WHEREAS, City Charter XI Section 67.2 allows the City to purchase goods without undergoing a competitive bid process if the City uses pricing obtained by another entity through a competitive process; and

WHEREAS, the County of Alameda General Services Agency bid procedures satisfy the procurement requirements of the City of Berkeley; and

WHEREAS, funds in the amount of $765,000 are available in the FY2022 Equipment Replacement fund 671 (account code 671-54-626-723-0000-000-473-664120).

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute a purchase order for fifteen Ford Interceptors with Nicholas K Corp dba the Ford Store of San Leandro in an amount not to exceed $765,000.

16

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Department of Public Works

Subject: Purchase Order: Nicholas K Corp dba the Ford Store San Leandro for Three Electric Vehicle Ford Pickup Trucks

RECOMMENDATION

Adopt a Resolution satisfying requirements of City Charter Article XI Section 67.2 allowing the City Manager to participate in Alameda County bid procedures and authorize the City Manager to execute a purchase order for three (3) Electric Vehicle Ford Pickup Trucks with Nicholas K Corp dba the Ford Store San Leandro in an amount not to exceed $135,000.

FISCAL IMPACTS OF RECOMMENDATION

The purchase of three Electric Vehicle (EV) Ford Pickup Trucks will not exceed $135,000 and includes CA tire fees and sales tax. Funding for the purchase of these vehicles is available in the FY 2022 Equipment Replacement Fund budget: 671-54-626-723-0000-000-473-664120.

CURRENT SITUATION AND ITS EFFECTS

This purchase will replace three existing vehicles that have reached the end of their useful life of 10 years. Vehicles #2906, #6890, and #9801 are beyond 13 years old. Failure to replace vehicles at the end of their planned useful life leads to higher operations expenses, decreased safety, increased pollution, decreased public safety service levels, and higher greenhouse gas emissions.

In accordance with Municipal Fleet Electrification Assessment, the purchase will transition three gasoline internal combustion engine powered vehicles to all electric Ford F150 Lightning Pickups.

Public Works Fleet Maintenance Staff will utilize the vehicles to provide essential fleet support services to all City Departments.

This purchase supports the City's Strategic Plan Goal of being a global leader in addressing climate change, advancing environmental justice, and protecting the environment.

BACKGROUND

Throughout the year each City Department pays its proportionate share into the Equipment Replacement Fund, and those funds are utilized to replace equipment at the end of its useful life. If a vehicle purchase request exceeds $25,000, the Department of Finance General Services Division solicits bids or “piggybacks” off competitively bid contracts to ensure City Departments receive the best pricing.

City Charter XI Section 67.2 allows the City to purchase goods without undergoing a competitive bid process. On June 16, 2021 the County of Alameda General Services Agency released Request for Quotation (RFQ) No. 901979 for Vehicle Purchase. RFQ No. 901979 language required that the award go to the qualified bidder with lowest mark-up over triple-net dealer invoice price. Triple-net price is the dealer’s actual cost of the vehicles after all discounts, rebates and deductions are taken off. On July 27, 2021 two bids were received and opened, upon review by the evaluation committee, Nicholas K Corp dba the Ford Store San Leandro was determined to be the most responsive responsible bidder and was awarded County of Alameda Purchase Order contract (Master Contract No. 901979). County of Alameda’s bid procedures satisfies the procurement requirements of the City of Berkeley.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

New vehicles will be powered by a dual emotor, 96KW capacity standard range high-voltage battery system. The design is 100% electric powered and mitigates environmental concerns associated with internal combustion engine systems, while reducing maintenance costs associated with less moving parts.

In June 2020, the City Council received the Municipal Fleet Electrification Assessment. The assessment proposed by 2030 to install 51 charging stations with 100 chargers and to upgrade all 129 vehicles in the light duty fleet to EV. Public Works (PW) has made progress in implementing the assessments recommendations. PW has installed 31 charging stations and 61 chargers. In 2020, the light duty fleet included 46 hybrids and 15 plug-in hybrid-electric vehicles. Since then, the City’s fleet added 6 EV sedans, 3 hybrid SUV’s for the Police Department, and 4 hybrid pickup trucks. In the current fiscal year, vehicle orders include 24 EV’s (sedans and pickups which includes these 3 pickups), 11 vehicles transitioning from unleaded to renewable diesel, 2 hybrid pickups, and 15 hybrid SUV’s for the Police Department. In FY23, Public Works will replace existing sedans with another 11 EVs. All together, these improvements are moving the City’s fleet towards a fossil-free goal and have reduced the City fleet’s consumption of traditional gasoline by 37% from its 2001 peak.

Public Works is on track to complete conversion of the light duty fleet to EVs by 2028, two years ahead of the assessment’s schedule. However, failure to fund and/or install the Corporation Yard charging stations may delay this schedule. The FY 2022 budget did not include the $850,000 necessary to construct the charging infrastructure for the Corporation Yard. In light of this funding gap, Public Works and Office of Energy and

Sustainable Development continue discussions with East Bay Community Energy for their potential financing and management of this capital project.

RATIONALE FOR RECOMMENDATION
All City vehicles are due for replacement at the end of their recognized economic lifecycles. City departments that utilize fleet vehicles pay into the equipment replacement fund, which fully funds vehicle replacement as they reach the end of their lifecycle.

ALTERNATIVE ACTIONS CONSIDERED
None, listed vehicles have reached the end of their lifecycle and are fully funded for replacement.

CONTACT PERSON
Greg Ellington, Superintendent, Department of Public Works (510) 981-6469

Attachments:
1: Resolution

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

PURCHASE ORDER: NICHOLAS K CORP DBA THE FORD STORE SAN LEANDRO FOR THREE EV FORD PICKUP TRUCKS

WHEREAS, three (3) EV Ford Pickup Trucks are needed by the City of Berkeley Public Works Fleet Maintenance Department to provide support services in Berkeley; and

WHEREAS, units 2906, 9801 and 6890 are at the end of their useful life and need to replaced; and

WHEREAS, equipment must be replaced on a reasonable schedule and allows Fleet maintenance personnel to efficiently and effectively carry out their duties; and

WHEREAS, City Charter XI Section 67.2 allows the City to purchase goods without undergoing a competitive bid process if the City uses pricing obtained by another entity through a competitive process; and

WHEREAS, the County of Alameda General Services Agency bid procedures satisfy the procurement requirements of the City of Berkeley; and

WHEREAS, funds in the amount of $135,000 are available in the FY2022 Equipment Replacement fund budget: 671-54-626-723-0000-000-473-664120.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Berkeley is authorized to execute a purchase order for three EV Ford Pickup Trucks with Nicholas K Corp dba the Ford Store of San Leandro in an amount not to exceed $135,000.

17

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Department of Public Works

Subject: Contract No. 112725-1 Amendment: Du-All Safety, LLC for Safety Consulting and Training Services

RECOMMENDATION

Adopt a Resolution authorizing the City Manager to execute an amendment to Contract No. 112725-1 with Du-All Safety, LLC for continued safety training and consulting services up to $100,000 for a total contract amount not to exceed $400,000, and to extend the contract term through December 31, 2025.

FISCAL IMPACTS OF RECOMMENDATION

Funding is available in the amount of $15,000 for the remainder of the FY22 budget in Zero Waste Fund 601 and Sewer Fund 611. Funding for the balance of the contract amendment is subject to appropriation as part of the FY23/24 budget process from the following funds: Sanitary Sewer Fund 611, Zero Waste Fund 601, Facilities Maintenance Fund 673, Street Light 142, Equipment Maintenance Fund 672, and Used Oil Payment Fund 329. Additional funds may be needed as training needs arise.

CURRENT SITUATION AND ITS EFFECTS

Public Works employs over 300 staff in the following divisions: Zero Waste, Engineering, Transportation, Administration and Finance, Equipment Maintenance, Facilities, Streets and Utilities. Many of these divisions require job-specific safety training to comply with certain Cal/OSHA regulations including bloodborne pathogens, confined space awareness, and fall protection. Du-All supports the City's in-house safety program and provides ongoing site inspections, policy recommendations, and identifies areas for improvement.

Authorizing this contract amendment supports the City's Strategic Goal of creating a resilient, safe, connected, and prepared City.

BACKGROUND

The City issued a June 2016 Request for Proposals for safety training and support services, received two proposals, and selected Du-All Safety as the most responsive and qualified vendor to meet the needs of the Public Works safety program. On October

24, 2016, the City Manager entered into a contract with Du-All Safety to provide these services in an amount not to exceed $50,000.

On May 30, 2017, City Council adopted Resolution No. 68,005-N.S. which authorized an amendment to the contract for an amount not to exceed $200,000 and extend the contract term through December 31, 2020.

On December 10, 2019, City Council adopted Resolution No. 69,229-N.S. which authorized the amendment of the contract for an amount not to exceed $300,000 and extend the contract term through December 31, 2022;

Du-All Safety is a Bay Area business that works with many municipalities to support and improve their safety programs by ensuring that employees are trained appropriately. Du-All Safety will continue to provide ongoing support in implementation of these written programs and in person and virtual training.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
Du-All Safety provides training to City staff in hazardous materials handling, spill response, and asbestos management. When staff are properly prepared for these occurrences, City employees and residents are protected, and the environment is safeguarded from the further release of toxic substances.

RATIONALE FOR RECOMMENDATION
Public Works has an in-house Occupational Health and Safety Officer but the breadth of Cal/OSHA-required safety programs, plans, and trainings requires the services of Du-All Safety.

ALTERNATIVE ACTIONS CONSIDERED
None.

CONTACT PERSON(S)
Liam Garland, Director, Department of Public Works (510) 981-6303
David Peery, Occupational Health & Safety Officer, (510) 981-6485

Attachment:
1: Resolution

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

CONTRACT NO. 112725-1 AMENDMENT: DU-ALL SAFETY, LLC FOR SAFETY CONSULTING AND TRAINING SERVICES

WHEREAS, Du-All Safety, LLC has provided excellent safety training and written safety program improvements during the contract term and requires additional funding to provide required trainings; and

WHEREAS, in 2016 the Department of Public Works requested proposals for safety training and consulting services and Du-All Safety, LLC was selected as the most qualified firm to provide these services; and

WHEREAS, on October 24, 2016, the City Manager authorized Contract No. 103996 with Du-All Safety, LLC for safety training and consulting services, in an amount not to exceed $50,000 for the period of August 5, 2016 through June 30, 2019; and

WHEREAS, on May 30, 2017, City Council adopted Resolution No. 68,005-N.S. which authorized the amendment of the contract for an amount not to exceed $200,000 and extend the contract term through December 31, 2020; and

WHEREAS, on December 10, 2019, City Council adopted Resolution No. 69,229-N.S. which authorized the amendment of the contract for an amount not to exceed $300,000 and extend the contract term through December 31, 2022; and

WHEREAS, City staff need additional support and training from the services provided by Du-All Safety, LLC; and

WHEREAS, funds have been identified from each participating division to support an estimated annual expenditure of $30,000 subject to appropriation as part of the FY 2023 through FY 2025 budgets.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute an amendment to the contract with Du-All Safety, LLC for on-going safety training and consulting services, increasing the contract amount by $100,000 for a total amount not to exceed $400,000, and extending the term of the contract to December 31, 2025. A record signature copy of the contract and any amendments to be on file in the City Clerk Department.

Office of the City Manager

18

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Department of Public Works

Subject: Contract No. 32100122 Amendment: Silao General Engineering for Site Improvements Project at 125/127 University Avenue.

RECOMMENDATION

Adopt a Resolution authorizing the City Manager to amend Contract No. 32100122 with Silao General Engineering, Inc. to complete the parking lot site improvements at 125/127 University Avenue increasing the current contract amount of $192,947 by $85,000.00 for a total amount not-to-exceed of $277,947.

FISCAL IMPACTS OF RECOMMENDATION

Funding for the construction contract amendment in the amount of $85,000 is available in the FY 2022 Parking Meter Fund (631) budget as follows:

Current Contract:
Base Scope: Parking Meter Fund (631) $118,988
CO#01 Amendment: Facility Maint. Funds (501) $73,959
Total Current Contract......................................$192,947

This Amendment:
Parking Meter Fund (631) $85,000
Amended Contract Amount..................................$277,947

No other funding is required, and no other projects will be delayed due to this expenditure.

CURRENT SITUATION AND ITS EFFECTS

The City has a current construction contract with Silao General Engineering, Inc. to construct improvements at the 125/127 University Avenue parking lot to support the Berkeley Police Parking Enforcement Unit's relocation.

During the course of construction, staff identified changes needed to improve the day-to-day operations of the site, and these changes increased the scope of the original contract documents. Additionally, the project has encountered some unanticipated conditions that have required additional work and changes to the design. These changes include the following:

- Electrical upgrades and facilities to support charging up to six (6) Go-4 vehicles, a storage container unit for motorcycle storage and trickle charging, and a mobile crisis trailer connection;
- Unanticipated additional trenching and backfill for new utilities servicing the site;
- Analysis and proper disposal of impacted soil encountered during excavation activities;
- Security modifications to the fence height along a vulnerable side due to trees and a landscaped berm; and
- Additional remotes and ground detection loop for vehicle gate auto-open and closure.

The Berkeley Police Parking Enforcement Unit moved into the first-floor office space at 125/127 University Avenue on January 1, 2022.

BACKGROUND

On October 19, 2020 the City issued an Invitation For Bid (IFB) for the modifications to the existing parking lot including new lighting, fencing, and utility services (Spec No. 19-11325). The City received nine (9) bids ranging from $118,988 to $637,200. Silao General Engineering, Inc. was the lowest responsive and responsible bidder. On March 22, 2021, the City Manager authorized construction contract no. 32100122 in the amount of $118,988 and has subsequently authorized one change order in the amount of $73,959, which brings the current contract total to $192,947.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

The parking site improvements have incorporated as many energy efficiency upgrades as feasible within the allotted budget such as solar powered parking lot lights, designing around and preserving an existing tree, and following the City’s construction waste management plan.

RATIONALE FOR RECOMMENDATION

Contracted services are required for this project as the City does not have the in-house expertise to complete this specialized work.

ALTERNATIVE ACTIONS CONSIDERED

None.

CONTACT PERSON

Liam Garland, Director, Department of Public Works, (510) 981-6403
Joe Enke, Manager of Engineering, Department of Public Works, (510) 981-6411
Elmar Kapfer, Supervising Civil Engineer, Department of Public Works, (510) 981-6435

Attachments:
1: Resolution

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

CONTRACT NO. 32100122 AMENDMENT: SILAO GENERAL ENGINEERING, INC.
FOR SITE IMPROVEMENTS PROJECT AT 125/127 UNIVERSITY AVENUE

WHEREAS, on October 19, 2020 the City issued an Invitation for Bid (IFB) for the construction work for the modification to the existing parking lot including new lighting, fencing, and electrical service (Spec No. 19-11325); and

WHEREAS, on March 22, 2021, the City Manager authorized construction contract no. 32100122 in the amount of $118,988 and subsequently authorized Change Order #01 in the amount of $73,959, which brings the current contract total to $192,947; and

WHEREAS, funds are available in the FY 2022 Parking Meter Fund (631) budget;

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute an amendment to the construction contract with Silao General Engineering, Inc. by increasing the construction contract amount by $85,000 for a total not to exceed of $277,947 to complete the parking lot site improvements at 125/127 University Avenue.

19

Office of the City Manager

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Department of Public Works

Subject: Contract No. 31900106 Amendment: Coastland Civil Engineering for On-Call Civil Engineering Services for the Sanitary Sewer Program

RECOMMENDATION
Adopt a Resolution authorizing the City Manager to amend Contract No. 31900106 with Coastland Civil Engineering (Coastland) for On-Call Civil Engineering Services for the Sanitary Sewer Program, increasing the contract by $500,000, for a total amount not to exceed $1,400,000, and extending the term of the contract to June 30, 2023.

FISCAL IMPACTS OF RECOMMENDATION
Funding for this contract amendment in the amount of $200,000 is available in the Sanitary Sewer Fund (budget code 611-54-623-676-3013-000-473-665130). Funding for FY 2023 is subject to appropriation in the future fiscal years' budget based on the department's need for civil engineering services.

Current Contract Amount	$900,000
Contract amendment	$500,000
Total revised not-to-exceed amount	$1,400,000

CURRENT SITUATION AND ITS EFFECTS
The Sanitary Sewer Program (Program) needs additional civil engineering services from Coastland due to a reduction in the current availability of other consultants contracted with the City to provide services for the Program. The cost of additional service needs exceeds the available contract balance. The amendment will allow Coastland to take on more design work, allowing the City to meet its sewer rehabilitation regulatory requirements in a timely manner.

The services provided by Coastland support the City's Strategic Plan goal of providing state-of-the-art, well-maintained infrastructure and facilities.

BACKGROUND
On September 22, 2014, East Bay Municipal Utility District (EBMUD), the City of Berkeley, and EBMUD's other satellite agencies entered into a Consent Decree (CD)

with the United States Environmental Protect Agency (EPA), the Regional Water Board, and the State Water Board. The mandate of this consent decree is to eliminate sanitary sewer overflows and reduce wet weather inflow and infiltration into the sanitary sewer system. The ultimate goal is to eliminate EBMUD facility discharges of untreated or partially treated wastewater into the San Francisco Bay during storm events. Under the CD, the City agreed to replace its sanitary sewer mains at an average annual rate of no less than 4.2 miles based on a three-fiscal-year rolling average. In order to meet this requirement, the City needs design and construction support from on-call consultants.

On July 24, 2018, Council authorized the City Manager to execute on-call civil engineering services contracts with three consulting firms, including Coastland. Based on forecasted needs for services, Coastland was awarded a contract for an amount not to exceed $400,000 over a three-year term. On September 24, 2019, Council authorized the City Manager to execute an amendment increasing the contract by $500,000, for a total amount not to exceed $900,000. Since then, the need for services from Coastland has increased as a result of a reduction in the availability of the other consultants contracted with the City to provide services for the Sanitary Sewer Program.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Improvements to the City's sanitary sewer system will help to minimize the frequency of Sanitary Sewer Overflows, and reduce infiltration and inflow into the City's sanitary sewer system, which in turn will protect water quality by minimizing untreated sewer discharges into the San Francisco Bay.

RATIONALE FOR RECOMMENDATION

Of the firms currently contracted with the City to provide on-call civil engineering services, Coastland has staffing availability to provide the additional services the City needs in order to meet CD mandated sewer rehabilitation requirements.

ALTERNATIVE ACTIONS CONSIDERED

No alternative actions were considered. The City does not have the resources to provide the necessary civil engineering services in-house.

CONTACT PERSON

Liam Garland, Director, Department of Public Works, (510) 981-6303
Joe Enke, Manager of Engineering, Department of Public Works, (510) 981-6411
Danny Akagi, Supervising Civil Engineer, Department of Public Works, (510) 981-6394

Attachments:
1: Resolution

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

CONTRACT NO. 31900106 AMENDMENT: COASTLAND CIVIL ENGINEERING FOR ON-CALL CIVIL ENGINEERING SERVICES FOR SANITARY SEWER PROGRAM

WHEREAS, the delivery of sanitary sewer projects is part of the City's on-going Sanitary Sewer Program (Program) to replace the aging and deteriorated sanitary sewer system; and

WHEREAS, the Program is a requirement of compliance with the Consent Decree (CD) filed September 22, 2014; and

WHEREAS, on-call consultant support is required because City staff cannot perform the volume of engineering design work needed to meet CD requirements; and

WHEREAS, Council authorized the City Manager to enter into a contract with Coastland Civil Engineering for On-Call Civil Engineering Services for an amount not to exceed $400,000 on July 24, 2018 (Resolution No. 68,550-N.S.); and

WHEREAS, Council authorized the City Manager to execute an amendment increasing increasing the contract by $500,000, for a total amount not to exceed $900,000 on September 24, 2019 (Resolution No. 69,115-N.S.); and

WHEREAS, the need for services from Coastland has increased as a result of a reduction in the availability of other on-call civil engineering consultants currently contracted to provide services for the Program; and

WHEREAS, Coastland Civil Engineering has the availability to provide additional services in support of the Program; and

WHEREAS, funding in the amount of $200,000 is available in the Sanitary Sewer Fund (budget code 611-54-623-676-3013-000-473-665130) and funding for FY 2023 is subject to appropriation based on the department's need for civil engineering services;

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute an amendment to Contract No. 31900106 with Coastland Civil Engineering for On-Call Civil Engineering Services for the Sanitary Sewer Program, increasing the contract by $500,000, for a total amount not to exceed $1,400,000, and extending the term of the contract to June 30, 2023.

Office of the City Manager

20

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Department of Public Works

Subject: Contract No. 31900094 Amendment: West Yost for On-Call Civil Engineering Services for the Sanitary Sewer Program

RECOMMENDATION
Adopt a Resolution authorizing the City Manager to amend Contract No. 31900094 with West Yost Associates (West Yost) for On-Call Civil Engineering Services for the Sanitary Sewer Program, increasing the contract by $500,000, for a total amount not to exceed $1,200,000, and extending the term of the contract to June 30, 2023.

FISCAL IMPACTS OF RECOMMENDATION
Funding for this contract amendment in the amount of $300,000 is available in the Sanitary Sewer Fund (budget code 611-54-623-676-3013-000-473-665130) and will support the necessary work through the end of FY 2022. Funding for FY 2023 is subject to appropriation in the future fiscal years' budget based on the department's need for civil engineering services.

Current Contract Amount	$700,000
Contract amendment	$500,000
Total revised not-to-exceed amount	$1,200,000

CURRENT SITUATION AND ITS EFFECTS
The Sanitary Sewer Program (Program) needs additional civil engineering services from West Yost due to a reduction in the current availability of other consultants contracted with the City to provide services for the Program. The cost of additional services needed exceeds the available contract balance. The amendment will allow West Yost to take on more design work in FY 2022 and beyond, allowing the City to meet its sewer rehabilitation regulatory requirements in a timely manner and avoid costly regulatory penalties.

The services provided by West Yost support the City's Strategic Plan goal of providing state-of-the-art, well-maintained infrastructure and facilities.

BACKGROUND

On September 22, 2014, East Bay Municipal Utility District (EBMUD), the City of Berkeley, and EBMUD's other satellite agencies entered into a Consent Decree (CD) with the United States Environmental Protect Agency (EPA), the Regional Water Board, and the State Water Board. The mandate of this consent decree is to eliminate sanitary sewer overflows and reduce wet weather inflow and infiltration into the sanitary sewer system. The ultimate goal is to eliminate EBMUD facility discharges of untreated or partially treated wastewater into the San Francisco Bay during storm events. Under the CD, the City agreed to replace its sanitary sewer mains at an average annual rate of no less than 4.2 miles based on a three-fiscal-year rolling average. In order to meet this requirement, the City needs design and construction support from on-call consultants.

On July 24, 2018, Council authorized the City Manager to execute on-call civil engineering services contracts with three consulting firms, including West Yost. Based on forecasted needs for services, West Yost was awarded a contract for an amount not to exceed $700,000 over a three-year term. Since then the contract has been extended for one year and the need for services from West Yost has increased as a result of a reduction in the availability of the other consultants contracted with the City to provide services for the Sanitary Sewer Program.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Improvements to the City's sanitary sewer system will help to minimize the frequency of sanitary sewer overflows, and reduce infiltration and inflow into the City's sanitary sewer system, which in turn will protect water quality by minimizing untreated sewer discharges into the San Francisco Bay.

RATIONALE FOR RECOMMENDATION

Of the firms currently contracted with the City to provide on-call civil engineering services, West Yost has staffing availability to provide the additional services the City needs in order to meet CD mandated sewer rehabilitation requirements.

ALTERNATIVE ACTIONS CONSIDERED

No alternative actions were considered. The City does not have the resources to provide the necessary civil engineering services in-house.

CONTACT PERSON

Liam Garland, Director, Department of Public Works, (510) 981-6303
Joe Enke, Manager of Engineering, Department of Public Works, (510) 981-6411
Danny Akagi, Supervising Civil Engineer, Department of Public Works, (510) 981-6394

Attachments:
1: Resolution

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

CONTRACT NO. 31900094 AMENDMENT: WEST YOST ASSOCIATES FOR ON-CALL CIVIL ENGINEERING SERVICES FOR SANITARY SEWER PROGRAM

WHEREAS, the delivery of sanitary sewer projects is part of the City's on-going Sanitary Sewer Program (Program) to replace the aging and deteriorated sanitary sewer system; and

WHEREAS, the Program is a requirement of compliance with the Consent Decree (CD) filed September 22, 2014; and

WHEREAS, on-call consultant support is required because City staff cannot perform the volume of engineering design work needed to meet CD requirements; and

WHEREAS, Council authorized the City Manager to enter into a contract with West Yost Associates for On-Call Civil Engineering Services for an amount not to exceed $700,000 on July 24, 2018 (Resolution No. 68,548-N.S.); and

WHEREAS, the need for services from West Yost Associates has increased as a result of a reduction in the availability of other on-call civil engineering consultants currently contracted to provide services for the Program; and

WHEREAS, West Yost Associates has the availability to provide the additional design services in support of the Program; and

WHEREAS, funding in the amount of $300,000 is available in the Sanitary Sewer Fund (budget code 611-54-623-676-3013-000-473-665130) and will support the necessary work through the end of FY 2022. Funding for FY 2023 is subject to appropriation based on each project or program, or the department's need for civil engineering services;

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute an amendment to Contract No. 31900094 with West Yost Associates for On-Call Civil Engineering Services for the Sanitary Sewer Program, increasing the contract by $500,000, for a total amount not to exceed $1,200,000, and extending the term of the contract to June 30, 2023.

Office of the City Manager

21

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Public Works

Subject: Contract No. 090342-1 Amendment: Waste Management of Alameda County for Landfill Disposal Services

RECOMMENDATION
Adopt a Resolution authorizing the City Manager to amend the City's existing Contract No. 090342-1 with Waste Management, Inc. of Alameda County for Landfill Disposal Services through December 31, 2026 by increasing the Not to Exceed amount from $32,740,168 to $45,545,780.

FISCAL IMPACTS OF RECOMMENDATION
FY 2022 funding is available in the Zero Waste Fund; account code 601-54-627-734-3023-000-472-612990. FY 2023-FY 2026 funding is subject to annual appropriation.

CURRENT SITUATION AND ITS EFFECTS
This contract for landfill services is a Strategic Plan Priority Project, advancing the City's goals to provide state-of-the-art, well-maintained infrastructure, amenities, and facilities, and provide an efficient and financially healthy City government.

The City has a current contract with Waste Management, Inc. of Alameda County (WMI) for this landfill services at their Altamont Landfill located in Livermore. This contract provides for disposal of non-recyclable materials collected by the City's Zero Waste Division or delivered to the Transfer Station by third parties. The initial contract term was March 1, 2012 through December 31, 2016 and included two five-year extensions.

On December 23, 2020, the City exercised the second five-year extension, thus extending the contract until December 31, 2026. However, the original 2011 contract included a not-to-exceed (NTE) amount that had not accounted for cost of living escalators included in the existing contract and had underestimated future landfilled tons. Without correcting the NTE, this contract would run out of funds sometime between September 2022 and February 2023.

This action increases the NTE from the 2011 contract, and ensures the City funds landfill services through December 31, 2026, increasing the NTE amount from $32,740,168 to $45,545,780.

BACKGROUND

The City released a Landfill Disposal Services RFP (Specification No. 11-105867-C) on June 6, 2011. The City received three proposals for these services, and based on an assessment of the proposals, the City's evaluation panel recommended an award of the landfill disposal contract to WMI.

City Council's last approved five-year Zero Waste rate schedule was effective from July 1, 2014 through June 30, 2019. From July 1, 2019 through today, Zero Waste rates have stayed flat with no annual escalation. On December 7, 2021, staff and City Council discussed a new proposed five-year rate schedule. Staff are considering whether 2023 is better timing to initiate these five-year rate setting procedures, given the impact of inflation on the City's customers and to coordinate with other revenue measure possibilities.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

The continuation of this contract with WMI provides for the environmentally sound disposition of materials in a Federal and State regulatory-compliant landfill. Altamont Landfill has installed modern and updated technology that captures GHGs, specifically methane, and leachate created by the decomposition of these materials, which supports the City's 2009 Climate Action Plan Goals.

RATIONALE FOR RECOMMENDATION

The City's Zero Waste Division provides curbside collection service to 23,000+ residents who live in up to five dwelling units, 5,000+ residents who live in multi-family buildings of 6 or more units, and commercial customers. The division also operates a Transfer Station that provides disposal services to 420+ drive-in customers daily. The extension of the current WMI contract provides the City's continued access to WMI's Altamont Landfill, which meets both Federal and State requirements.

ALTERNATIVE ACTIONS CONSIDERED

None. Without the NTE being corrected, the City will run out of authority for the current contract, which could result in hundreds of tons of material collecting at the Transfer Station with costlier options for landfill services.

CONTACT PERSON

Greg Apa, Solid Waste & Recycling Manager, Zero Waste Divison - Public Works, (510) 981-6359

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

CONTRACT NO. 090342-1 AMENDMENT: WASTE MANAGEMENT OF ALAMEDA COUNTY FOR LANDFILL DISPOSAL SERVICES

WHEREAS, this landfill service is a Strategic Plan Priority Project, advancing the City's goals to provide state-of-the-art, well-maintained infrastructure, amenities, and facilities, and provide an efficient and financially-health City government;

WHEREAS, the City Council authorized the contract award with the initial term of March 1, 2012 through December 31, 2016 and provided for two five-year extensions, ending December 31, 2026;

WHEREAS, the City's Zero Waste Division provides curbside collection service to 23,000+ residents, which includes multi-family units of up to 5, and 5,000+ commercial customers, which includes multi-family units of 6 or more. The Division also operates the City's Transfer Station that provides disposal services to 420+ drive-in customers daily;

WHEREAS, the existing contract provides sufficient disposal capacity of non-recyclable materials collected by the City's Zero Waste Division or delivered to the Transfer Station by third party; and

WHEREAS: on December 23, 2020, the City exercised, at its sole option, the second five-year extension, thus extending the contract until December 31, 2026. The extension of the current WMI contract provides the City's continued access to WMI's Altamont Landfill, which meets both Federal and State requirements.

WHEREAS, funding is available in the FY2022 Zero Waste Fund budget: 671-54-626-723-0000-000-473-664120.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to increase the Not to Exceed amount from $32,740,168 to $45,545,780 of the City's existing Contract No. 090342-1 with Waste Management, Inc. of Alameda County through December 31, 2026 for these state and city mandated landfill disposal services to ensure and protect the health and welfare of Berkeley's community members and businesses.

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Office of the City Manager

22

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Liam Garland, Director, Department of Public Works

Subject: Fiscal Year 2023 Street Lighting Assessments – Initiating Proceedings

RECOMMENDATION

Adopt two Resolutions describing proposed improvements to be used to determine the annual assessments levied for Berkeley Street Lighting Assessment District No. 1982-1 and Street Lighting Assessment District No. 2018, and order the preparation of Engineer's Reports.

FISCAL IMPACTS OF RECOMMENDATION

Staff will prepare the Engineer's Reports for Berkeley Street Lighting Assessment District No. 1982-1 (1982 District) and Street Lighting Assessment District No. 2018 (2018 District). This effort to prepare the reports has been included in the budget process for the City's operation and maintenance of the street lights. These reports will be prepared in accordance with the Landscaping and Lighting Act of 1972 (Act), promulgated in California Streets and Highways Code Section 22500 et seq., and are required to be prepared for each fiscal year (FY) for which assessments are to be levied and collected.

In FY 2023, the assessments for the 1982 District and the 2018 District will generate approximately $2.1 million in revenue for the Street Lighting program (Street Light Assessment District Fund 142).

CURRENT SITUATION AND ITS EFFECTS

The Act requires the City's governing body adopt a resolution generally describing any proposed new improvements to be used to determine the annual assessments levied for the City's street lighting districts, and order the preparation of Engineer's Reports for the assessments. These are the first steps in allowing the City to levy and collect the assessments necessary to operate and maintain the street lighting districts. The improvements to be made in these assessment districts are generally described as maintenance and/or servicing of existing and future public lighting facilities. Collecting the street lighting fees are necessary to maintain and implement needed improvements and services to support the Strategic Plan goals of creating a resilient, safe, connected, and prepared city and of providing state-of-the-art, well-maintained infrastructure, amenities, and facilities.

BACKGROUND

The 1982 District was established in accordance with the requirements of the Act on July 27, 1982 (Resolution No. 51,449-N.S.). The 2018 District was established in accordance with the requirements of the Act on June 12, 2018 (Resolution No. 68,482-N.S.). The Act requires the City prepare Engineer's Reports for each fiscal year for which assessments are to be levied and collected. City staff will prepare the reports in accordance with the Act.

The City's original assessment for the 1982 District failed to generate sufficient revenue to sustain the long-term operations of the City's Street Lighting Program (Program). For a period beginning in FY 2006 and running through FY2017, the City used General Funds to sustain operations necessary to the Program. To establish financial sustainability for the Program and to avoid significant reductions to service in the future, the City moved forward with the formation of the 2018 District. This district was formed separately from the 1982 District, leaving the 1982 District's structure and rates in place. Assessments for the 2018 District were first levied in FY 2019. Allowable annual inflation adjustments of the 2018 District assessment rates are expected to raise revenues over the coming years.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

The City exclusively uses LED (light emitting diode) street lighting. LED lights provide environmental benefits by reducing the level of greenhouse gases emitted, reducing level of toxic materials disposed, maximizing energy cost savings, complying with the City's illumination standards, and minimizing administration costs and staff time for street light maintenance. Assessing and levying the street lighting fees for the 1982 District and the 2018 District will allow the City to sustain environmental benefits of the LED lights.

RATIONALE FOR RECOMMENDATION

Failure to adopt Resolutions ordering the preparation of Engineer's Reports for the City's street lighting assessments would result in non-compliance of the requirements set forth in the Act. Failure to comply with the Act would jeopardize the City's ability to levy and collect assessments in Fiscal Year 2023. The collection of these assessments is needed to establish financial sustainability for the Program and to avoid significant reductions in service.

CONTACT PERSON

Liam Garland, Director, Department of Public Works, (510) 981-6303
Joe Enke, Manager of Engineering/City Engineer, (510) 981-6411

Attachments:
1: Resolution – Initial Proceedings – Street Lighting Assessment District 1982-1
2: Resolution – Initial Proceedings – Street Lighting Assessment District 2018

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

INITIATE PROCEEDINGS FOR BERKELEY STREET LIGHTING ASSESSMENT DISTRICT 1982-1 FOR FISCAL YEAR 2023 AND ORDER CITY STAFF TO PREPARE AND FILE THE ENGINEER'S REPORT FOR FISCAL YEAR 2023

WHEREAS, on July 27, 1982, the Council of the City of Berkeley Adopted Resolution No. 51,449–N.S. that completed proceedings to form the Berkeley Street Lighting Assessment District No. 1982-1 pursuant to Chapter II of the Landscaping and Lighting Act of 1972 Streets and Highways Code Section 22585-22613; and

WHEREAS, Section 22622 of the Street and Highway Code requires the City Council to adopt a resolution generally describing any proposed new improvements to be used to determine the annual assessment levied for any assessment district created under the Landscaping and Lighting Act of 1972; and

WHEREAS, Section 22622 further requires that the City Council order the preparation of an Engineer's Report prior to initiating proceedings to set the annual levy and collection of assessments for such assessment districts.

NOW THEREFORE, BE IT RESOLVED, by the Council of the City of Berkeley that improvements to be included in Berkeley Street Lighting Assessment District No. 1982-1 for assessing Fiscal Year 2023 fees are generally described as maintenance or servicing, or both, of existing and future public lighting facilities, including, but not limited to, traffic signals and the installation and construction of public lighting or the maintenance or servicing thereof, including but not limited to grading, clearing, removal of debris, installation and construction of curbs, gutters, walls, sidewalk or paving, or water, irrigation, or drainage related to operation of the public lighting facilities.

BE IT FURTHER RESOLVED, Pursuant to Street and Highways Code Section 22622, that City Engineer is hereby directed to prepare the annual Engineer's Report prior to initiating proceedings to levy and collect the annual assessment for Berkeley Street Lighting Assessment District No. 1982-1 in Fiscal Year 2023.

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

INITIATE PROCEEDINGS FOR STREET LIGHTING ASSESSMENT DISTRICT 2018 FOR FISCAL YEAR 2023 AND ORDER CITY STAFF TO PREPARE AND FILE THE ENGINEER'S REPORT FOR FISCAL YEAR 2023

WHEREAS, on June 12, 2018, the Council of the City of Berkeley Adopted Resolution No. 68,432–N.S. that completed proceedings to form the Street Lighting Assessment District 2018 pursuant to Chapter II of the Landscaping and Lighting Act of 1972 Streets and Highways Code Section 22585-22613; and

WHEREAS, Section 22622 of the Street and Highway Code requires the City Council to adopt a resolution generally describing any proposed new improvements to be used to determine the annual assessment levied for any assessment district created under the Landscaping and Lighting Act of 1972; and

WHEREAS, Section 22622 further requires that the City Council order the preparation of an Engineer's Report prior to initiating proceedings to set the annual levy and collection of assessments for such assessment districts.

NOW THEREFORE, BE IT RESOLVED, by the Council of the City of Berkeley that improvements to be included in Street Lighting Assessment District 2018 for assessing Fiscal Year 2023 fees are generally described as maintenance or servicing, or both, of existing and future public lighting facilities, including, but not limited to, traffic signals and the installation and construction of public lighting or the maintenance or servicing thereof, including but not limited to grading, clearing, removal of debris, installation and construction of curbs, gutters, walls, sidewalk or paving, or water or irrigation, drainage related to operation of the public lighting facilities.

BE IT FURTHER RESOLVED, Pursuant to Street and Highways Code Section 22622, that City Engineer is hereby directed to prepare the annual Engineer's Report prior to initiating proceedings to levy and collect the annual assessment for Street Lighting Assessment District 2018 in Fiscal Year 2023.

Commission on Disability

23

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Commission on Disability

Submitted by: Commission on Disability, T. Michai Freeman (Chair)

Subject: Vacancies on Commission on Disability

RECOMMENDATION

Appoint new members to fill vacancies on the Commission on Disability from

District 3, District 4, District 5, District 6, District 7, and Mayor Jesse Arreguin

FISCAL IMPACTS OF RECOMMENDATION

NONE

CURRENT SITUATION AND ITS EFFECTS

The Commission on Disability is charged with promoting the total integration and participation of persons with disabilities in all areas of economic, political, and community life. Currently three commissioners are seated on the Commission on Disability out of a nine-member panel. We ask councilmembers and Mayor Jesse Arreguin make appointments to the Commission on Disability to enable this body to effectively pursue the Commission's mandate. Item passed January 19, 2022. Submitted to Secretary February 9, 2022. (Motion: Freeman Second: Walsh, Freeman: aye, Walsh: aye, Singer: aye)

RATIONALE FOR RECOMMENDATION

The Commission on Disability commissioners, while dedicated, are limited in their work to effectively advise the City of Berkeley.

ALTERNATIVE ACTIONS CONSIDERED

NONE

CONTACT PERSON

Secretary, Dominika Bednarska,
Department of Public Works
(510) 981-6418

24

Disaster and Fire Safety Commission

ACTION CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Disaster and Fire Safety Commission

Submitted by: Jose Luis Bedolla, Chairperson, Disaster and Fire Safety Commission

Subject: Recommendation to Identify High Risk Safety Areas that are Exempt from State Imposed Housing Increases Due to Public Safety Considerations

RECOMMENDATION

The Disaster and Fire Safety Commission (DFSC) recommends that the City Council define the location of those areas in Berkeley in which residents are at high risk due to public safety considerations and use this information to help guide the Housing Element process so that greater density and development in those areas is avoided to the extent reasonably possible. These areas include:

1. Fire Zones 2 and 3 with narrow (26 feet or less in width), winding streets, or those with "pinch-points' that do not allow emergency vehicle access and safe evacuation routes for residents in the event of a wildfire; and
2. Locations within the Alquist-Priolo (Hayward Fault) Earthquake Zone identified by the California Geological Survey; and
3. Locations within the Liquefaction or Landslide Zones identified by the California Geological Survey and areas associated with creeks, above and underground and subject to the impacts of Sea Level Rise.

A. Establish a Priority: The DFSC requests that the identification process begin with items 1 and 2 listed above. State legislation mandating increased development in these areas is effective January 1, 2022, and the identification of the boundaries of areas where residents are at high risk in Berkeley should be completed prior to that date. Item 3 is also important, but as a practical matter, it may take longer to review. Therefore, completing identification may have to be done in steps over time.
An additional consideration in giving priority at this time to areas affected by fire is that we are now in the "traditional" wildfire season with the clear statewide warning that today's wildfires are both more frequent and intense and are being fueled by the State's continued severe drought with no relief in the foreseeable future.

B. Establish an Easy-to-Understand Map Format: The DFSC requests that the identification information presented be in an easy-to-understand map format that is available to the public and kept in an up-to-date format as the process progresses. This format should; within technical capability, clearly identify streets that are boundaries to the public safety areas. The California Geological Survey already maintains property-specific maps that address Items 1 and 2 above. The DFSC requests that the City produce similar maps for the other hazardous areas as they are identified.

C. Need for Timely Action: The Council has recently taken action to indicate their intent to begin a process to complete the Sate required new Housing Element for the City's General Plan. Establishing high-risk public safety areas is a foundational tool in the work that needs to be done to complete a new Housing Element.

D. Provides an Opportunity to Inform the Public: Defining high-risk public safety zones not only informs residents about the nature of the risks but encourages individuals and groups to be part of the effort to reduce those risks.

FISCAL IMPACTS OF RECOMMENDATION

Exact costs and staff time in changing the scope of work that has already been planned are to be determined.

CURRENT SITUATION AND ITS EFFECTS

There is broad agreement that Berkeley's Wildfire Urban Interface (WUI) areas, the existence of the Hayward Earthquake Fault and landslide areas present serious safety concerns for residents.

Added to these concerns is the emerging information regarding the stability of land subject to Sea Level Rise. These safety risks should be a bedrock consideration that helps guide the Housing Element process so that greater density and development in these areas can be avoided to the extent reasonably possible. In undertaking that process, the boundaries of high-risk public safety areas must be identified.

The CalFIRE map of Berkeley's "Very High Fire Hazard Severity Zone" is reflected in the map shown in Attachment 1. The area to the right of the dotted line drawn through the gray area reflects a portion of Fire Zone 2 and all of Fire Zone 3, the ES-R zoned area known as Panoramic Way.

The portion of the gray area to the left of the dotted line is the rest of Fire Zone 2. The gray area indicates all of Fire Zone 2. See Attachment 2 which shows this without the CalFIRE dividing line drawn through Fire Zone 2 that is shown in Attachment 1.

Around 2008, CalFIRE recommended and published maps for the Very High Fire Hazard Severity ones in what was called Local Responsibility Areas (LRAs). According to Fire Department staff, Berkeley found that while CalFIRE maps approximated the boundaries historically considered to be at risk for wildfire in Berkeley, there were areas that should be included under the LRA provision. This means that Berkeley's High-Fire risk Areas are a combination of Fire Zone 3 and all of Fire Zone 2 as reflected in the Attachment 2 map.

An additional reason to clarify the boundaries of public safety areas is found in a last minute addition to the new State housing legislation that provides than an urban lot split in a single-family zone may be denied if the building official makes a written finding, based upon a preponderance of the evidence that the proposed housing development would have a specific, adverse impact on public health and safety or on the physical environment, and for which there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact. Having to consider this provision means that staff will have to have readily available information on a variety of factors. Identifying the boundaries of high-risk safety areas would be an essential part of the information which would be needed.

Since this recommendation pertains to more than wildfire areas, it is recommended that generally such areas should be known as "high-risk public safety areas."

BACKGROUND

In response to a directive from Governor Newsom, the Association of Bay Areas Governments assigned the task of producing 441,176 new housing units to cities and counties in the Bay Area. Berkeley's share is to provide from 7,730 to 9,025 new Rental Housing Needs Allocation (RHNA) goals over the next eight years. RHNA goals include percentages of groups ranging from very low income to above moderate-income levels which must be met. To accomplish this, Berkley is currently engaged in an 18-month process to update the Housing Element of our General Plan. The statutory deadline is that the result must be submitted to the California Department of Housing and Community Development by January 31, 2023. The Housing Element must include an inventory of sites where the new units will be located. Overall, the General Plan guides our future growth, and in addition to the Housing Element, it includes such other matters as preparation for disaster, natural and man-made. Goal 6 in the current Plan states that the intent is to make Berkeley a disaster resistant community that can survive, recover from, and thrive after a disaster.

Throughout all of the discussions that have occurred about disasters, it is recognized that certain areas are considered to be high-risk because of wildfires, but without confirmation of the exact boundaries of those areas. There has also been consistent mention of other public safety considerations such as Sea Level Rise, liquefaction and creeks, but no specific consideration regarding the impact of additional growth on public safety in these and other areas has followed. Land has already been identified by the City as being subject to Sea Level Rise and liquefaction. In March 2021, a new study indicated that land along our coast was currently sinking due to the weight of current development on non-engineered landfill.

Clearly the approval of a new Housing Element is a major task that must involve robust citizen participation by Berkeley residents. DFSC believes that we need to start by defining the geologic and other areas that pose a public safety threat. We must act immediately regarding the high-risk fire hazard areas as indicated in Items 1 and 2 on our list and any inability to develop maps for the hazards listed in Item 3 on a timely basis should not delay identification of other areas as we move through the list.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
Reducing Berkeley's contribution to climate change impacts is a large task given the State mandate to produce a new Housing Element that meets the assigned RHNA numbers. Ignoring the identification of high-risk public safety zones is not the answer. Approving multi-family buildings that are accessible to public transportation, but still offer tenant parking and which do not contain affordable housing goals at all levels is not the answer. These are issues along with others which must be sorted out in the Housing Element approval process, but which do not impact the need for boundary identification of high-risk public safety areas.

RATIONALE FOR RECOMMENDATION
DFSCs recommendation is based on the concept that planning future growth is built on a foundation that identifies those areas which contain the elements that place both residents and the future of the City at risk. Increasing population in high-risk public safety zones should not be delayed because of side issues such as street parking, enforcement or past history. We need to look at this issue from a current comprehensive planning perspective that allows growth in a resilient city that can survive and thrive before, during and after a disaster.

ALTERNATIVE ACTIONS CONSIDERED
There is no real alternative to undertaking an identification process that includes all parts of the city.

CITY MANAGER
The City Manager recommends referring this item the budget process.

Staff concurs that public safety considerations are a critical factor in the development and implementation of the City's Housing Element Update. Already in alignment with the Disaster and Fire Safety Commission's recommendation, the City's Disaster Preparedness and Safety Element of the General Plan and Local Hazard Mitigation Plan provide substantial guidance towards hazard identification and public safety considerations. The City's adherence with timelines and requirements for the Housing Element Update ensure that safety of residents is prioritized when identifying housing opportunity sites and affirmatively furthering fair housing. Furthermore, the statutory deadline for Housing Element certification and a requirement for Annual Progress Reports on the Housing Element State ensure timely action for implementation.

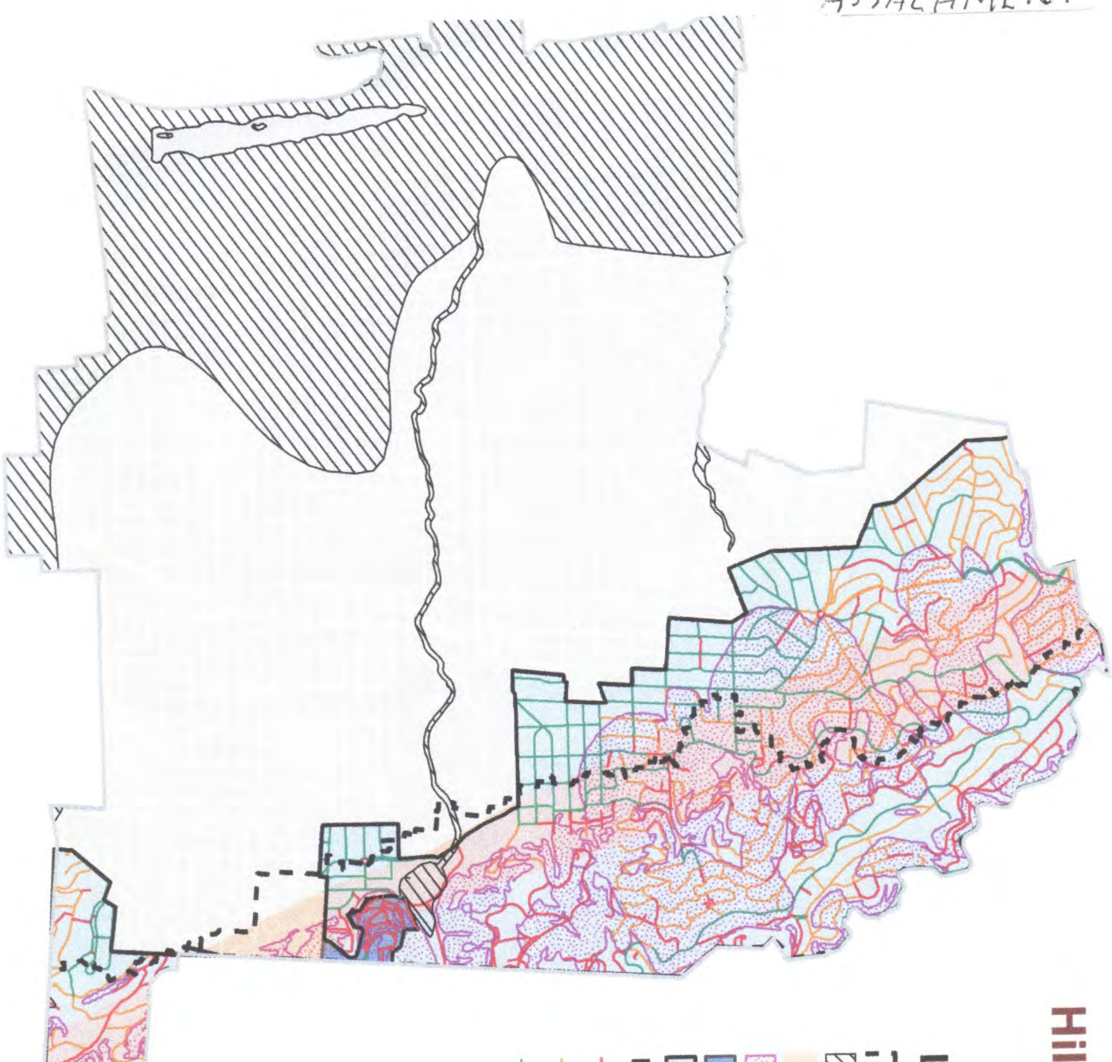
The Housing Element Update requires public input and provides the community with a level of understanding about the project process and materials. This outreach includes residents and community members, discussing program and policies that can reduce risks due to natural hazards. The community is engaged in the Housing Element Update and has provided valuable feedback at two City Council Worksessions (9/21/21 and 12/9/21) and two public workshops (10/27/21 and 1/27/22). The next City Council Worksession will be held on 3/15/22, during which time the public will have an opportunity to address Council.

Per State law, the Disaster Preparedness and Safety Element of the General Plan needs to be updated prior to 2024. On January 25, 2022, City Council referred to the City Manager an update of the Disaster Preparedness and Safety Element. Staff will be requesting funding during the FY2022-2024 budget cycle to fund this project which will ensure that public safety considerations are kept up to date as the City continues to reach its goals on housing.

<u>CONTACT PERSON</u>
Keith May, Secretary, Disaster and Fire Safety Commission, 510-981-5508

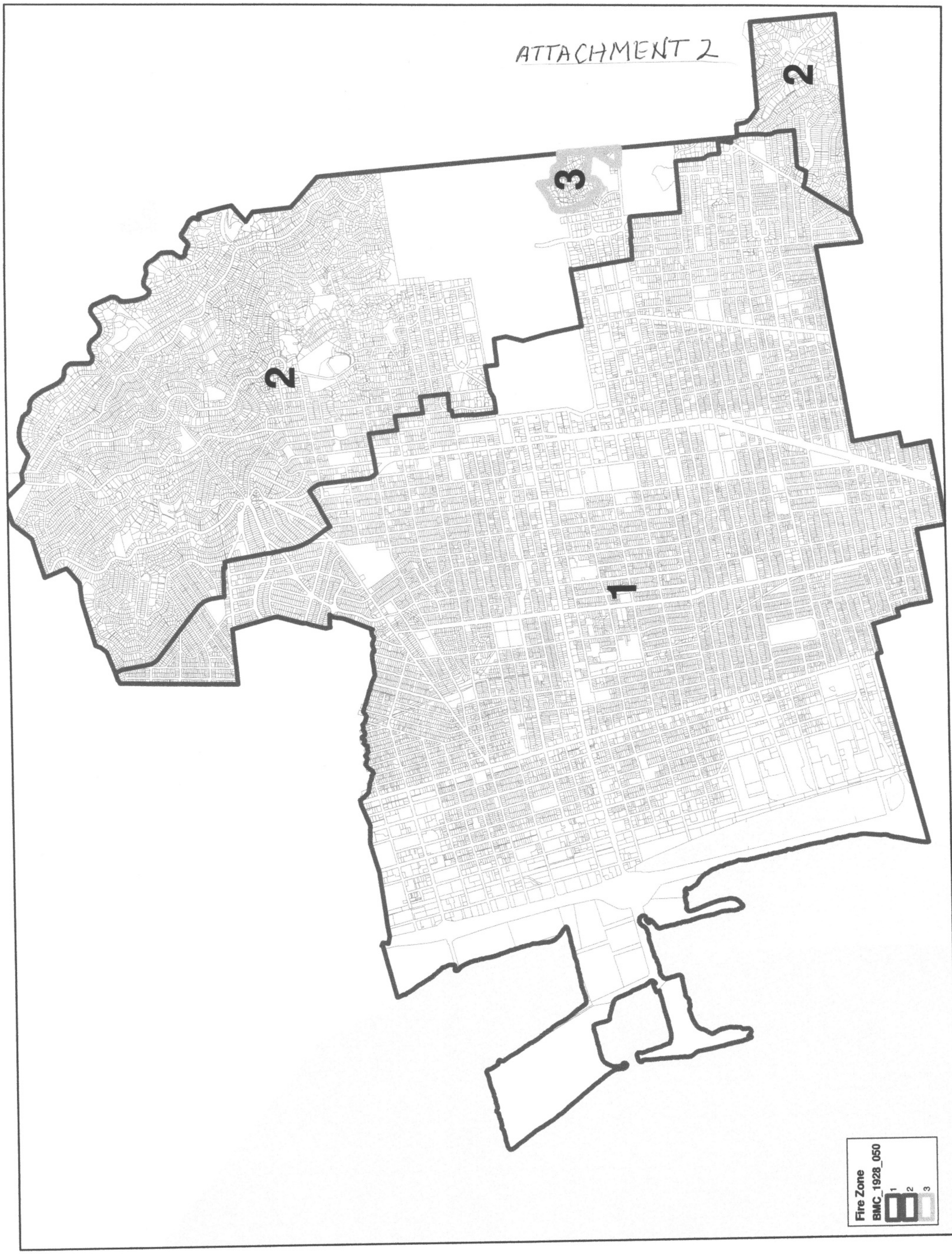
Attachments:
1: Hillside Conditions Map
2: Berkeley Fire Zones Map

ATTACHMENT 1



Recommendation to Identify High Risk Safety Areas that are Exempt from State Imposed Housing Increases Due to Public Safety Considerations

ACTION CALENDAR
March 22, 2022



Parks and Waterfront Commission

25

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Parks, Recreation, and Waterfront Commission

Submitted by: Gordon Wozniak, Chair, Parks, Recreation, and Waterfront Commission

Subject: Letter of Support for Budget Referral: South Sailing Basin Dredging

RECOMMENDATION
Send the attached Letter of Support for Budget Referral: South Sailing Basin Dredging to be added to the scope of the project for the study of dredging the main channel.

BACKGROUND
At a regular meeting of the Parks, Recreation, and Waterfront Commission on Wednesday, February 16, 2022, the commission took action to send to Council the attached Letter of Support (M/S/C: Floyd/Capitelli): Ayes: Birnbach; Capitelli; Cox; Diehm; Floyd, Kawczynska; Landoni; Srioudom; Wozniak; Noes: None; Abstain: None.

FINANCIAL IMPLICATIONS
This referral refers to the budget process the consideration of $350,000 for planning and evaluation work related to South Sailing Basin dredging. Combining the planning and evaluation work for both projects, may result in cost savings.

ENVIRONMENTAL SUSTAINABILITY
Staff should research and consider the environmental impact of dredging the South Sailing Basin.

CITY MANAGER
The City Manager concurs with the recommendation contained in this report.

CONTACT PERSON
Gordon Wozniak, Chair, Parks, Recreation, and Waterfront Commission, 510-666-0662

Attachments:
1. Letter of Support – Parks, Recreation, and Waterfront Commission to Council

2. Photo of South Sailing Basin dock and surrounding mudflats at low tide at 3:53 PM on Jan. 30, 2022

Attachment 1

City of Berkeley
Parks, Recreation, and Waterfront Commission

Date: Feb. 16, 2022

Re: Support for Dredging the South Sailing Basin

To the Berkeley City Council:

The Parks, Recreation, and Waterfront Commission strongly supports the Budget Referral of $350,000 for planning and evaluation of dredging in the South Sailing Basin. At present, the City has hired a consultant for planning work for dredging the Main Harbor channel. Adding the South Sailing Basin dredging study to this contract could result in significant savings.

The South Sailing Basin provides water access for small-craft and aquatic recreation: e.g. small sailing boats, kayaks, paddle boards, windsurfing, and swimming. Since the basin has not been dredged in 50 years, the accumulation of silt and mud, make it impossible to launch boats on low tide days. See Attachment 2, which shows a low-tide event on Jan. 30, 2022, where the mudflats extended beyond the launching dock.

The silting of the South Sailing Basin threatens the long-term viability of aquatic recreation in this area and could jeopardize the City's multimillion dollar investment in new docks, launch facilities, and parking. If dredging is not carried out, these important recreation facilities could eventually be closed, which would be a loss for everyone.

Respectfully,

Gordon Wozniak, Chair

Berkeley Parks, Recreation, and Waterfront Commission

Attachment 2

Photo of South Sailing Basin dock and surrounding mudflats
at low tide at 3:53 PM on Jan. 30, 2022

26

Parks and Waterfront Commission

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Parks and Waterfront Commission

Submitted by: Gordon Wozniak, Chair, Parks and Waterfront Commission

Subject: Letter of Support for Infrastructure Improvement Projects in the Berkeley Waterfront from the Parks, Recreation, and Waterfront Commission to State Senate Budget Chair Skinner and Assembly Budget Chair Ting

RECOMMENDATION
Send the attached Letter of Support for Infrastructure Improvement Projects in the Berkeley Waterfront from the Parks, Recreation, and Waterfront Commission to State Senate Budget Chair Skinner and Assembly Budget Chair Ting.

BACKGROUND
At a regular meeting of the Parks, Recreation, and Waterfront Commission on Wednesday, February 16, 2022, the commission took action to request Council send the attached Letter of Support (Attachment 1) (M/S/C: Kawczynska/Cox/U): Ayes: Birnbach; Capitelli; Cox; Diehm; Floyd, Kawczynska; Landoni; Srioudom; Wozniak; Noes: None; Abstain: None.

FINANCIAL IMPLICATIONS
The Berkeley Waterfront has $15 million in key improvement projects that are in need of immediate funding.

ENVIRONMENTAL SUSTAINABILITY
No negative impact and consistent with City standards.

CITY MANAGER
The City Manager concurs with the recommendation contained in this report.

CONTACT PERSON
Gordon Wozniak, Chairperson, Parks and Waterfront Commission, 510-666-0662

Attachments:
1. Letter of Support – Parks, Recreation, and Waterfront Commission – to the State

Attachment 1

City of Berkeley
Parks, Recreation, and Waterfront Commission

Date: Feb. 16, 2022

Re: Support for Infrastructure Improvements to the Berkeley Marina

To Whom It May Concern:

The Parks, Recreation and Waterfront Commission voted unanimously at its meeting on Feb. 16, 2022, to express its support for the City of Berkeley's funding request for Infrastructure Improvements at the Berkeley Marina. (See list in Attachment 2).

The Berkeley Waterfront is a beloved recreational area offering a 1,000-slip Marina, more than 100 acres of open space and seven miles of trails that delight dog owners, birdwatchers, sailors, windsurfers, bicyclists, kite flyers, and anyone seeking to enjoy fresh air and expansive views of the bay.

Over the last fifteen years, despite investing $40 million in capital improvement projects at the Marina, there remains $130 million in unfunded infrastructure needs.

To help the Marina recover from the Covid financial impact, it needs revenue-generating infrastructure investments**.** All projects in the $15 million City request to the State are directly related to revenue, except for the perimeter path at Cesar Chavez Park. An improved main channel that is passable at low tide and new berthing slips, with sizes attractive to the current market, will improve occupancy rates and annual revenues by ~$0.5M.

Looking ahead, and to ensure fiscal sustainability, the City has engaged in a long-range planning effort, the Berkeley Marina Area Specific Plan (BMASP), which will inform future development and provide alternative visions for a sustainable waterfront area. To protect the environmental jewel that is the waterfront and State land granted, a robust CEQA process shall be performed for all projects.

We respectfully request State support for these highest-priority capital improvement projects. If in the next budget cycle, additional funds are available, there are several priority projects that would improve fishing and recreational access to the Bay, but are non-revenue generating.

Thank you for your consideration and we look forward to working in partnership to ensure the vitality and longevity of the Berkeley Marina for decades to come.

Respectfully,

Gordon Wozniak, Chair, Berkeley Parks, Recreation, and Waterfront Commission

2180 Milvia Street, Berkeley, CA 94704 ● Tel: (510) 981-7000 ● TDD: (510) 981-6903 ● Fax: (510) 981-7099
E-Mail: manager@CityofBerkeley.info Website: http://www.CityofBerkeley.info/Manager

Attachment 2

The Berkeley City Council's request to State Senator Nancy Skinner for $15 million of investment in the following critical needs at the Berkeley Marina:

1. **Dredging Main Channel - $6,000,000**

   Both the northern and southern entrances to the main Berkeley Marina need to be dredged. They were last partially dredged in 1989 by the Federal Emergency Management Agency after the Loma Prieta earthquake, to allow for large ferry use. Currently, there are several spots where large boats cannot enter or exit during low tide.

2. **Dock Piling Replacement - $1,300,000**
   The Berkeley Marina has approximately 500 pilings. Approximately 50 percent are the original wood pilings, many of which have failed or are near failure. The City has identified $1.2 million in City funding to replace the worst pilings, but is in need of additional funding to replace the remaining wood pilings.

3. **Finger Dock Replacement - $850,000**
   Various small docks next to each slip that are adjacent to each boat need to be replaced in docks K, L, M, N and O. While the main docks are in decent shape, many of the finger docks are failing.

4. **J Dock Replacement - $4,500,000**
   These docks are the oldest remaining unimproved docks since the initial construction in the 1960s. <u>These docks will be converted from small boat slips to slips for medium and larger boats, which should generate more revenue.</u>

5. **J and K Parking Lot - $1,150,000**
   This parking lot is adjacent to the marina office, commercial fishing dock (K), a marina restaurant and the bait shop and has totally failed and needs complete replacement. This parking lot is the busiest marina parking lot and serves multiple public uses in the Berkeley waterfront.

6. **Cesar Chavez Perimeter Path - $1,000,000**
   This failing one-mile pathway needs to be widened to meet Bay Trail standards and there are several locations that do not meet current ADA standards.

7. **Marina Office Piling Replacement - $200,000**
   The twenty wood pilings which hold up the marina office/public restroom and related platform are near failure and need immediate replacement.

27

BERKELEY CITY AUDITOR

CONSENT CALENDAR
MARCH 22, 2022

To: Honorable Mayor and Members of the City Council

From: Jenny Wong, City Auditor JW

Subject: Berkeley Police: Improvements Needed to Manage Overtime and Security Work for Outside Entities

RECOMMENDATION

We recommend City Council request that the City Manager report back by September 29, 2022, and every six months thereafter, regarding the status of our audit recommendations until reported fully implemented by the Berkeley Police Department (BPD). They have agreed to our findings and recommendations. Please see our report for their complete response.

FISCAL IMPACTS OF RECOMMENDATION

Implementing the recommendations will ensure overtime worked by BPD officers is appropriate, saving BPD and the City costs related to unnecessary overtime. Implementation will also ensure the City is appropriately reimbursed for police services to outside entities.

If BPD and City do not implement recommended measures, overtime expenditures may continue to exceed BPD's budgeted amount in the following years. Without the ability to track revenues and expenses of work for outside entities, BPD risks continually underbilling for their services and not recovering the full costs of officer overtime. BPD and the City may also encounter liability costs if BPD continues to provide services to outside entities without contracts that include indemnity agreements.

CURRENT SITUATION AND ITS EFFECTS

BPD relies on overtime to achieve their sworn staffing levels. In Fiscal Year (FY) 2020, nearly a quarter or $1.3 million of BPD's sworn overtime costs went toward backfilling for officer vacancies and absences.

BPD lacks a process to regularly assess the efficacy of minimum staffing levels, and cannot ensure that minimum staffing reflects the current needs of BPD and the community. BPD's minimum staffing levels could cause unnecessary overtime if not regularly updated.

BPD does not adhere to their overtime controls. In FY 2020, 21 percent of sworn officers exceeded BPD's overtime limit at least once. Without adequate enforcement and tools to manage overtime, BPD cannot mitigate risks of officer fatigue.

BPD's overtime security work for outside entities more than tripled in FY 2020. There are no procedures or contracts for this work, and it is unclear if BPD charges outside entities

2180 Milvia Street, Berkeley, CA 94704 ● Tel: (510) 981-6750 ● TDD: (510) 981-6903 ● Fax: (510) 981-6760
E-mail: auditor@CityofBerkeley.info Website: http://www.CityofBerkeley.info/auditor

appropriately. Without policies and documentation, BPD cannot ensure transparent and equitable services.

BACKGROUND
BPD's budget has increased significantly in the past several decades. BPD surpassed the budgeted amount four out of the last five years, with overtime being the primary cause of overspending. Though some amount of overtime is required, overreliance on overtime can increase fatigue and burnout, decrease productivity, and increase mistakes.

ENVIRONMENTAL SUSTAINABILITY
Our office manages and stores audit workpapers and other documents electronically to significantly reduce our use of paper and ink. Our audit recommendation for BPD to use modern staffing software could also reduce the use of paper and ink.

RATIONALE FOR RECOMMENDATION
Implementing our recommendations will improve BPD's management of overtime and mitigate risks associated with excessive overtime and officer fatigue. The recommendations will also ensure BPD's staffing levels are transparent, appropriate, and responsive to the current needs of the community. Additionally, the recommendation ensures BPD's work for outside entities is equitable and transparent, and in full compliance with relevant laws and policies.

CONTACT PERSON
Jenny Wong, City Auditor, City Auditor's Office, 510-981-6750

Attachments:
1: Audit Report: Berkeley Police: Improvements Needed to Manage Overtime and Security Work for Outside Entities

Audit Report
March 3, 2022

Berkeley Police: Improvements Needed to Manage Overtime and Security Work for Outside Entities

BERKELEY CITY AUDITOR

Jenny Wong, City Auditor
Erin Mullin, Senior Auditor
Alejandra Barrio Gorski, Auditor I

Promoting transparency and accountability in Berkeley government

Berkeley Police: Improvements Needed to Manage Overtime and Security Work for Outside Entities

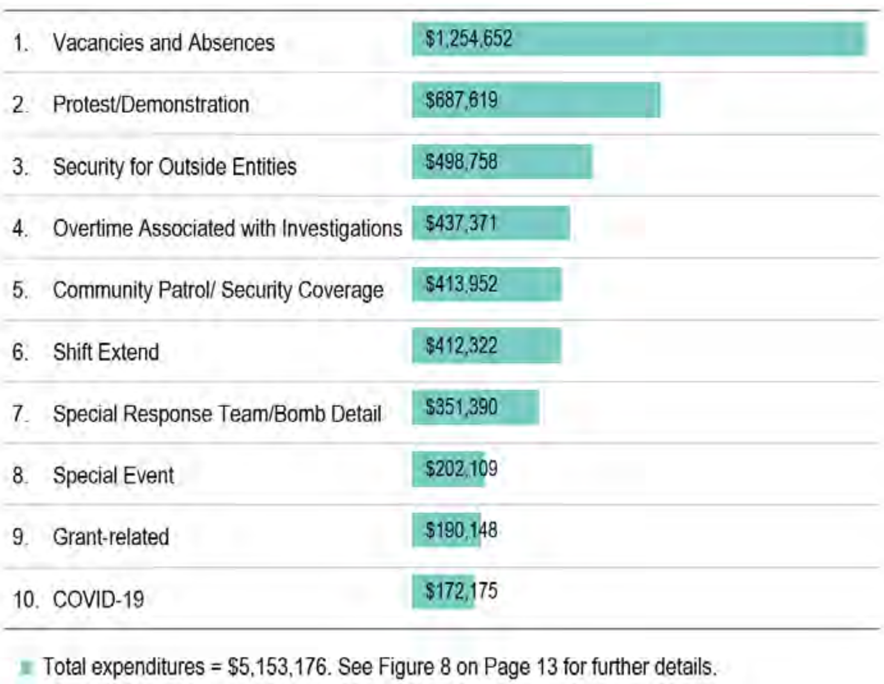
Report Highlights

March 3, 2022

Findings

1. Berkeley Police Department (BPD) relies on overtime to achieve their sworn staffing levels. In Fiscal Year (FY) 2020, nearly a quarter or $1.3 million of BPD's sworn overtime costs went toward backfilling for officer vacancies and absences.

Berkeley Police Department Top 10 Overtime Expenditures, FY 2020



Source: BPD Payroll Data

2. BPD lacks a process to regularly assess the efficacy of minimum staffing levels, and cannot ensure that minimum staffing reflects the current needs of BPD and the community. BPD's minimum staffing levels could cause unnecessary overtime if not regularly updated.

Objectives

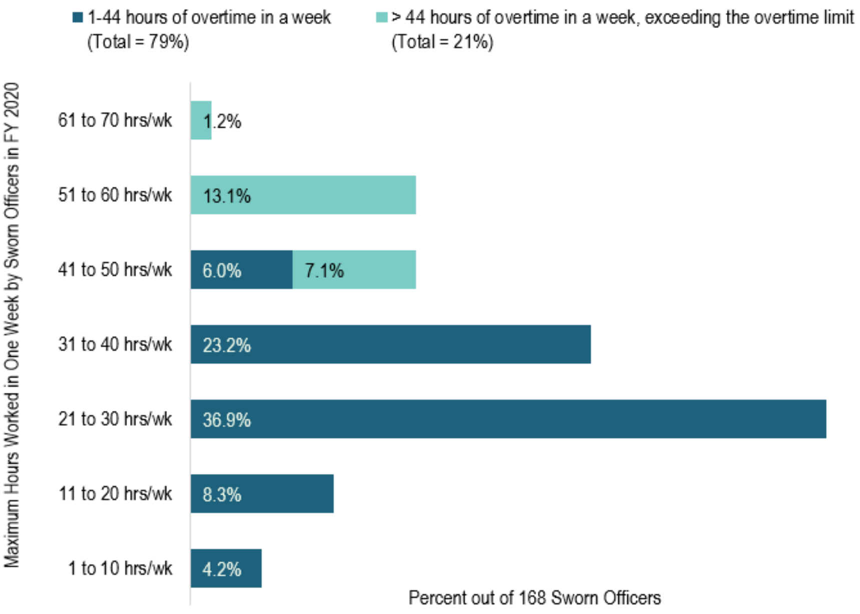
1. What policing functions does BPD's use of overtime cover?
2. Does BPD regularly assess minimum staffing levels to meet community needs?
3. Is BPD's management of overtime sufficient to reduce excessive uses of overtime?
4. Are BPD's agreements to provide work for outside entities transparent and in accordance with the law?

Why This Audit Is Important

BPD exceeded its General Fund budget four out of the last five years. In FY 2020, BPD surpassed its $71.0 million allocation by $4.8 million. Overtime is the primary cause of BPD's overspending, and this report seeks to understand why BPD's overtime spending has increased in recent years. Some overtime is required for various reasons. It is often more cost-effective than hiring staff and allows employees to meet fluctuating workloads. However, overreliance on overtime can increase fatigue and burnout, decrease productivity, and increase mistakes.

3. BPD does not adhere to their overtime controls. In FY 2020, 21 percent of sworn officers exceeded BPD's overtime limit at least once. Without adequate enforcement and tools to manage overtime, BPD cannot mitigate risks of officer fatigue.

BPD Officers Exceed BPD's Overtime Limit of 44 Hours in a Week in FY 2020



Source: BPD Payroll Data

4. BPD's overtime security work for outside entities more than tripled in FY 2020. There are no procedures or contracts for this work, and it is unclear if BPD charges outside entities appropriately. Without policies and documentation, BPD cannot ensure transparent and equitable services.

Recommendations

We recommend that BPD publicly document minimum staffing levels and establish procedures to regularly assess their efficacy. BPD should also evaluate and update overtime policies, and monitor overtime and compensatory time using staffing software.

We also recommend that BPD update policies and procedures, create contracts, and increase transparency on work for outside entities. BPD should also regularly evaluate their billing and explore ways to track revenues and expenses.

This audit does not propose recommendations regarding BPD's staffing levels or service delivery model.

Photo source: Berkeley Police Department

BERKELEY CITY AUDITOR

For the full report, visit:
http://www.cityofberkeley.info/auditor

Table of Contents

Introduction

In our 2021 Audit Plan, we identified the Berkeley Police Department (BPD) budget as an area needing objective and independent analysis of how limited City funds are allocated. In April 2020, our office produced a special report examining the impact of the COVID-19 pandemic on Berkeley's finances. We found that the City may need to reduce expenditures to focus on essential activities that prioritize public health and safety, as well as community values.[1] BPD's overtime expenditures have increased in recent years, and this report seeks to understand why. Some amount of overtime is required due to vacancies, emergencies, special events, staffing shortages, workload fluctuations, etc. It is often more cost-effective than hiring additional staff and allows employees to meet fluctuating workloads. However, overreliance on overtime can increase fatigue and burnout, decrease productivity, and increase mistakes.

In December 2020, the City entered into a contract with outside consultants to research, analyze, and make recommendations in regards to BPD's policing model including the size and scope of operations. It is important to have a staffing model that aligns with the needs of the community. To avoid duplication of work outlined in the City's reimagining public safety process, this report does not assess the adequacy of BPD's staffing levels or service delivery model. There are ongoing discussions in the City about appropriate staffing levels and what functions BPD should undertake.

[1] Navigating the Impact of the COVID-19 Pandemic on Berkeley's Finances: https://www.cityofberkeley.info/uploadedFiles/Auditor/Level_3_-_General/Navigating%20Impact%20of%20COVID-19%20Pandemic%20on%20Berkeley%E2%80%99s%20Finances%20rpt.pdf

Objectives, Scope, and Methodology

Our objectives were to determine:

1. What policing functions does BPD's use of overtime cover?
2. Does BPD regularly assess minimum staffing levels to meet community needs?
3. Is BPD's management of overtime sufficient to reduce excessive uses of overtime?
4. Are BPD's agreements to provide work for outside entities transparent and in accordance with the law?

We examined BPD spending on overtime for fiscal years (FY) 2019 and 2020. We focused on this scope period due to its timeliness and relevance, bearing in mind that 2020 data may reflect the impacts of the COVID-19 pandemic. We assessed historic funding levels going as far back as FY 1970 when data was available. We specifically assessed internal controls significant to the audit objectives. This included a review of selected policies and procedures, interviews with staff from BPD, and source documents for payroll data. In performing our work, we identified concerns about the department's manual process for tracking officer schedules and hours worked to enforce overtime limits and manage staffing. For more information, see p. 43.

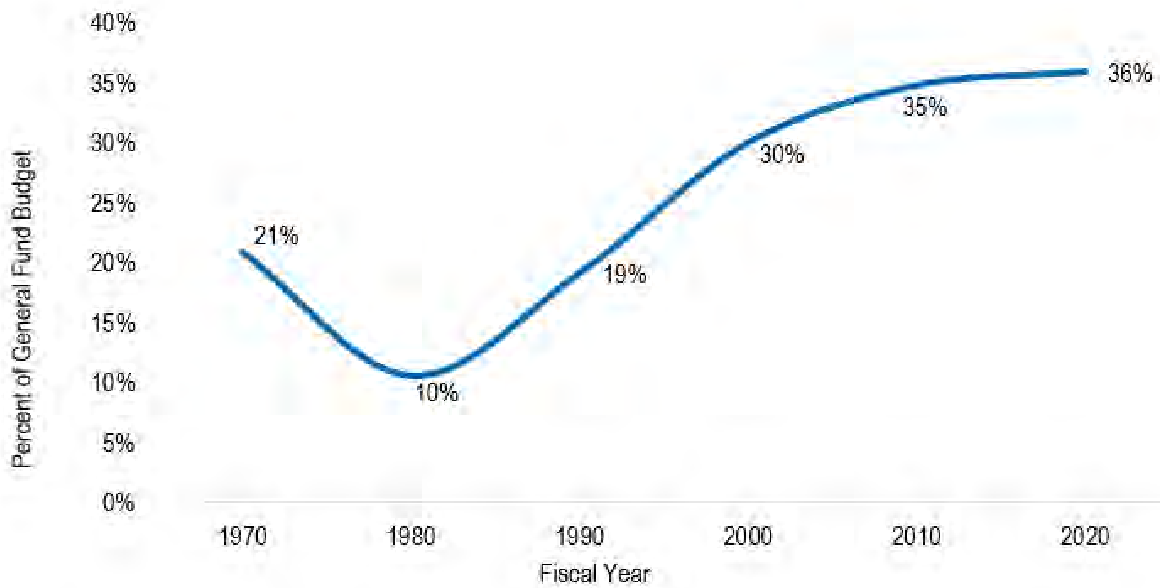
Background

BPD's budget is the largest portion of the City's General Fund.

BPD receives more General Fund money than any other department in the City. The Fire Department is the department with the second highest allocation of General Fund monies.[2] In FY 2020, BPD's allocation of General Fund monies accounted for 36 percent ($70.6 million) of the City's $196.9 million General Fund budget. The percentage of the General Fund allocated to BPD increased from 21 percent in 1970 to 36 percent in 2020, with one notable dip to 10 percent in 1980. In the context of Berkeley's total government expenditures, police spending has remained at a relatively constant level. BPD accounted for 14 percent of government expenditures in FY 2020 which is only a one percent decrease since 1970. Figure 1 only reflects the share of General Fund spending on police services and does not show how staffing and police operations have changed over time.

[2] City of Berkeley, FY 2020-2021 Biennial Budget: https://www.cityofberkeley.info/uploadedFiles/Manager/Budget/FY-2020-2021-Adopted-Budget-Book.pdf

Figure 1. BPD Received 36 Percent of the City's General Fund Budget in FY 2020

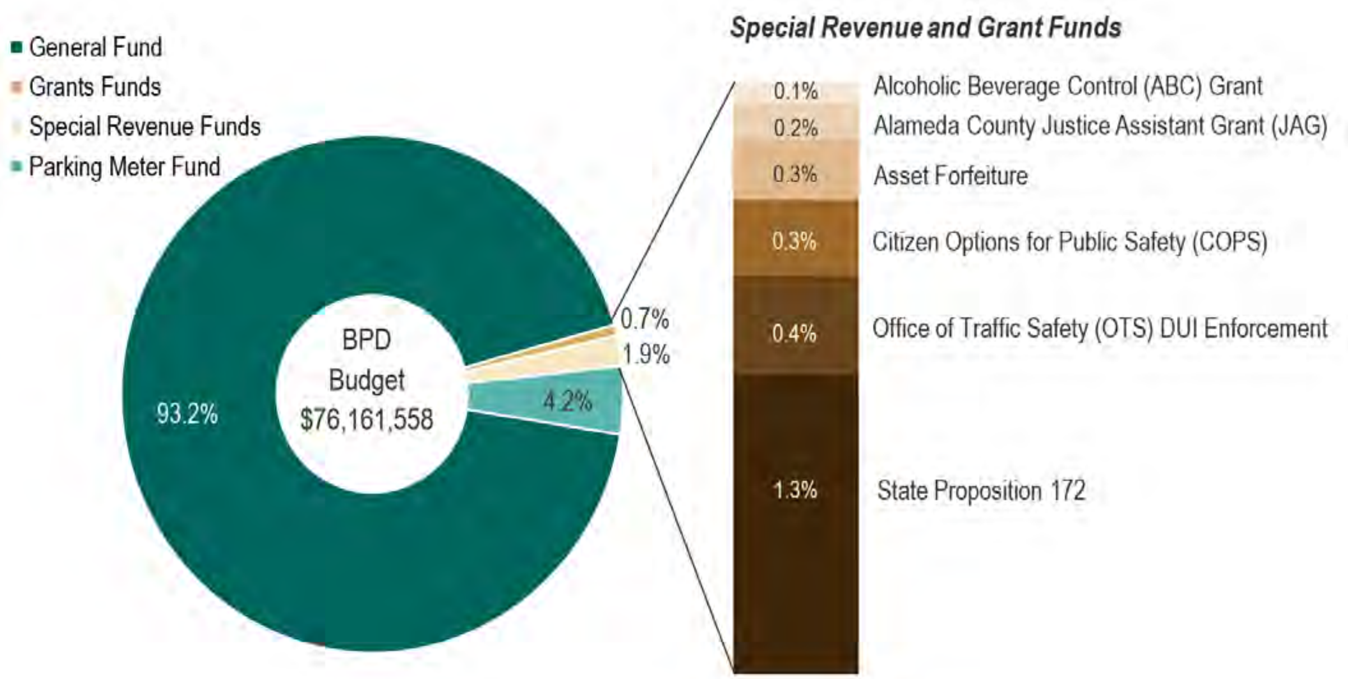


Source: FY 1970, 1980, 1990, 2000, 2010, and 2020 Adopted City Budgets

Most of BPD's budget comes from the City's General Fund.

Ninety three percent of BPD's budget is paid for by the General Fund. Between 2015 and 2020, BPD's funding streams were the General Fund, Parking Fund, Asset Forfeiture Fund, Federal Grants, and State/County Grants. Appendix I provides further information about each fund.

Figure 2. The General Fund Makes Up 93 Percent of the BPD Budget, FY 2020



Source: FY 2020 Revised Budget Data

BPD's budget has increased over time.

Since 1970, the BPD budget has grown significantly each decade, from $21.86 million in 1970 (adjusted to 2020 purchasing power) to $74.98 million in 2020. Personnel costs have accounted for the most significant portion of these budgets. Over the years, personnel costs have increased alongside BPD's overall budget, but the portion of the budget that personnel costs account for has remained consistent at around 89 percent.

In contrast, since 1970, the number of BPD personnel has increased slightly by five percent, coinciding with a five percent increase in the City's population during this period. Meanwhile, the average cost per employee has increased drastically: in 1970, 272 BPD personnel (sworn and non-sworn) cost the city $19.45 million (adjusted to 2020 purchasing power) in wages and benefits, and by 2020, 285.2 employees in the same department cost the City $67 million. On average, the cost of one BPD employee in 2020 was over three times that of one BPD employee in 1970.

Increases in fringe benefit rates contribute to the spike in personnel costs. We analyzed the overall cost of benefits, but did not look at the actual benefits personnel received. The cost of benefits for sworn police has increased significantly over the last five years, and police have the highest fringe benefit rate across the city. Between 2016 and 2020, the fringe benefit rate for sworn police increased 15.92 percent due mostly to an increase in the employer's CalPERS rate. Fire had the next highest rate of 88.28 percent in FY 2020 which was 17 percent lower than Police. With a fringe benefit rate at 105.6 percent of an officer's salary, it is always cheaper to have an officer work overtime rather than hire a new officer. However, it can be more expensive to have a higher ranked sergeant or lieutenant work overtime in place of hiring a new officer.

Figure 3. Officer Fringe Benefit Rates Exceed 100 Percent of Salary

Citywide Composite Fringe Benefit Rates for Sworn and Non-sworn Employees

Year	Sworn Police	Sworn Fire	Non-sworn (citywide)		
			Office	*Field*	*Laborer*
2016	89.68%	77.86%	69.33%	72.72%	89.84%
2020	105.6%	88.28%	66.66%	70.72%	85.09%

Note: These rates are estimates. Non-sworn fringe benefits rates include benefited city employees that are neither a sworn officer nor a firefighter. The type of non-sworn work of an individual position (office, field, laborer) determines the total benefit rate.

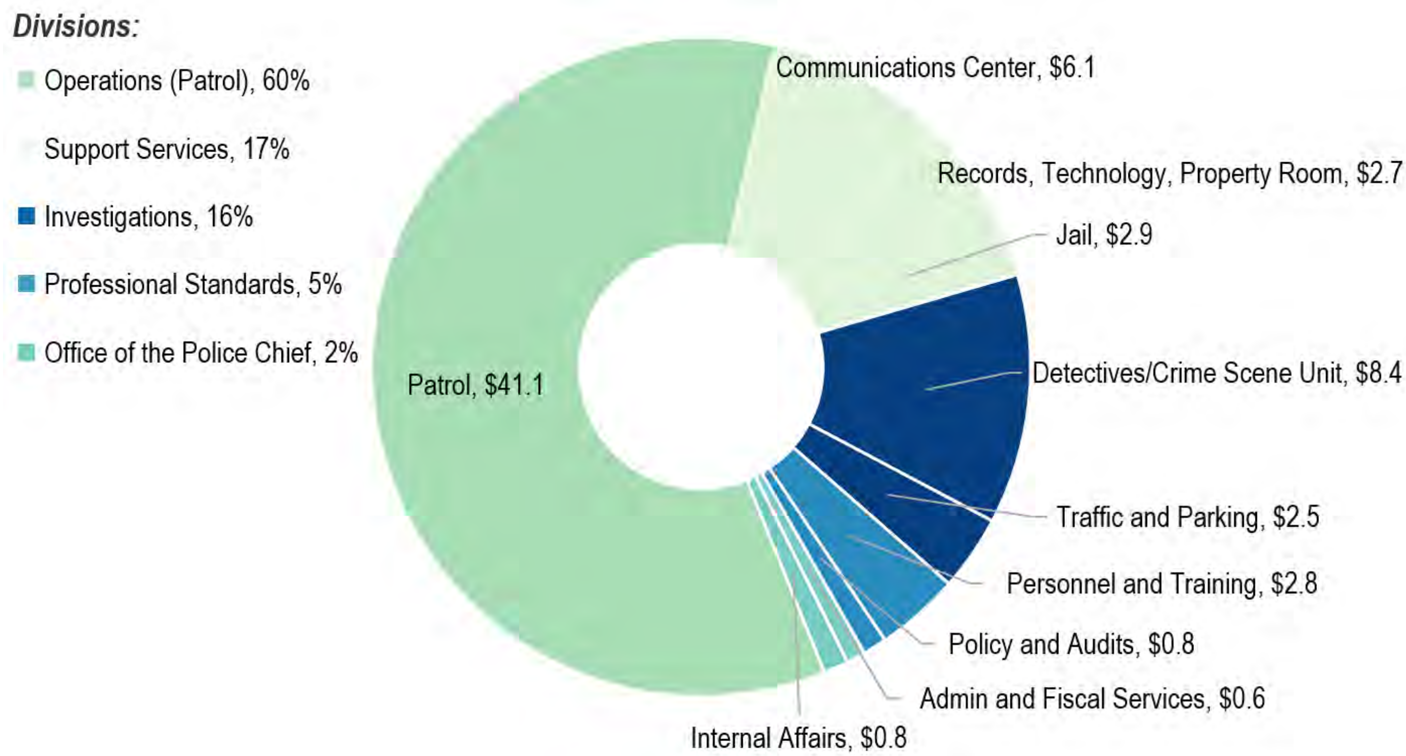
Source: City of Berkeley compensation matrices

Patrol has received the greatest portion of funding.

BPD has four divisions that report to the Chief of Police: Operations, Professional Standards, Support Services, and Investigations. The greatest share of BPD's funding has historically gone toward the Operations Division, which manages the department's Patrol Unit. Patrol is a core function of BPD, with 24/7 operations responding to emergency and non-emergency calls for service, conducting criminal investigations, and providing additional policing services.

Figure 4 shows personnel expenditures from BPD's General Fund, by divisions and subdivisions. In FY 2020, BPD's Patrol Unit accounted for $41.1 million, or 60 percent of personnel costs within the department's General Fund budget.

Figure 4. Patrol Operations Utilized 60 Percent of Personnel Costs from the Department's FY 2020 General Fund Budget, in Millions of Dollars

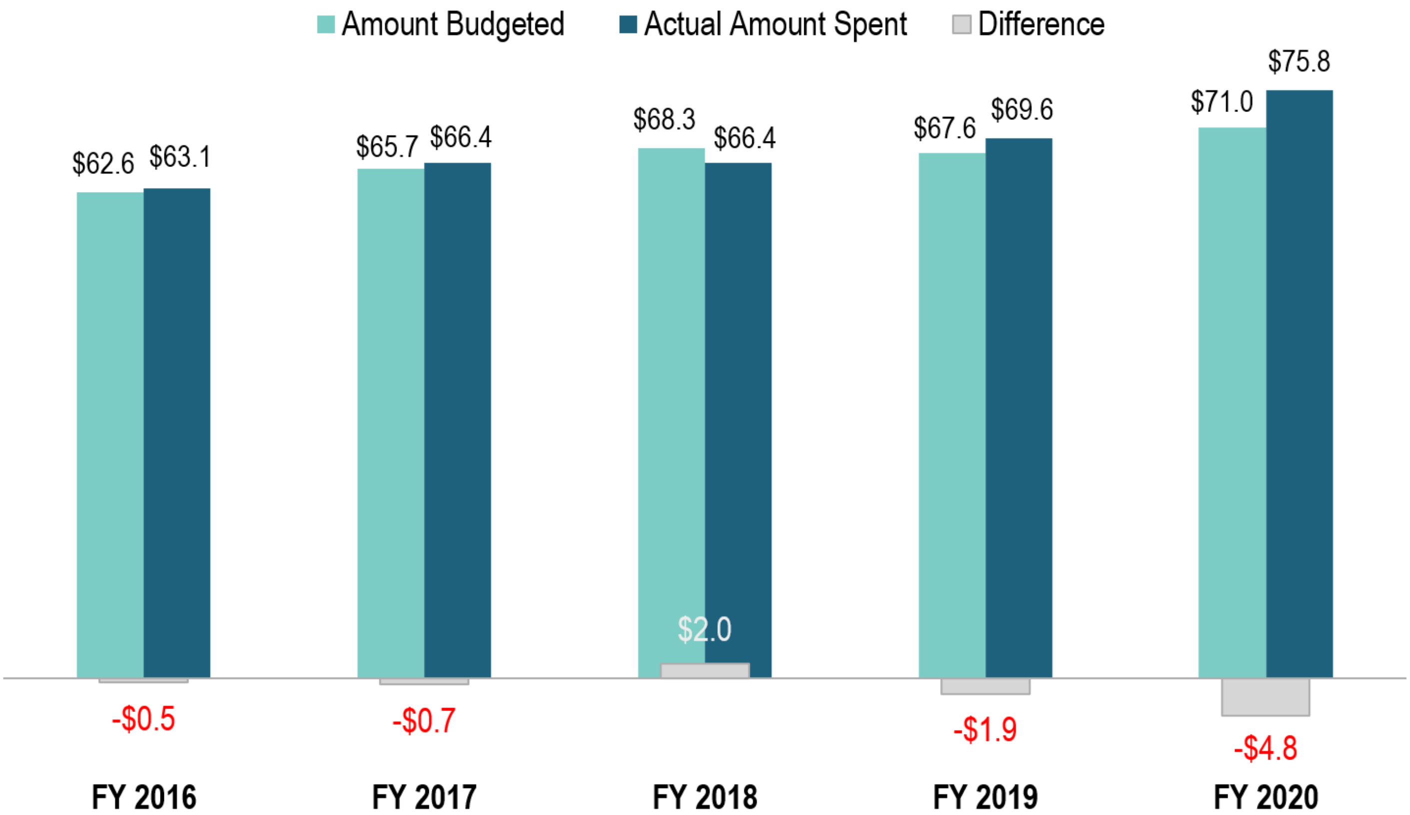


Source: FY 2020 Adopted City Budget

BPD has exceeded its General Fund budget four out of the last five years.

BPD has spent more from the General Fund than budgeted. BPD was half a million dollars over budget in FY 2016, and by FY 2020 the overage was nearing five million dollars. In FY 2020, BPD spent $75.8 million of General Fund monies or approximately $4.8 million more than the budgeted amount. According to the City Budget Office, General Fund savings from other departments are used to cover BPD overages after BPD has exhausted savings within their department.

Figure 5. BPD Spent More General Funds than Budgeted Four Out of Five Years, FY 2016-2020 in Millions of Dollars



Source: BPD presentation to the Budget and Finance Committee on October 22, 2020

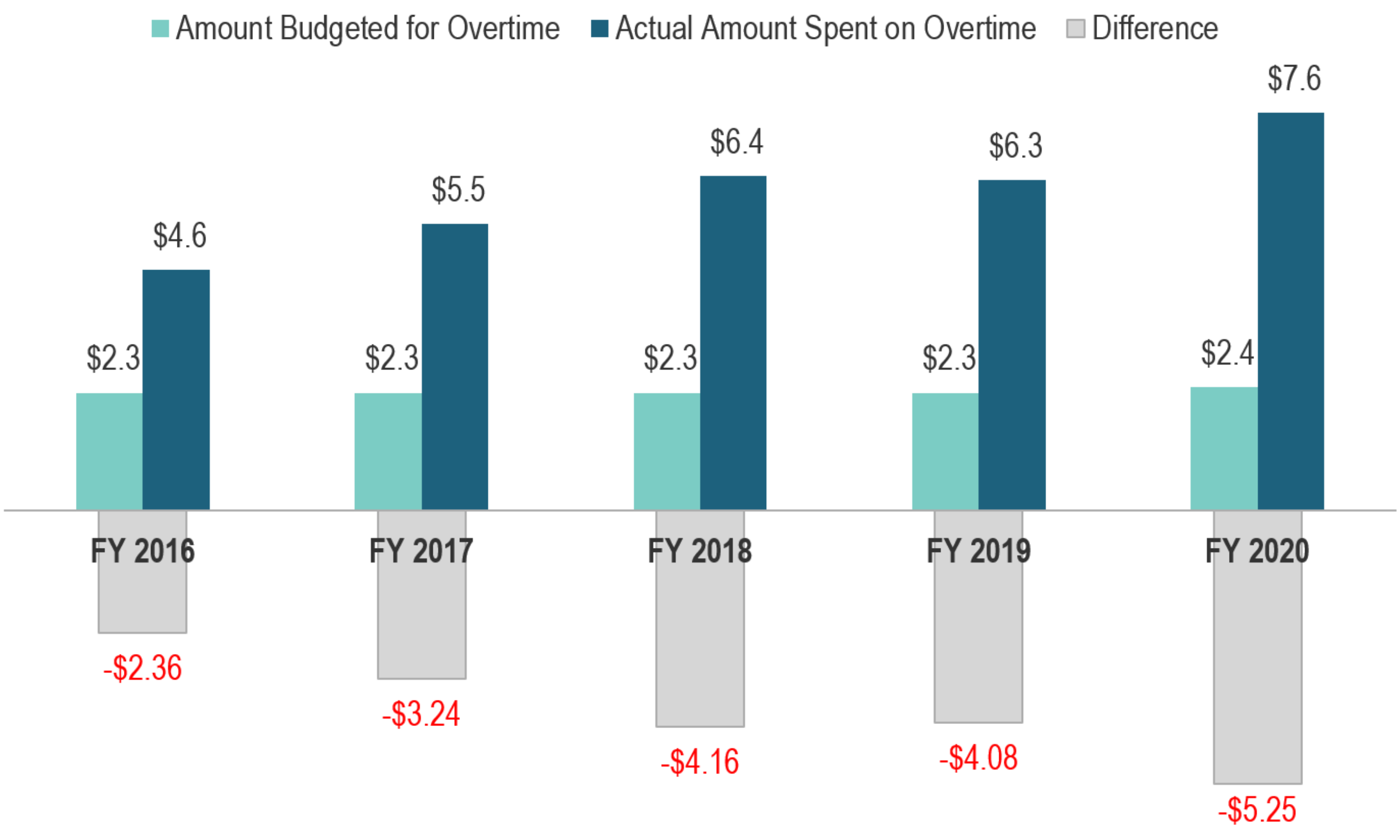
Overtime is the primary cause of BPD overspending, with increased costs each year.

The Operations Division, which contains the Patrol Unit, is BPD's largest division and the biggest user of overtime. Policing is unpredictable and some overtime work is necessary and unavoidable. Officers may need to complete arrests at the end of their shifts, fill in to cover absences, or assist in safely facilitating public events. Police work also inevitably generates off-duty court appearances, trainings, and work on holidays. Some level of overtime can be viewed as a fixed cost of normal policing and will occur regardless of the number of officers employed. Knowing where, when, and why overtime was used is necessary if BPD is to anticipate overtime, to justify its payment, and to find ways to reduce the need for overtime expenditures.

BPD's spending on overtime has consistently exceeded the $2.25 million that the City has budgeted annually over the past ten years. Although BPD exceeded other budget line items in FY 2020, overtime was the biggest reason for the department overages. BPD increased overtime expenditures for public safety power shutoffs, COVID-19, protests, and work for outside entities from FY 2019 to 2020, contributing to an overall increase in overtime expenditures by nearly $1.2 million (see Appendix II for more detail). According to the Budget Office, the City is committed to providing a police overtime budget that aligns with actual overtime expenditures going forward. In FY 2021, the City increased BPD's overtime budget to $5.3 million with an additional $1 million in reserves.

The budget and expenditure data do not show the details of how overtime is paid. Some overtime is paid for by salary savings associated with department vacancies and other overtime is reimbursed from outside entities. However, reimbursements from outside entities are not credited back to the department, and we are unable to determine the reimbursed amounts under BPD's current accounting structure (see page 33). Figure 6 offers a simple snapshot of overtime spending, and does not incorporate other ways in which BPD and the City recover the costs of overtime.

Figure 6. The Cost of Overtime Has Increased, While the Budgeted Funding Has Remained Insufficient, FY 2016-2020 in Millions of Dollars



Note: Includes sworn and non-sworn personnel.

Source: BPD presentation to the Budget and Finance Committee on October 22, 2020

The majority of overtime activities are paid for using BPD's General Fund budget. In FY 2020, 81 percent of overtime activities were budgeted from BPD's General Fund. The remaining 19 percent of overtime activities were budgeted from Grants and the Parking Meter Funds.

Overtime is used to maintain minimum patrol staffing set by BPD.

BPD relies on overtime to achieve the sworn staffing levels set by the department for regular duty operations. In FY 2020, overtime costs for sworn officers exceeded $5 million or 75 percent of the department's total overtime expenditures. Overtime has a variety of beneficial uses, but a large part of overtime at BPD is simply backfilling officer vacancies and absences. While it is generally less expensive to use overtime to fill shift vacancies than it is to hire more staff, BPD relies on backfill in patrol often. In FY 2020, 45 percent of sworn officer's overtime hours in BPD were used to maintain regular duty operations and nearly half of those overtime hours were due to staffing vacancies and absences (Figure 8). Sworn officer vacancies contribute to BPD's reliance on overtime, and more work is needed to understand the full impact. Additionally, BPD does not adequately monitor compensatory time to ensure it does not increase the need for overtime.

Backfilling for officer vacancies and absences was the most common reason for overtime.

In FY 2020, backfilling for officer vacancies and absences was the most common and costly reason for overtime, accounting for 21 percent of sworn officer's overtime hours and costing nearly $1.3 million, or 24 percent of the BPD's total overtime costs (Figure 8). Backfilling is the practice of filling a position to maintain staffing levels after a sworn officer goes on a leave of absence or vacates the position. Sworn officers are most frequently used to backfill to meet minimum staffing levels in the Patrol Unit.

Minimum staffing levels are the lowest number of sworn officers determined by the department that can be deployed while still providing satisfactory levels of service and protection to the public. For BPD, patrol minimum staffing is based on the number of sworn officers needed to cover the City's 16 beats at any given time of day.

According to Policy 1019, BPD overtime compensation is available to Officers, Sergeants, and Lieutenants, and overtime work should ideally have prior approval by a supervisor and be documented with an overtime form.

The overtime form should be reviewed and approved by the Supervisor and Division Captain before going to the Payroll Clerk. Actual hours worked should be recorded on a timesheet.

Overtime is defined as time worked by an employee in excess of 40 hours per week. All overtime is awarded at time and a half unless specifically stated otherwise. An employee may request compensatory time off in lieu of receiving overtime payment (see extraordinary duty form in Appendix III). [3, 4]

[3] Policy 1019: Overtime Compensation Requests, https://www.cityofberkeley.info/uploadedFiles/Police/Level_3_-_General/1019%20Overtime_Compensation_Requests.pdf

[4] See Section 19: Overtime/Shift Extension in Berkeley Police Association MOU: https://www.cityofberkeley.info/uploadedFiles/Human_Resources/Home/Union_Negotiations/Signed%20BPA%20MOU%20-%20Final%2008262021.pdf

According to BPD command staff, patrol maintains a minimum of 60 sworn officers, broken into seven teams with minimums of eight or nine officers based on their beat and shift allocations (Figure 7). Teams are staffed with additional officers above the minimum level to absorb absences. It is unclear if this staffing level in patrol is appropriate, as we discuss further on page 18.

Figure 7. BPD Patrol Unit maintains a minimum staffing level of 60 sworn officers, split into 7 teams to cover 16 beats at all times of the day

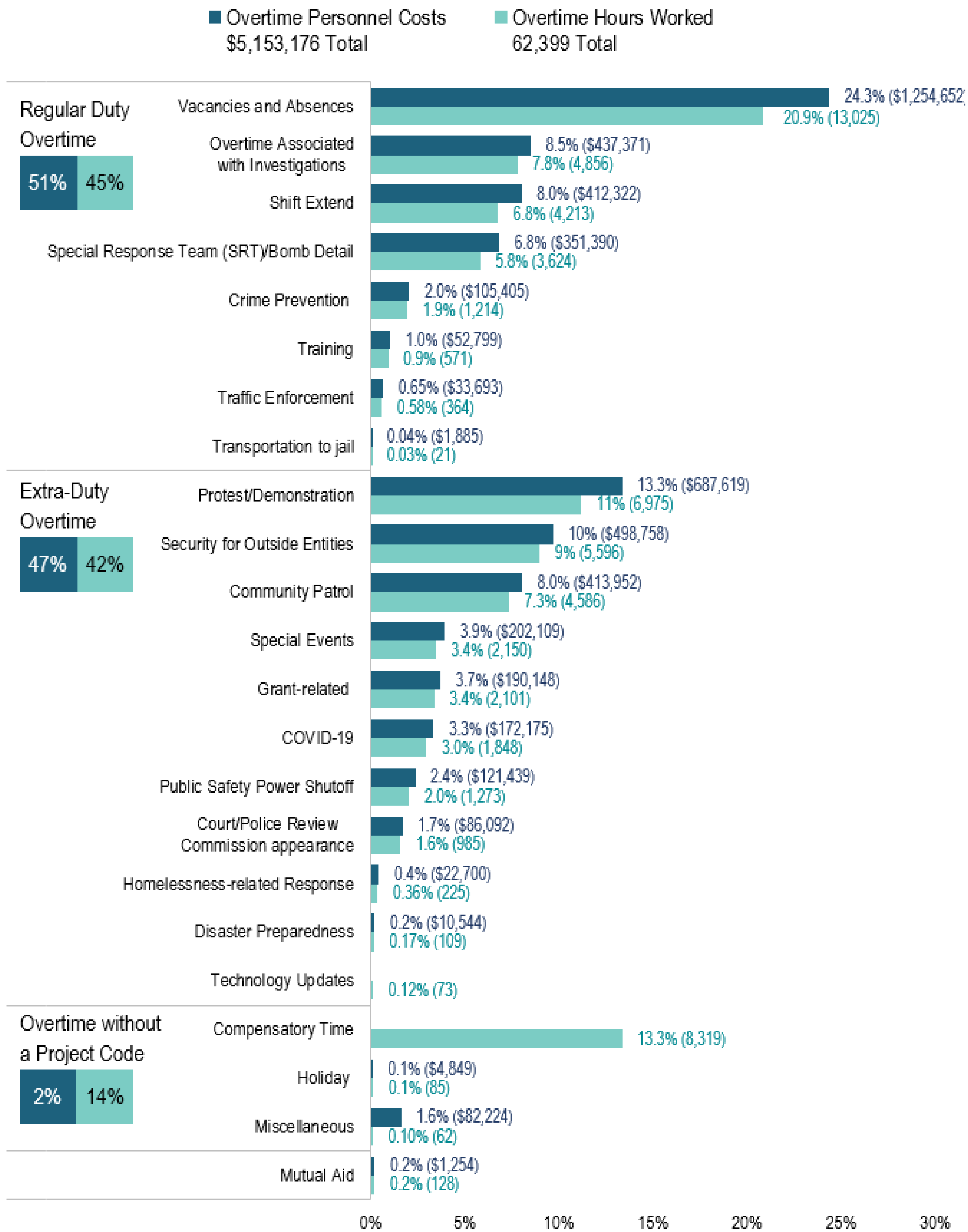
	Teams	Minimum of 60 Officers Total	Shift Time
Monday-Thursday	Team 1	9 officers minimum	6:00am – 4:00pm
	Team 2	8 officers minimum	11:00am – 9:00pm
	Team 3	8 officers minimum	3:30pm –1:30am
	Team 4	9 officers minimum	8:30pm – 6:30am
Friday-Saturday	Team 5	9 officers minimum	6:00am – 6:30pm
	Team 6a	4 officers minimum	11:30am – 12:00am
	Team 6b	4 officers minimum	2:00pm – 2:30am
	Team 7	9 officers minimum	6:00pm – 6:30am

Note: Each team has a minimum of two supervising sergeants. There are four lieutenants, each overseeing two patrol teams. Teams with a minimum of 8 officers cover one beat per officer, while teams with minimums of 9 officers cover two beats per officer, with an additional swing officer when they are the only working team. Swing officers patrol the entire city or fill for absent officers.

Source: Berkeley Police Department

When teams lack sufficient staff to meet their minimums, command staff call in off-duty sworn officers to work overtime and backfill the absences. Persistent backfilling indicates a chronic shortage of personnel in relation to the minimum staffing requirements. We did not determine whether BPD has appropriate minimum staffing or budgeted staffing levels; we only examined the process they use to determine minimum staffing in the next finding section.

Figure 8. Nearly 25 Percent of All Sworn Officer Overtime Was Used Filling Vacancies and Absences, FY 2020



Note: Compensatory time does not have associated personnel costs because the payroll system does not count earned compensatory time as a charge to the City. The miscellaneous category includes hours that did not have a project code assigned due to the individual being a police recruit, an administrative lag, or human error. See Appendix II for a comparison of FY 2019 and FY 2020.

Source: BPD Payroll Data

Vacancies contribute to BPD's reliance on overtime.

BPD's minimum staffing levels are untenable without overtime to backfill vacancies and absences. BPD has experienced sustained vacancies in sworn staffing positions, fluctuating from only nine at the end of FY 2015 to a high of 27 at the end of FY 2018 (Figure 9). According to BPD, patrol teams often do not meet the minimum staffing on a day-to-day basis without overtime due to vacancies and absences related to anticipated leave (e.g., vacation or family leave) or unanticipated leave (e.g., injury, training, sick leave). We found that in FY 2020, sworn officers applied overtime to backfill absences for 353 days, or 97 percent, of the entire year.

Figure 9. Sworn Officer Positions Across BPD's Divisions Have Continuously Been Underfilled Since 2015

Note: This chart is based on year end actuals. We did not do an analysis of sworn vacancies prior to 2015 to see if this is a normal trend or a 5-year anomaly.

Source: Employment and vacancy data from the Berkeley Human Resources Department

According to BPD, the list of full-time patrol officers in the Patrol Unit's timesheets have declined since 2016, when BPD updated current patrol minimum staffing levels (see Appendix IV for a sample timesheet). The number of patrol officers listed on timesheets has approached the minimum of 60 staff; for instance, in the timesheet spanning September 2021 to March 2022, six out of seven patrol teams had just one officer above the minimum. In October 2021, BPD reported that their sworn staffing levels fluctuate at or just below 157 filled sworn positions after the City deferred 23 sworn positions in BPD as a cost saving measure in response to the COVID-19 pandemic. As of this writing, the City continues to hold those sworn positions vacant.

It is important to note that the number of filled positions is not the same as the number of officers available to work. For example, new hires, although counted as a filled position, are not available for solo officer duties for nearly a year. Of the 157 sworn positions filled, seven of those positions are being held by individuals in academy bringing the number of fully-fledged officers down to 150. It is also not uncommon to have officers out on leave due to illness, injury, family leave, or military leave.

According to BPD, staffing shortages impact all police operations. In response to sustained sworn vacancies in 2020, BPD suspended the Special Investigations Bureau and bike patrol assignments, and reduced the number of Traffic enforcement officers. Absences impact other divisions, as off-duty sworn officers in other BPD divisions conduct overtime patrol when not enough off-duty patrol officers are available. Additionally, BPD has instituted mandatory overtime during periods in which not enough staff volunteer for overtime. All of these factors, among others, contribute to burnout and staff turnover, which reinforces BPD's use of overtime to backfill vacancies. Staffing is only slated to decline, as there are 15 current sworn employees eligible to retire during the writing of this audit.

More work can be done to better understand how recruitment and retention of sworn officers impact overtime. There are other facets of staffing that deserve further attention to understand BPD's reliance on overtime, including the overall budgeted staffing positions, staff workload, the deployment of officers, and the use of leaves of absence.

Compensatory time may decrease policing capacity and increase costs

When BPD officers work overtime, generally they can choose to either be paid for the overtime hours or they can earn additional paid time off (compensatory time) to be used at a later date. According to BPD, officers cannot earn compensatory for overtime that is reimbursable (i.e., work for outside entities and grants). In FY 2020, sworn officers accumulated a total of 8,319 hours of compensatory time, which accounts for approximately 831 10-hour shifts, or a full year of work (2080 hours) for 4 full time employees.

When an officer elects to receive compensatory time in lieu of overtime pay, that may decrease the policing resources available because every hour worked must be repaid by the department at time and a half—time taken away from other activities. Compensatory time comes out of existing capacity. In addition, earned compensatory time may imply additional costs to staffing because it is associated with an officer's absence in the future that may need to be filled with overtime. Because earned compensatory time does not come out of existing budgetary allocations, BPD does not monitor its use as systematically as they do paid overtime.

Compensatory time is not costless, and has the potential to cause a chain reaction of more backfill and more compensatory time. For example, if a patrol officer works 10 hours of overtime, they could choose to earn 15 hours of compensatory time for that work, or they could choose to be compensated for their overtime work at time-and-a-half pay. When that officer takes those 15 hours of compensatory leave, another officer must work overtime to fill the vacancy. The officer might backfill in exchange for 22.5 hours of compensatory time. That 22.5 hours of leave might then be backfilled for 33.75 hours, and so on. Additionally, unused compensatory time is paid out when an officer leaves the City. BPD does have a policy limiting sworn officers' accumulation of compensatory time to 120 hours, which should limit the amount of unfunded liability that comes with accumulated compensatory time and the potential chain reaction of backfilling and compensatory time. Our audit did not determine whether this policy is being enforced.

Staffing analytics tools and processes can factor in the costs of compensatory time, including projected salary increases and the impacts of compensatory time on future staffing. Monitoring compensatory time usage would allow supervisors to see if backfill increases over time.

According to the Berkeley Police Association Memorandum of Understanding, compensatory time off may be earned in lieu of overtime pay at the rate of one and one-half hours for each hour worked beyond 40 hours. Officers can accumulate up to a maximum of 120 compensatory hours. Upon termination of employment, the City must pay out the full amount of compensation for accumulated but unused compensatory time. Whether compensatory time is earned or overtime is paid is up to the discretion of the Police Chief. (BPA MOU sections 19.4 and 19.1.1.2)

Recommendations

To manage costs associated with compensatory time and the impact of vacancies on overtime, we recommend Berkeley Police Department:

1.1 Collect and monitor data on how often compensatory time leads to additional backfill overtime and develop a plan to monitor it.

1.2 Fill vacancies deemed necessary and/or reallocate staff pending the reimagining process and a determination of appropriate staffing levels.

Minimum staffing levels in BPD's Patrol Unit could cause unnecessary overtime if not regularly updated.

In 2016, BPD updated minimum staffing levels in the Patrol Unit to meet service demands and ensure officer safety; however, it is difficult to know whether these levels continue to reflect the City and the department's needs. Additionally, patrol minimum staffing levels are based on what BPD is responsible for responding to, which is subject to the reimagining process. BPD does not have a process to regularly assess the efficacy of minimum staffing levels in their Patrol Unit. Without regularly reassessing minimum staffing levels, BPD cannot ensure that staffing reflects the changing nature of the department and community needs and expectations.

It is unclear whether minimum staffing reflects the current needs of the City and BPD.

Minimum staffing levels can be informed by a variety of factors. The Patrol Unit's minimum staffing is informed by a study of police beats by Matrix Consulting Group that was commissioned by the City in 2014.[5] The study considered factors including community and town hall meetings, population, geography, officer workload, calls for service, response time (including proactive patrol time), and industry standards/best practices. As a result of the study, BPD transitioned to the current 16-beat structure in 2016 and assigned minimum staffing accordingly (Figure 7).

[5] Police Patrol Beat Evaluation Study, City Of Berkeley, Final Report: https://www.cityofberkeley.info/uploadedFiles/Police/Level_3_-_General/Berkeley%20Beat%20Structure%20Final%20Report%208-20-14(1).pdf

In recent years, BPD officers have encountered situations requiring increased collaboration across City departments, such as homelessness and mental health. BPD has taken measures to adapt to these needs, whether by revamping the Bike Unit, collaborating with Berkeley Mental Health, or fielding homeless-related inquiries through the Community Services Bureau. Following a request from City Council as part of the reimagining process, we initiated an audit of calls for service and proposed recommendations on how BPD can better track calls for service related to mental health and homelessness.[6] The City is currently working with the Reimagining Public Safety Task Force and consultants to identify areas of police work that can be achieved through alternative approaches.

As of the writing of this report, BPD's Patrol Unit continues to adhere to the same staffing model from 2016, and minimum staffing remains unchanged. Currently, it is difficult to know whether the Patrol Unit's staffing model aligns with the evolving needs of the community and the department's adaptation. Without a regular assessment of their staffing levels, BPD cannot determine the extent to which operational changes exceed their staffing capacity. Given limited capacity and a lack of staffing software in the Department, it is difficult for BPD to quantify the extent to which patrol teams struggle to meet minimum staffing. More work can be done to quantify how often BPD falls below minimum staffing.

BPD does not regularly assess the efficacy of their minimum staffing model.

While minimum staffing is intended to meet the needs of the community, it should not stretch officers too thin nor lead to an excessive number of officers on duty. According to a best practice review by San Francisco's Budget and Legislative Analyst Office, effective minimum staffing is grounded in an up-to-date assessment of community needs and staffing levels which often evolve over time.[7] It is important that departments regularly assess that their model is dynamic, appropriately addresses community needs, and accounts for staffing realities.

6 Data Analysis of the City of Berkeley's Police Response: https://www.cityofberkeley.info/uploadedFiles/Auditor/Level_3_-_General/Data%20Analysis%20of%20the%20City%20of%20Berkeley's%20Police%20Response.pdf

7 Best Practices Related to Police Staffing and Funding Levels: https://sfbos.org/sites/default/files/FileCenter/Documents/54867-012616%20Police%20Staffing%20Methodology.pdf

According to BPD, command staff routinely assess staff capacity in order to meet patrol minimum staffing levels. However, BPD does not regularly assess the Patrol Unit's staffing model in response to changing community needs. While minimum staffing is an important determinant of overtime, the patrol minimum staffing levels are not documented by BPD. There is no explicit reference to minimum staffing in BPD's list of policies, nor are they stated in BPD's publicly accessible list of patrol beats and officers. While an appendix in BPA's 2017-2020 MOU refers to minimum staffing, the document refers to BPD's outdated 18 beat structure.

It is unclear whether the Patrol Unit's minimum staffing is sufficient, and BPD does not use a standard to quantify or regularly assess the adequacy of staffing. Command staff rely on informal precedent, professional judgement, and feedback from officers to determine if staffing levels are adequate. According to BPD, command staff especially consider safety and officer engagement as factors for considering staffing adequacy.

In their 2021 annual crime report, BPD reported that low staffing has impacted the Patrol Unit's ability to proactively address and solve problems in the community. BPD identifies four main metrics to consider when determining patrol staffing and allocation: service levels, staffing levels, response time, and patrol time. These metrics are related and when one is impacted there are likely impacts to others. According to BPD, when they are fully staffed they are able to provide full service, reliable response times, proactive preventative patrol presence, and community engagement.

An effective staffing model includes regular assessments that are built into the department's internal operations. Using staffing software, BPD can draw insights from small, regular reports rather than extensive staffing assessments conducted by a third party. Codifying this process into a procedure or policy helps the department proactively respond to staffing needs and promotes transparency. Additionally, internal reports can serve as tools to communicate the department's capacity to decisionmakers and the public, align expectations with the community, and promote knowledge transfer between command staff and leadership.

Recommendations

To ensure staffing levels are transparent, appropriate, and can be adapted to the current needs of the community, we recommend Berkeley Police Department (BPD):

2.1 Establish a procedure to regularly assess minimum staffing and overall staffing needs of the department. This process should document and incorporate criteria to assess staffing levels, such as calls for service, other workload, community input, and other relevant factors. As BPD prepares for the rollout of a new software system, BPD should consider how to best align the program's capabilities with this assessment process.

To increase transparency to decision makers and the public, we recommend Berkeley Police Department:

2.2 Document and define the Patrol Unit's minimum staffing levels in a publicly assessible format.

2.3 Document the results of staffing assessments along with the assessment criteria. Incorporate results into staffing projections for budgetary decision making, including establishing a sufficient and appropriate overtime budget.

Officers work excessive overtime, increasing health and safety risks.

BPD does not adhere to their overtime policies and controls. In FY 2020, 21 percent of BPD officers exceeded the 44 hour overtime limit at least once. Excessive overtime can lead to fatigue-impaired officers, increasing risks to officers, the City, and the public. They do not have an effective system to enforce their policy and manage overtime. BPD relies on manually prepared paper records for scheduling and tracking regular and overtime hours worked. Without adequate enforcement of policies and tools to manage overtime, BPD cannot fully mitigate risks associated with officer fatigue.

Officers exceed overtime limits set by BPD.

On average, BPD officers worked 13.2 hours of overtime per week during FY 2020, and some worked significantly more. According to BPD, most overtime shifts are filled on a voluntary basis. Some amount of overtime work in policing is necessary and unavoidable, and will occur regardless of the number of officers employed. Officers may need to complete arrests at the end of their shifts, fill in to cover absences, or assist in safely facilitating public events. Police work also inevitably generates court appearances, trainings, and work on holidays (see Figure 8 for details of how BPD used overtime in FY 2020).

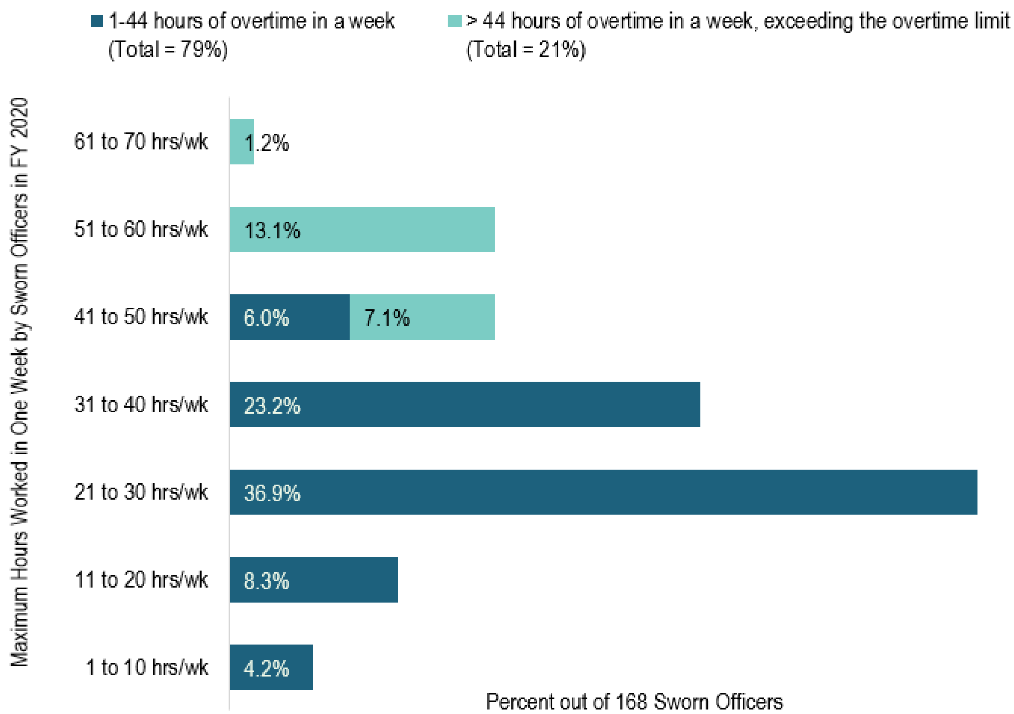
BPD has a policy to regulate overtime by placing limits on the total number of hours that officers can work within specific periods and requires officers have a minimum of eight hours off between shifts. In FY 2020, there were 62 occurrences of officers exceeding BPD's weekly limit of 44 hours of overtime in a week. Twenty-one percent of BPD officers (36 officers) exceeded this limit at least once, however, one officer exceeded the limit 11 times in FY 2020 (Figure 10). Without enforcement and oversight of these limits, BPD's policies may not be sufficient to manage the burnout and fatigue associated with overtime. For instance, an officer who works 44 hours of overtime in one week with recommended levels of sleep will only have 4 daily hours of off-duty time. As officers exceed this limit, they cut into their recovery time and increase their risk of burnout. There were two times when an officer worked more than 60 hours of overtime in a week, which is more than 100 total hours worked in a week.

BPD's internal Policy 1015 states that BPD staff should not work more than:

- 16 hours in one day (24 hour) period or
- 30 hours in any 2-day (48 hour) period or
- 84 hours in any 7-day (168 hour) period

Additionally, the policy recommends a minimum of 8 hours between shifts except in very limited circumstances. These limitations apply to overtime. Supervisors should consider reasonable rest periods and are authorized to deny overtime or relieve any member who has exceeded the above guidelines. Limitations on the number of hours worked apply to shift changes, shift trades, rotation, holdover, training, general overtime and any other work assignments.

Figure 10. BPD Officers Exceed BPD's Overtime Limit of 44 Hours in a Week in FY 2020



Note: The chart represents a total of 168 sworn officers. It does not include Captains, the Police Chief, Reserve Officers, and Retired Annuitants as they do not receive overtime pay. In addition, it excludes 1 officer who worked only one shift in FY 2020.

Source: BPD Payroll Data

Additionally, we found that more officers are working longer stretches without days off. In FY 2019, nearly half of sworn officers worked a week or more with no days off at least once, and one officer worked 47 consecutive days in a row. By FY 2020, 85 percent of officers worked a week or more with no days off at least once. BPD does not have a policy limiting the number of consecutive days officers can work. The department policy requires officers to take eight hours of rest between shifts, except in very limited circumstances, however, due to the manual nature of BPD's staffing and time tracking we were unable to confirm that this policy is enforced.

Long work hours and fatigue can negatively impact officer safety, health, and performance.

While we did not perform specific analysis of the impact of overtime on BPD officers, excessive overtime can lead to fatigue-impaired officers, increasing risks to officers, the City, and the public. Police are required to be alert and use good judgment in order to respond appropriately to emergency calls. They must be able to make split second decisions and act on them with limited time and information in situations where there may be an element of danger. They are not only responsible for the safety of the public but also for other responding public safety officials (police, firefighters, paramedics). Overtime, when used in excess, can inhibit these essential skills and increase the safety risk to the public and other personnel.

Working more hours can increase fatigue, which has been found to increase injuries and accidents. Studies have found that fatigue negatively affects both police and the communities they serve.[8] Fatigue increases the risk of accidents and other safety incidents, such as decreasing officer alertness, impairing decision-making ability, and slowing down reaction time. According to research, impairment after 20 hours of wakefulness equals that of an individual with a blood-alcohol concentration of 0.10. Fatigue also harms work performance by weakening memory, lowering frustration tolerance, and increasing stress and burnout. Finally, fatigue can have long-term health implications for officers, increasing blood pressure, hypertension, metabolic syndrome, and obesity.

We did not do an analysis of these impacts on BPD specifically as that would have required more resources than this report covered.

[8] Vila et al., 2002: Improving shift schedule and work-hour policies and practices to increase police officer performance, health, and safety; and Lindsey, D., 2007: Police fatigue: An accident waiting to happen

BPD does not effectively track officer hours to enforce overtime limits.

Limits on overtime rely on effective monitoring and enforcement from supervisors. BPD's overtime policy without enforcement does not control for excessive overtime. The monitoring and enforcement for these limits lies with supervisors, as Policy 1015 states, "Supervisors should give consideration to reasonable rest periods and are authorized to deny overtime or relieve to off-duty status any member who has exceeded the above guidelines." BPD relies on manually prepared paper records for scheduling and tracking hours worked. Regular shifts and overtime hours are tracked on separate forms, with each overtime shift requiring a new form (Appendix III).

When tracing a sample of instances where officers exceeded overtime limits to paper overtime forms, there was no indication that supervisors were aware that these officers exceeded the overtime limits or why they were allowed to do so. There are legitimate reasons why supervisors might approve officers to exceed these limits, and the policy states that limitation of hours worked should be enforced absent emergency operations. We were unable to verify that any of these instances of exceeding the overtime limits were to staff for emergency operations.

Additionally, signing up for voluntary patrol overtime shifts are manual and first come, first serve. Supervisors post open overtime shifts on a corkboard in a central location in the public safety building. Officers manually write their badge number on an open shift to claim the overtime. This system does not necessarily block or limit officers from signing up for multiple spots. According to BPD, officers are not required to seek approval from their supervisor, unless officers think it may impact or overlap their regular job duties.

Figure 11. Sign-ups for Patrol Overtime Shifts Are Manual and First Come, First Serve

Source: Berkeley Police Department

As a result of BPD's manual processes, supervisors likely do not know how many hours an officer has worked leading up to a shift. This means that supervisors may select an officer for a new overtime shift who has already worked more than the supervisor thinks is safe.

Tracking all hours of work in one place is important because it can help supervisors ensure that officers are working safe amounts of hours, within the department's limits, and that extra-duty overtime does not affect their regular duty assignments. One study by the Department of Justice states that overtime can be successfully managed through a combination of analysis, recordkeeping, management, and supervision.[9] Without staffing software and digitized timekeeping, BPD policies and management may not be sufficient to manage the burnout and fatigue associated with overtime.

[9] National Institute of Justice, Police Overtime: An Examination of Key Issues: https://www.ojp.gov/pdffiles/167572.pdf

Recommendations

To mitigate the risks associated with excessive overtime and officer fatigue, we recommend Berkeley Police Department:

3.1 Update the department overtime policy to address the fact that there currently is no limit to the number of consecutive days worked and determine the appropriate limit for overtime that is enforceable with the goal of avoiding officer fatigue. The department may examine other jurisdictions' overtime limits as possible criteria.

To ensure efficient and effective management of staffing and overtime, we recommend Berkeley Police Department:

3.2 Work to implement a staffing software solution that integrates overtime management and scheduling software. Develop management reports that provide timely, accurate, and complete information on overtime usage. Develop a process for filling overtime shifts on a voluntary and mandatory basis, including supervisor approval. Build in warnings for when an individual is approaching overtime limits and an approval process for allowing individuals to exceed limits when deemed necessary according to the policy.

BPD has no contracts for overtime security with outside entities.

The hours BPD officers spent conducting extra-duty, overtime security work for both public and private entities (work for outside entities) more than tripled in FY 2020. Personnel costs for providing security to outside entities also tripled from $160,000 in FY 2019 to almost $500,000 in FY 2020, amounting to 10 percent of all of BPD's overtime personnel costs. BPD does not have written policies that define and govern this work. In addition, BPD does not have contracts with outside entities, which unnecessarily increases the City's risks and liabilities. BPD's process for tracking costs associated with work for outside entities is insufficient and we are unable to determine if the City is being reimbursed appropriately. Without documented policies and processes for establishing work for outside entity agreements, BPD cannot ensure their services are equitable and transparent.

Officers' overtime work for outside entities more than tripled in FY 2020.

The overtime hours BPD officers spent working for outside entities more than tripled in FY 2020, representing nine percent of all sworn overtime hours previously shown in Figure 8. The hours BPD officers work for outside entities contribute to the total strain overtime places on the department and individual officers. Outside entities are public and private organizations such as local businesses, schools, or private event organizers that request police services ranging from security, crowd and traffic management, to neighborhood patrol. Officers provide security in their capacity as BPD sworn officers and BPD pays them at the overtime rate, while outside entities submit reimbursements to the City. Officers worked with six major employers in FY 2020, and more than half (53 percent) of the overtime hours worked were for the Apple store (Figure 12). During this period, the 2,952 hours associated with the Apple store encompassed the equivalent of one full-time staff hours for an entire year.

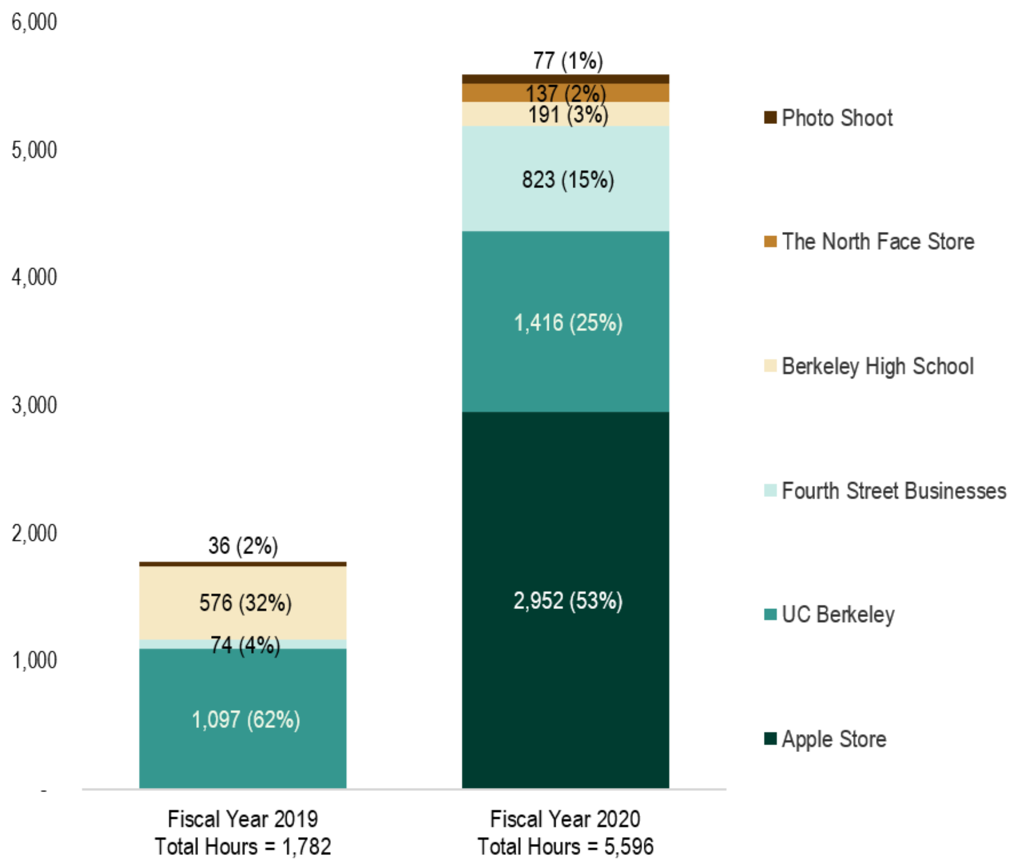
A range of outside entities have requested BPD's services, including but not limited to:

Retailers. BPD has provided dedicated security services to retail stores including the Apple Store, Lululemon, and North Face. BPD also provides patrol and security for a merchant's association representing businesses on Fourth Street.

Schools and universities. BPD provides services to local educational institutions including UC Berkeley and Berkeley High School (BHS). According to BPD, services to UC Berkeley are often for football games. BPD's agreement with BHS supports the cost for overtime incurred by the full time School Resource Officer or any other officer that works in an overtime capacity for BHS.

One-time events for private companies. BPD also provides services to companies for one-time events. For instance, BPD has provided security during movie filming, security for moves between commercial or private residences, and crowd management for demonstrations against installations of AT&T private equipment.

Figure 12. BPD More than Tripled the Hours Spent Working Overtime for Outside Entities in FY 2020



Note: Fourth Street businesses includes holiday patrol.

Source: BPD Payroll Data

The employment of public officers for private security work, whether at an individual or department level, is not unique to BPD. Both the Davis Police Department[10] and San Jose Police Department[11] have procedures that enable sworn officers to provide private security overtime.

[10] Davis Police Department, Extra-Duty and Off-Duty Employment Policy: https://www.cityofdavis.org/home/showpublisheddocument/13243/636951554881270000

[11] San Jose Police Department, Instructions for Secondary Employment: https://www.sjpd.org/home/showpublisheddocument/350/637469312631370000

According to an Illinois Law Review study, outside entities are sometimes willing to pay the costs of hiring officers due to their capacity as sworn officers, including the ability to detain, search, arrest, and use force on suspects.[12] In August 2019, the San Francisco Chronicle surveyed security businesses, retailers, and police officers to explore the growth in San Francisco police as private paid security, known as the 10-B program.[13] They found that outside entities rely on the visibility of a uniformed officer in a patrol vehicle to deter unwanted theft. Additionally, outside entities benefit from officers' broader connection and communications to local law enforcement agencies. Our audit did not investigate the complex reasons for the growth in requests.

The BPD has no procedures or written agreements for working overtime with outside entities.

BPD does not have policies nor criteria that govern the approval and administration of department agreements for work for outside entities. We also did not find evidence of contracts or written agreements between BPD and outside entities on these overtime arrangements. Without written contracts or agreements regarding the role or authority of a private company, BPD and the City of Berkeley may bear the cost of potential hazards that surface from work for outside entities. Updated policies and procedures are essential for the proper transparency and accountability of government resources and for achieving efficient and effective program results.

[12] Stoughton, Seth W., Moonlighting: The Private Employment of Off-Duty Officers (August 26, 2016). 2017 U. Ill. L. Rev. 1848 (2017), Available at SSRN: https://ssrn.com/abstract=2830652 or http://dx.doi.org/10.2139/ssrn.2830652

[13] San Francisco Chronicle, Businesses hiring real SF cops on OT to keep crime down, employees safe; https://www.sfchronicle.com/bayarea/philmatier/article/Businesses-hiring-real-SF-cops-on-OT-to-keep-14365181.php

In 2020, sworn officers in every BPD division provided security for outside entities, amounting to 50 percent of all sworn staff eligible for overtime on BPD's payroll. Unlike self-employment or employment by others, work for outside entities is executed by the department and paid for by reimbursements to the City from outside entities. Nevertheless, the City and BPD's policies on outside employment (A.R. 2.10 and Policy 1020, respectively) do not define nor address reimbursed work for outside entities pursuant to an agreement between the department and those entities. Unlike BPD, Davis Police Department has policies guiding their contracted security work for outside entities. Davis' policies in their arrangements with outside entities include liability and worker's compensation, application protocols, account management, time of payment, and selection of officers.

Figure 13. Apple Accounted for the Majority of BPD's Work for Outside Entities

Source: Berkeley City Auditor

It is City practice in other areas to enter into contracts and/or execute agreements when providing or obtaining services from outside entities. For example, the City has an administrative regulation that establishes a framework for approvals, contract execution, financial recording, and billing of grants and any other agreements such as reimbursement contracts, cooperative agreements, Memorandums of Understanding, or other participation agreements that provide an award of financial assistance to support a City program or project. Adopting similar processes for work for outside entities would improve transparency and decrease risk and liability to the City.

A lack of written agreements and policies, together with the increase in BPD's work for outside entities, introduce unnecessary risks and liabilities across a variety of areas. We identified the following potential risks, among others:

Liabilities. Without an indemnity agreement to clarify the role and authority of outside entities, BPD and the City of Berkeley may open itself up to additional liability. A lack of agreements also creates ambiguity as to the responsibility of an officer working on behalf of an outside entity. While working for outside entities, officers are assigned to provide security for that entity. They do not respond to calls or perform other general police functions, yet they maintain police powers and can exercise those powers while working on behalf of the outside entity. There may also be misperception on the part of the public, the officer, or the private entity as to the scope of duties and role of the outside entity and relationship with the officer.

Conflict of interest. A lack of priorities or criteria informing BPD's approval of contracts introduces the risk of working arrangements with a conflict of interest or divergence from City values. Without criteria, there are no formal measures against working for businesses with a history of criminal activity, or businesses involved in legal proceedings against the City.

Administrative Gaps. Without formalized procedures, BPD risks executing important administrative steps partially and inconsistently, or missing some steps altogether. A formal application provides opportunities to collect information about services needed, review and approve contracts in a uniform manner, ensure alignment with the municipal code and BPD's stated values, and establish expectations with prospective outside entities.

No limits to hours working for outside entities. It is difficult for officers and supervisors to monitor hours spent working for outside entities without overarching guidelines or limits regarding officer's assignments. According to BPD, the Patrol Unit prioritizes other forms of overtime above work for outside entities.

Fewer data to manage the workload. Without methods to track the number of requests, approvals, and contracts for working with outside entities, BPD is unable to understand trends over time and proactively manage their workload accordingly. Tracking data on outside entity requests, along with project codes in BPD's payroll data, would provide opportunities to inform beats and staff assignments in the future.

BPD does not effectively track costs of overtime security and it is unclear if the City is charging outside entities appropriately.

BPD's personnel costs of working for outside entities tripled from $160,000 in FY 2019 to almost $500,000 in FY 2020, amounting to 10 percent of all of BPD's overtime personnel costs. Under BPD's current process for tracking costs associated with work for outside entities, we cannot determine if the City is recovering the full cost for their services to outside entities.

According to BPD, they charge outside entities only for the payroll costs incurred by the officer's work for outside entities, including benefits that are paid for overtime. The City does not recover costs associated with the use of City vehicles nor the administration of these agreements including planning, staffing, and invoicing. We also found BPD charges the businesses on Fourth street a flat fee of $5,000 during the winter holidays, even if the cost of services exceeds this amount. This arrangement pre-dates the current Fiscal Management staff, and it is unclear when or why it was established. We cannot know the full excess costs of flat fee arrangements as BPD does not identify them in their billing documents.

Without clearly understanding invoices and revenue, BPD cannot reconcile costs with their reimbursements. As a result, BPD may continually underbill for their services and not recover the full costs of officer overtime. On the other hand, BPD may overbill outside entities, which can influence perceptions about working with the City. It is difficult to track the appropriateness of reimbursements for several reasons:

BPD cannot separate out revenue. Checks are deposited into a general revenue account along with other revenues. As such the City cannot separate out specific revenues tied to work for outside entities.

Manual process subject to error. Data entry errors may surface as the payroll clerk manually calculates the hours worked by each individual plus the benefitted amount, as well as invoice amounts in the system. It is possible that hours do not get added to payroll, or that they get added to the wrong project code.

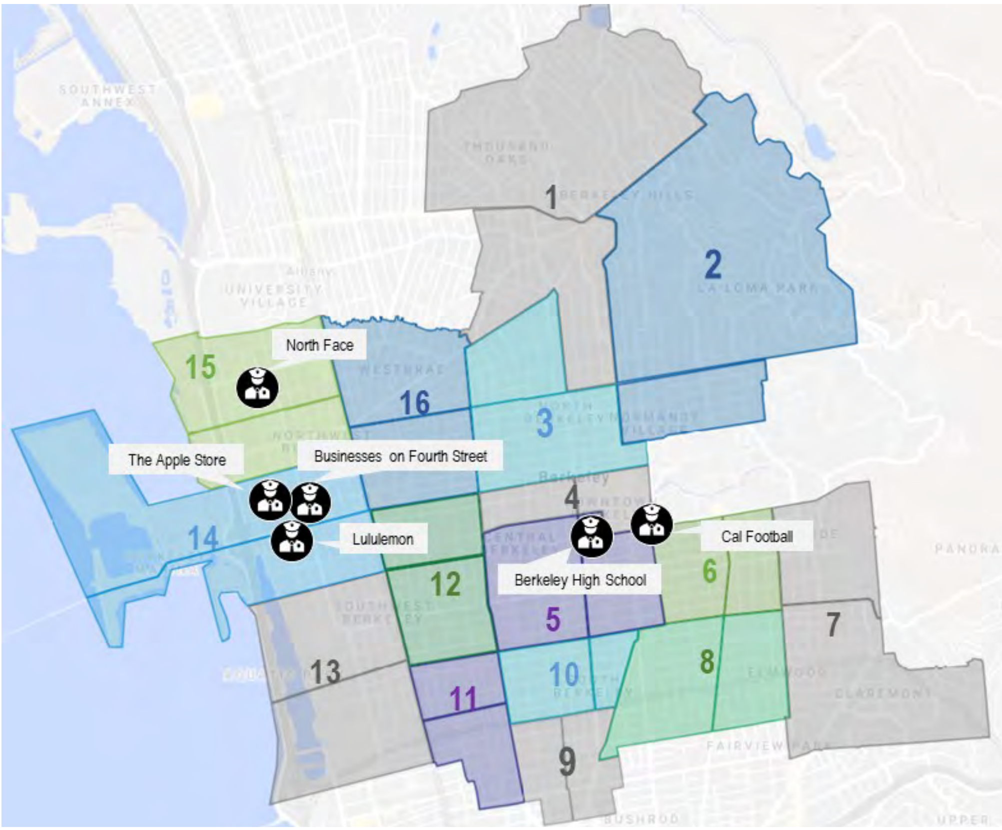
BPD's billing can have errors. BPD follows a billing procedure that exists outside of the City's accounts receivable system using spreadsheets. The department does not have quality controls to review the spreadsheets for accuracy, and the growth in requests for outside entities is outgrowing BPD's capacity to closely monitor a growing number of the invoices to outside entities.

Additionally, revenues from outside party reimbursements are not fully credited back to BPD. Reimbursements from outside entities are deposited into the City's General Fund, and BPD's expenditures for overtime work with outside entities can exceed the City's budgeted amount. According to BPD's Fiscal Services Manager, the budgeted expenditures for work with outside entities have remained fixed at $150,000 for over a decade, despite the growth of personnel expenditures to $498,685 in FY 2020. Reimbursements for overtime work with outside entities do not replenish the overtime fund from which BPD officers were paid, and are not guaranteed to be allocated to BPD.

Without policies and documentation, BPD cannot ensure transparent and equitable services.

BPD leadership should know how to best deploy its officer resources, but work for outside entities as it is currently operating may undermine that judgment. The breadth and prevalence of work for outside entities in FY 2020 has essentially privatized a portion of officer overtime, and without policies to manage this growth, BPD may encounter unforeseen impacts related to equity and transparency of their services for businesses and residents alike. Occasionally, multiple officers will provide services simultaneously for companies located in the same beat alongside the regular beat officer; this is especially true for security for various companies on Fourth street (Figure 13). BPD does not have agreements or written procedures to prevent policing from skewing toward one specific contract or type of entity at the expense of other businesses or neighborhoods with higher service and crime response.

Figure 14. Work for Outside Entities in FY 2020 by Police Beats



Source: BPD Beats Map on the Open Data Portal and Berkeley Police Department

The lack of documentation surrounding outside entities also raises concerns around transparency and equity. As discussed previously, BPD historically provided a flat fee of $5,000 to the businesses on Fourth Street, and expenditures were higher than this fee. Without procedures, BPD may continue to use inconsistent flat fee arrangements leading the City to inadvertently charge one company less than another without criteria as to why. In addition, certain companies have dedicated contractors that coordinate their security. For instance, the firm Security Industry Specialists Inc. (SIS) handles Apple's agreements with BPD, while smaller businesses may benefit from BPD security but lack these resources to acquire BPD's services. Larger-income businesses can afford the additional protection afforded by sworn officers, while smaller businesses may be unable to benefit from City-sponsored security. Further, there is potential for bias or perception of bias if police working as private security encounter a dispute between an member of the public and the private entity. An officer that is providing security for a private entity may not be viewed as objective in resolving a conflict between that private entity and a member of the public. This risk is heightened by lack of regulation, documentation, and public communication.

While any community that wants security has a right to pay for it, it raises questions of equity of access when that extra security is provided by City-employed officers. BPD can improve equity if every business is able to access information about these services, and they provided a transparent application process for community members interested in obtaining these services. This brings up questions and considerations around BPD's overall scope of work for outside entities given BPD's staffing gaps, high levels of overtime, potential perceptions of bias, and the risks detailed above.

Transparency is especially important in the case of police work. Unlike most public officials—who may also be employed by outside entities—police officers retain their public authority in their capacity as sworn officers on behalf of outside entities. Since work as BPD officers is an extension of work for the City, relevant information about their work with private entities should be available internally to the City and/or the public. This practice is worthy of public discussion and evaluation.

Recommendations

To ensure work with outside entities is in full compliance with relevant laws and policies, and to increase transparency and reduce liabilities, we recommend Berkeley Police Department (BPD):

4.1 Update A.R. 2.10 and other department policies to explicitly include guidance around department agreements for work for outside entities, which is paid for by reimbursements to the City from the outside entities. Internal procedures should include appropriate criteria to identify and document the benefit to the City gained by work for outside entity agreements, and to allocate resources in a way that does not negatively impact City operations. Additionally, BPD should document their criteria for when officers are not available or eligible for work for outside entities.

4.2 In consultation with the City Attorney, create contracts with outside entities in compliance with City policies and applicable laws.

4.3 Develop an application for BPD's services that is publicly available and accessible online to any interested party. Set pay uniformly according to rank and hourly rate and include a reasonable fee that covers the expenses of administering work for outside entities including workers compensation, fuel, use of equipment, and any other actual or potential costs to the City.

To ensure the City is being appropriately reimbursed for policing services contracted out to outside entities or any other agreements (i.e., special events), we recommend Berkeley Police Department:

4.4 Reconcile invoices with the amounts received for work with outside entities at regular intervals. BPD should also implement procedures to check invoices for errors prior to billing outside entities.

4.5 Explore ways to clearly account for different funds to track revenues and expenses.

Recommendations and Management Response

We provided a draft of this report to City Management and BPD for review and comment. City Management agreed to our findings, conclusions, and recommendations. Below is the BPD's initial corrective action plan and proposed implementation date. We find their plan to address our audit recommendations reasonable. As part of the follow-up process, the Berkeley City Auditor will be actively engaged with the Police Department every six months to assess the progress they are making towards complete implementation. The department will submit a council item every 6 months with an update on the progress of their recommendations.

1.1 Collect and monitor data on how often compensatory time leads to additional backfill overtime and develop a plan to monitor it.

Management Response: Agree.

Proposed Implementation Plan: BPD is currently working to implement an electronic staffing solution. The Department will assess the ability to monitor and track this information in electronic staffing in order to understand the expense and impacts of compensatory time. BPD will explore the possibility of developing a report through existing payroll and finance programs to understand the impact of compensatory time usage and practices.

Proposed Implementation Date: Estimated completion within 18 months from date of audit response.

1.2 Fill vacancies deemed necessary and/or reallocate staff pending the reimagining process and a determination of appropriate staffing levels.

Management Response: Agree.

Proposed Implementation Plan: BPD understands the impact that reduced staffing has on overtime costs and always strives to fill vacancies and operate within our budget. Challenges in retention of existing officers, difficulty hiring new officers and many imminent retirements make it difficult to apply a timeline on implementation of this recommendation. Recruitment efforts, prioritization of hiring and related processes and budget authority to hire will be instrumental to the department's success.

Proposed Implementation Date: Ongoing.

2.1 Establish a procedure to regularly assess minimum staffing and overall staffing needs of the department. This process should document and incorporate criteria to assess staffing levels, such as calls for service, other workload, community input, and other relevant factors. As BPD prepares for the rollout of a new software system, BPD should consider how to best align the program's capabilities with this assessment process.

Management Response: BPD agrees with this recommendation in that regular assessments assist the department with the best allocation and deployment of resources. Our staffing needs may fluctuate as priorities change, but our responsibility to meet public safety demands is always paramount.

Proposed Implementation Plan: Internal evaluations will be completed annually to address constantly changing conditions, call volume, crime data and other external factors. The reimagining public safety efforts may also necessitate changing focus and deployment strategies. BPD will explore engaging outside consultants every ten years to evaluate patrol staffing levels so as to have a useful body of data for evaluation (for example; tying staffing evaluations to census reports).

Proposed Implementation Date: Estimated completion within 18-24 months from date of audit response.

2.2 Document and define the Patrol Unit's minimum staffing levels in a publicly assessible format.

Management Response: Agree.

Proposed Implementation Plan: BPD will update the department webpage to include information on beat structure, teams, and deployment. This will also include current beat officer assignment.

Proposed Implementation Date: Estimated completion within 6 months from date of audit response.

2.3 Document the results of staffing assessments along with the assessment criteria. Incorporate results into staffing projections for budgetary decision making, including establishing a sufficient and appropriate overtime budget.

Management Response: Agree. Our staffing needs may fluctuate as priorities change, but our responsibility to meet public safety demands is always paramount.

Proposed Implementation Plan: Internal evaluations will be completed annually to address constantly changing conditions, call volume, crime data and other external factors. BPD will explore engaging outside consultants every ten years to also evaluate this item.

Proposed Implementation Date: Estimated completion within 18-24 months from date of audit response though this is subject to change as it is part of the overall budget process.

3.1 Update the department overtime policy to address the fact that there currently is no limit to the number of consecutive days worked and determine the appropriate limit for overtime that is enforceable with the goal of avoiding officer fatigue. The department may examine other jurisdictions' overtime limits as possible criteria.

Management Response: Agree.

Proposed Implementation Plan: BPD will review existing policy and ensure that any policy updates or clarification are completed. BPD will conduct research to review fatigue mitigation programs and contact other agencies to learn what they are using successfully. A byproduct of reduced staffing can be increased or excessive overtime where minimum staffing levels or public safety needs necessitate police response. The Department will explore options to develop data collection and monitoring within the electronic staffing solution to be able to regularly assess if there is an issue.

Proposed Implementation Date: Estimated completion within 24 months from date of audit response.

3.2 Work to implement a staffing software solution that integrates overtime management and scheduling software. Develop management reports that provide timely, accurate, and complete information on overtime usage. Develop a process for filling overtime shifts on a voluntary and mandatory basis, including supervisor approval. Build in warnings for when an individual is approaching overtime limits and an approval process for allowing individuals to exceed limits when deemed necessary according to the policy.

Management Response: BPD agrees that a staffing software solution could assist with overtime management and scheduling needs.

Proposed Implementation Plan: BPD is already heavily engaged in seeking a software solution. The RFP process is completed, and the vetting process is nearing completion to select the vendor. Following completion of a contract, the steps towards implementation will begin. The Department will have to rely on Information Technology for implementation, consequently timing will depend how this project fits the PD/IT workplan.

Proposed Implementation Date: Estimated completion within 24 months from date of audit response.

4.1

Update A.R. 2.10 and other department policies to explicitly include guidance around department agreements for work for outside entities, which is paid for by reimbursements to the City from the outside entities. Internal procedures should include appropriate criteria to identify and document the benefit to the City gained by work for outside entity agreements, and to allocate resources in a way that does not negatively impact City operations. Additionally, BPD should document their criteria for when officers are not available or eligible for work for outside entities.

Management Response: Agree.

Proposed Implementation Plan: BPD will work with the City Manager's Office to identify necessary adjustments to the CoB A.R.2.10, current BPD practices engaging in reimbursable service contract, and the overall administration of departmental agreements for work with outside entities.

The Department will create a webpage on the Department's website with information explaining the process for requesting services. This would include a point of contact to discuss criteria and evaluation of service requests, including staffing impacts. Also included will be clear language explaining that public safety response will be the highest priority.

Proposed Implementation Date: Estimated completion within 12 months from date of audit response.

4.2

In consultation with the City Attorney, create contracts with outside entities in compliance with City policies and applicable laws.

Management Response: Agree.

Proposed Implementation Plan: BPD will work with the City Manager's Office, and in consultation with the City Attorney, to determine appropriate contract(s) for reimbursable service contracts.

Proposed Implementation Date: Estimated completion within 24 months from date of audit response.

4.3 Develop an application for BPD's services that is publicly available and accessible online to any interested party. Set pay uniformly according to rank and hourly rate and include a reasonable fee that covers the expenses of administering work for outside entities including workers compensation, fuel, use of equipment, and any other actual or potential costs to the City.

Management Response: Agree.

Proposed Implementation Plan: We intend to create a webpage on the Department's website with information explaining the process for requesting services. This would include a point of contact to discuss criteria and evaluation of service requests, including staffing impacts. Also included will be clear language explaining that public safety response will be the highest priority.

Proposed Implementation Date: Estimated completion within 12-18 months from date of audit response.

4.4 BPD should reconcile invoices with the amounts received for work with outside entities at regular intervals. BPD should also implement procedures to check invoices for errors prior to billing outside entities.

Management Response: Agree.

Proposed Implementation Plan: BPD will discuss possible solutions with other city stakeholders, including the Finance Department.

Proposed Implementation Date: Estimated 12 months from date of audit completion.

4.5 Explore ways to clearly account for different funds to track revenues and expenses.

Management Response: Agree.

Proposed Implementation Plan: BPD will discuss possible solutions with other city stakeholders, including other city departments.

Proposed Implementation Date: Estimated 12 months from date of audit completion.

Methodology and Statement of Compliance

Methodology

We audited the Berkeley Police Department's (BPD) budget and operations for fiscal years (FY) 2015 through 2020. We assessed historic funding levels going as far back as FY 1970 when data was available. We performed a risk assessment of BPD's practices and procedures to identify potential internal control weaknesses, including fraud risks, within the context of our audit objectives. This included a review of selected policies and procedures, as well as interviews with subject matter experts and BPD staff.

To gain an understanding of BPD's operations and internal controls and to achieve our audit objectives, we reviewed the following:

- Biennial budget reports, financial reports, and census data summarizing historic trends in BPD's budget and staffing.
- State and federal laws governing police overtime, staffing, and work with outside entities.
- Previous audit recommendations, staffing assessments, and BPD's organization chart informing BPD's departmental structure and practices.
- General orders and protocols detailing BPD's limits on overtime and minimum staffing.
- Existing agreements for BPD's police services including grants, mutual aid, special events, and outside entities.
- Written procedures and common forms used by BPD supervisors to monitor and approve overtime.
- National media on police budgeting and reimagining policing.
- Professional literature on effective management of overtime and staffing in police operations.
- Other audits and police practices in comparison cities related to police budgeting, staffing and overtime.

We also conducted interviews with:

- BPD police officers in the Operations and Support Services departments spanning the ranks of police officer, sergeant, lieutenant, captain, and chief.
- Berkeley Police Association President and Vice President.
- BPD administrative staff including the Administrative and Fiscal Services Manager and the Department's payroll clerks.
- City leadership including the Manager of the Budget Office, the Berkeley City Attorney, and City Councilmembers.
- Peer auditors in the City of San Jose that conducted an audit on police staffing.

We analyzed:

- The City's financial system payroll data for BPD from FY 2019 to FY 2020.
- BPD budget and expenditures for each year from FY 2015 to FY 2021; BPD budgets for FY 1960, 1970, 1980, 1990, 2000, and 2010.
- BPD's record of invoices for work with outside entities.

Data Reliability

We assessed the reliability of payroll data by reviewing it for completeness, appropriateness, and consistency. We determined it is sufficient and reliable for the purposes of our work. The data captures that date of the hours, the staff member, authorized and actual position title, and hour code. We noted a limitation in the data in that the position title associated with individuals is their current title and does not necessarily reflect the title at the time the hours were earned. Additionally, the data does not capture adjustments made to correct labor distributions and project charges. These limitations do not significantly impact our use of the data.

Independence

Payroll Audit is a Division of the City Auditor's Office. Payroll Audit Division performs citywide payroll functions and is a module leader for the payroll/personnel module used to record payroll costs. BPD is solely responsible for identifying the payroll codes applicable to their staff's time reported on timesheets and overtime forms and for providing sufficient documentation to support those hours for payroll processing. Payroll Audit is not responsible for verifying the employee's time or the use of budget codes by the department. Payroll limits its review to ensuring that BPD payroll clerks provide the appropriate and sufficient documentation for the reported time.

To reduce the threat to our independence, we limited our work to exclude areas overseen by our office. We also selected data from closed payroll periods that was in read only status and we traced select data back to source documents to verify that the data is reliable.

We consulted with representatives from the Government Accountability Office to discuss the engagement and the safeguards we put in place. They determined that with the safeguards mentioned above we had reduced the identified threats to our independence to an acceptable level to proceed with the audit.

Statement of Compliance

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix I. BPD Funding Streams

City Funding

General Fund. The General Fund is the chief operating fund in the City. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

Parking Meter Fund. The Parking Meter Fund is one of the City's major enterprise funds. It accounts for the collection of coins from the City's parking meters and for the purchasing, leasing, installing, repairing, maintaining, operating, removing, and policing of the meters.

State Funding

State funding to BPD derives from a combination of grant funding and revenue from state ballot measures.

Alcohol and Beverage Control (ABC) Grant. This program focuses on reducing the number of alcohol related calls for service to BFD and reducing the availability of alcohol to underage persons. It includes a partnership with UC Berkeley to work with student groups in organized events involving alcohol, including "operation trapdoor" to identify students using fake IDs, and conducting patrol on house parties.

State Public Safety Sales Tax Proposition 172. Ballot measure approved in 1993, imposed a state sales tax to be used for local public safety activities. As of FY20-21, it formed 0.25 percent of the total sales tax rate in Alameda County. The state distributes Proposition 172 revenues to each county based on its proportionate share of statewide taxable sales.

Citizens' Option for Public Safety (COPS). The State Controller's Office allocates the Citizens' Option for Public Safety funds to law enforcement agencies according to the relative population for each county and city. In FY 2021, Berkeley was projected to be allocated $186,209 COPS funding. The allocations may be slightly different from the projections made by the State Controller's Office due to rounding.

Asset Forfeiture Fund. Asset forfeiture is the process by which legal ownership of an asset is transferred to BPD. According to the Health and Safety Code Section 11495, the funds received by the law enforcement agencies are deposited into an account maintained by the controller, county auditor, or city treasurer. From there, they are distributed to law enforcement agencies at their request. Sixty-five percent of State asset forfeiture proceeds are distributed to state and/or local law enforcement agencies that participated in the seizure of the assets. Fifteen percent of those funds must be deposited in a special fund maintained by a council made up of local government entities. These funds are restricted to be used for the sole purpose of funding programs designed to combat drug abuse and divert gang activity (Health and Safety Code 11489). In FY 2019, Berkeley PD received $127,629.88 in state asset forfeiture funds from Alameda, Contra Costa, and Solano County. There were no reported state asset forfeiture funds received by Berkeley PD in FY 2020.

Mutual Aid from State Agencies. Mutual aid costs are paid for by the state for instances when the state becomes involved. Otherwise, the cost of mutual aid is the responsibility of each agency participating. Five state agencies have specific responsibilities to support local law enforcement during emergency situations: California Highway Patrol, State Military Department, Department of Justice, Department of Corrections, and the Officer of the California State Police.

Federal Funding

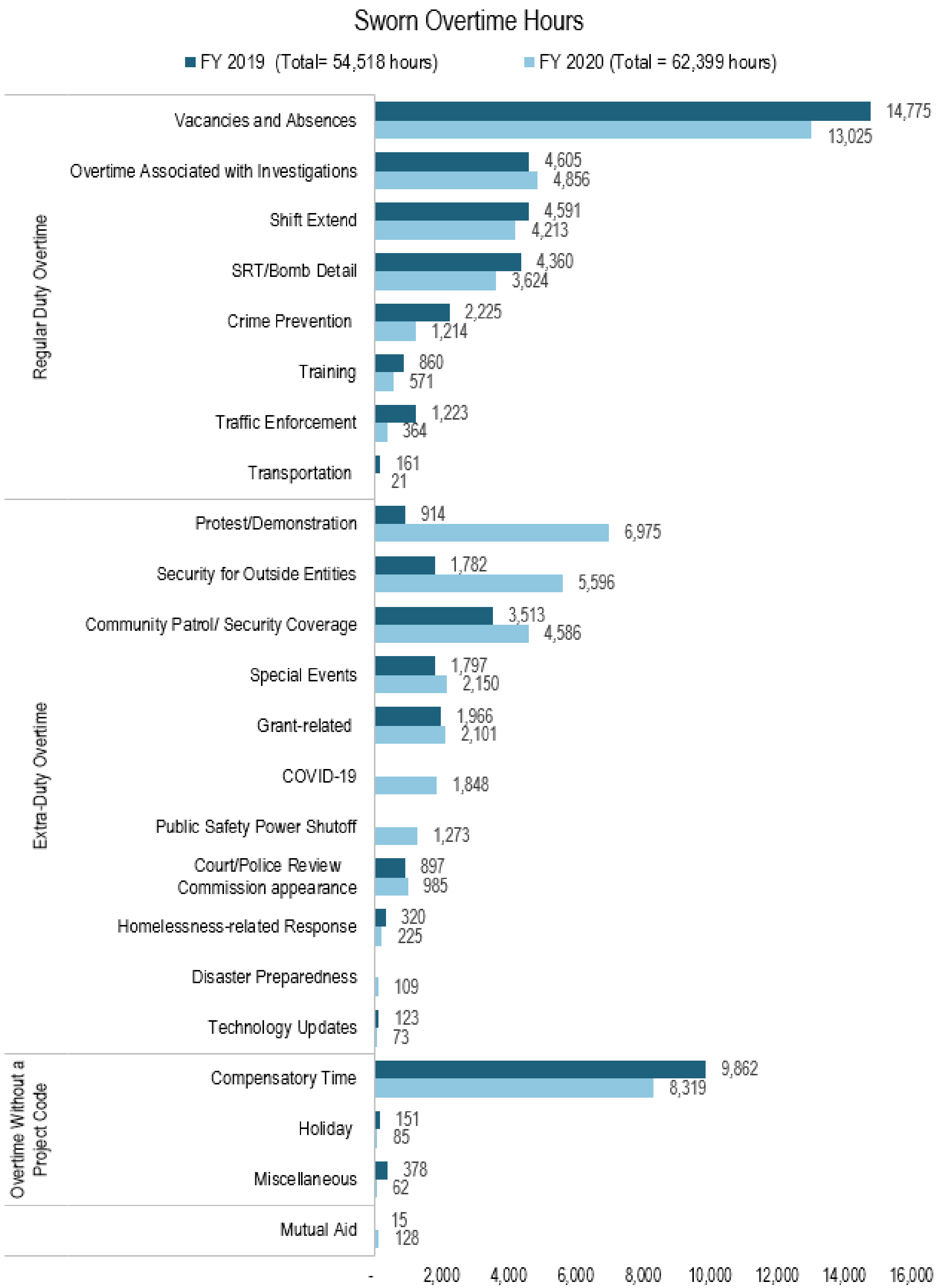
Federal funding for BPD derives exclusively from grants. BPD has received funding from the following grants:

Alameda County Justice Assistance Grant (JAG) Grant. JAG-funded projects address crime by improving the effectiveness and efficiency of criminal justice systems, processes, and procedures. BPD receives funding from the JAG as a member of a consortium with the Alameda County Sheriff's office and other cities of Alameda County. As part of the JAG Consortium, BPD used funds to supplement overtime and benefits for sworn and non-sworn personnel engaged in targeted crime suppression activities.

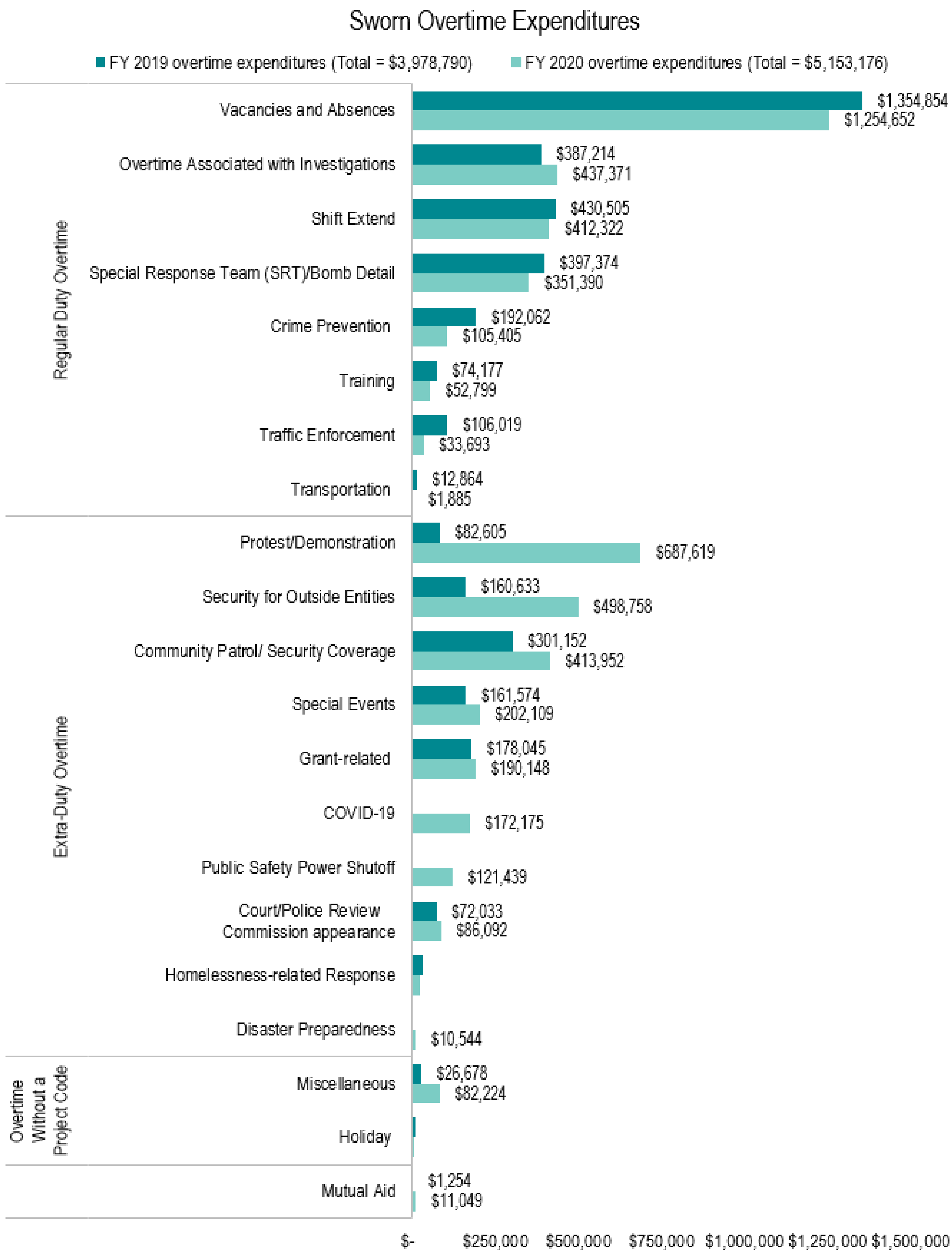
Office of Traffic Safety (OTS) Selective Traffic Enforcement Program (STEP). The goal of the STEP program is to reduce the number of persons killed and injured in traffic crashes using "best practice" strategies. The grant funds strategies related to traffic enforcement including but not limited to: DUI checkpoints, DUI saturation patrols, warrant service operations, stakeout operations, educational presentations, court stings. There is also a media element to enhance deterrence.

Office of Traffic Safety (OTS) Avoid the 21 Campaign. The grant activities target those who drink too much and get behind the wheel. DUI/Driver's License Checkpoints are a key component of the grant, being highly visible, highly publicized events. Officers staff DUI/Driver License Checkpoints, multi-agency DUI Task Force deployments, and local DUI saturation patrols for each partnering agency.

Appendix II. Reasons for Overtime: Hours and Expenditures



Source: BPD Payroll Data



Source: BPD Payroll Data

Appendix III. Extraordinary Duty Form

BERKELEY POLICE DEPARTMENT

EXTRAORDINARY DUTY REPORT

Name ____ (Last) ____ (Initials) ____ (Badge #) ____ (Rank) ____ (Div/Team) ____ To ____ (Regular duty hours)

Overtime worked ____ (Date) ____ (Day of Week) ____ (Beginning) ____ (Ending) ____ (Hours) ____ (Minutes) ____ (Days Off)

Reason:

___ Shift Extended ____ (Case #) Pre-approved by: ____ (Signature Mandatory) ____ (Badge#)

___ Special Detail ____ (Case #) ____ (Explanation Mandatory)

___ Backfill/Shortage ____ (For Badge #) ____ (Explanation Mandatory)

___ Court (Attach Subpoena) ____ (Case #) Did you testify? ___ No ___ Yes ____ (Hours) ____ (Minutes)

Premium Pay: ___ SRT ___ FTO ___ EOD ___ Phone Standby

On-duty ____ (Hours) ____ (Minutes) Off-duty ____ (Hours) ____ (Minutes) Comp time / Vacation time taken this week? ___ Yes ___ No

Signed: ____ (Signature) ____ (Date) ____ (Time) Prefer: Time / $$$ (Circle One)

Approval

Budget Code:

___	1301	Regular OT
___	1303	Hourly OT
___	1311	Special Events
___	1312	Training
___	1313	Vacation Relief
___	1315	Misc.
___	1316	Sick Time Relief
___	1317	Court / PRC
___	1338	Work Private Parties

Activity Code:

___	6901	Admin
___	6902	Media
___	6903	IAB
___	7002	Prof. Standards
___	7003	P&T / Court / PRC
___	7101	SS Admin
___	7004	Jail
___	7206	Comm. Center
___	7104	Records/Liaison/Warr
___	7202	Operations
___	7301	Investigations
___	7302	Traffic
___	7303	Parking
___	7304	SEU
___	7305	CAU
___	7306	ABC
___	7307	Crime Scene

Project Code:

___	XX3069	SRT
___	XX3070	Court (needed)
___	XX3071	Court (NOT needed)
___	XX3072	PRC Appearance
___	XX3A01	Workers Comp
___	XX3A02	Parental Leave
___	XX3A03	Military Leave
___	XX3A04	Replace LD (on duty)
___	XX3A05	Replace LD (off duty)
___	XX3A06	Suspension
___	XX3A07	Administrative Leave
___	XX3A08	Leave w/o pay
___	XX3A09	Under Strength
___	XX3A10	Shift Extended
___	XX3A11	Crime Prevention
___	XX3A12	Community Events
___	XX3A13	Auto Theft
___	XX3A14	Fraud
___	XX3A15	Homicide
___	XX3A16	Property Crimes
___	XX3A17	Robbery
___	XX3A18	SVU / Sex Crimes
___	15PO02	SVU / YSD
___	15PO10	SVU / DV
___	15PO01	Traffic / FAIT
___	XX3A19	SEU / Narcotics
___	XX3A20	SEU / Prostitution
___	XX3A21	Santa Rita Transportation
___	XX3A22	Hospital Transportation
___	XX3A23	Other Transportation
___	XX3A24	Telegraph (Fri / Sat)
___	XX3A25	City Council
___	XX3A26	Private Property (General)
___	XX3A72	DUI Checkpoint
___	XX3B74	Private Property (UCB)
___	XX3B75	Private Party (BUSD)
___	XX8P14	EOD
___	XX8P15	Range Training / FTU TTT
___	XX8P16	DT Training / DTU TTT
___	XX8P17	Demonstrations
___	XX8P18	Special Training
____		Other: ____

Time / $$$* (Circle One) *Grants $$$ only

Total Hours ____ (Hours) ____ (Minutes)

____ (Supervisor) ____ (Date) ____ (Commander) ____ (Date) ____ (Div. Commander) ____ (Date)

Revised 9/2014

Overtime Reference Information – Overtime regulations are codified in General Order D-15 and Union Agreements between the City and the BPA or Local 1021. See referenced materials for more detail.

- **Whether an employee shall be compensated for overtime by compensatory time off or by payment shall be at the sole discretion of the employee's department director. MOU BPA §19.1.1.2.**
- No employee may work overtime or extend his or her shift without express prior approval of his or her supervisor. General Order D-15 §17.
- For paid overtime to be credited, an employee is required to submit an Extraordinary Duty Report immediately following the overtime assignment. General Order D-15 §17.
- Unless specifically requested by a commanding officer, employees shall not work overtime on their regularly scheduled shift on days they would normally work. MOU BPA §19.1.
- On days when they have taken paid time off for any reason other than workers' compensation, they are not automatically restricted from working overtime during those same days on shifts other than their own. MOU BPA §19.1.
- An employee who is placed on emergency on-call status on his or her regularly scheduled day off shall be paid or be credited with compensatory time off at a one quarter (¼) time rate. General Order D-15 §40(a) / MOU BPA §19.3.1.
- If the emergency on-call status continues into a second day during the month, an employee placed on emergency on-call status shall be paid or be credited with compensatory time off at a one quarter (¼) time. General Order D-15 §40(b) / MOU BPA §19.3.2.
- Emergency Overtime - An employee is guaranteed at least three (3) hours overtime when called to emergency overtime duty from his or her residence. MOU BPA §19.7.
- Unless otherwise approved by a Commanding Officer, all court overtime shall be paid. General Order D-15 §27 / MOU BPA §20.1.2.
- A sworn employee who makes an off-duty court appearance shall receive a minimum of four (4) hours overtime unless his or her scheduled duty reporting time, regular shift or overtime shift is less than four hours after the scheduled court appearance in which case the employee will receive overtime in the lesser amount. General Order D-15 §28 / MOU BPA 20.1.3.
- For off-duty, out-of-town court appearances, travel constitutes court overtime and is determined by the round trip time from the Hall of Justice. General Order D-15 §31 / MOU BPA D-15 20.1.5.
- Sworn employees who are placed on telephone stand-by for the court will be compensated by earned compensatory time as follows: General Order D-15 §34 / MOU BPA 20.2.1-20.2.2.
    - Duty Day: One hour minimum compensatory time and hour for hour thereafter.
    - Day Off: Two hour minimum compensatory time and hour for hour thereafter.
- Subpoena should be attached and case number indicated if either or both are available. General Order D-15 §35(a) / MOU BPA 20.2.2.1.
- Report is to be completed by the officer and shall specify the case number and the name of the Deputy District Attorney placing him or her on telephone stand-by. General Order D-15 §35(b) / MOU BPA D-15 20.2.2.2.

SEIU Local 1021 Only

- Employees who are called into work outside their normal work schedule shall be paid overtime compensation for actual time worked. The minimum time for which such overtime compensation shall be paid shall be four (4) hours. If such overtime work is performed prior to the beginning of the regularly scheduled work period and overtime continues into the regularly scheduled work period without a break in service, compensation shall be paid only for the actual time worked. Memorandum Agreement SEIU Local 1021 §14.5.

Source: Berkeley Police Department

Appendix IV. Sample BPD Patrol Timesheet

TIMESHEET – OPERATIONS DIVISION

Month, Day, 2021 – Month, Day, 2022 [Six-month period]

Team 1 – *Lieutenant 1* 0600-1600 M/T/W/T				**Team 2** – *Lieutenant 1* 1100-2100 M/T/W/T			
Sergeant 1		**Sergeant 2**		**Sergeant 3**		**Sergeant 4**	
Officer 1	Badge #	Officer 6	Badge #	Officer 11	Badge #	Officer 16	Badge #
Officer 2	Badge #	Officer 7	Badge #	Officer 12	Badge #	Officer 17	Badge #
Officer 3	Badge #	Officer 8	Badge #	Officer 13	Badge #	Officer 18	Badge #
Officer 4	Badge #	Officer 9	Badge #	Officer 14	Badge #	Officer 19	Badge #
Officer 5	Badge #	Officer 10	Badge #	Officer 15	Badge #	Officer 20	Badge #
Team 3 – *Lieutenant 2* 1530-0130 M/T/W/T				**Team 4** – *Lieutenant 2* 2030-0630 M/T/W/T			
Sergeant 5		**Sergeant 6**		**Sergeant 7**		**Sergeant 8**	
Officer 21	Badge #	Officer 26	Badge #	Officer 30	Badge #	Officer 35	Badge #
Officer 22	Badge #	Officer 27	Badge #	Officer 31	Badge #	Officer 36	Badge #
Officer 23	Badge #	Officer 28	Badge #	Officer 32	Badge #	Officer 37	Badge #
Officer 24	Badge #	Officer 29	Badge #	Officer 33	Badge #	Officer 38	Badge #
Officer 25	Badge #			Officer 34	Badge #	Officer 39	Badge #
Team 5 – *Lieutenant 3* 0600-1830				**Team 6 A -** *Lieutenant 3* 1130-Midnight		**Team 6 B -** *Lieutenant 4* 1400-0230	
Sergeant 9		**Sergeant 10**		**Sergeant 11**		**Sergeant 12**	
Officer 41	Badge #	Officer 46	Badge #	Officer 51	Badge #	Officer 56	Badge #
Officer 42	Badge #	Officer 47	Badge #	Officer 52	Badge #	Officer 57	Badge #
Officer 43	Badge #	Officer 48	Badge #	Officer 53	Badge #	Officer 58	Badge #
Officer 44	Badge #	Officer 49	Badge #	Officer 54	Badge #	Officer 59	Badge #
Officer 45	Badge #	Officer 50	Badge #	Officer 55	Badge #	Officer 60	Badge #

Vacation Relief

M-TH: Sergeant 15

M-TH: Officer 71

Sergeant 16

FSS Officer 77

Team 7 - *Lieutenant 4* 1800 - 0630			
Sergeant 13		**Sergeant 14**	
Officer 61	Badge #	Officer 66	Badge #
Officer 62	Badge #	Officer 67	Badge #
Officer 63	Badge #	Officer 68	Badge #
Officer 64	Badge #	Officer 69	Badge #
Officer 65	Badge #	Officer 70	Badge #

Bikes:

Sergeant 17

Officer 72	Badge #
Officer 73	Badge #
Officer 74	Badge #
Officer 75	Badge #
Officer 76	Badge #

Official [Date] **Timesheet**

Source: Berkeley Police Department

Mission Statement
Promoting transparency and accountability in Berkeley government.

Audit Team
Erin Mullin, Senior Auditor
Alejandra Barrio Gorski, Auditor I

City Auditor
Jenny Wong

Office of the City Auditor
Phone: (510) 981-6750
Email: auditor@cityofberkeley.info
Website: www.cityofberkeley.info/auditor

Copies of our audit reports are available at
www.cityofberkeley.info/Auditor/Home/Audit_Reports.aspx

BERKELEY CITY AUDITOR

BERKELEY CITY COUNCILMEMBER
TERRY TAPLIN
DISTRICT 2

28

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Taplin

Subject: Support for AB-2053 (Social Housing Act)

RECOMMENDATION
Send a letter in support of Assembly Bill 2053 to the state legislature.

FINANCIAL IMPLICATIONS
None.

BACKGROUND
Assembly Bill 2053 is an updated version of Assembly Bill 387 (2021) by Assemblymember Alex Lee (D-San Jose). The bill would establish the California Housing Authority, a new agency to develop and operate mixed-income social housing throughout the state. The bill defines social housing as publicly backed, self-sustaining housing that accommodates a mix of household income ranges. Social housing is protected from being sold to a private for-profit entity for the duration of its useful life, and residents are granted the same protections as tenants in private property, if not more. Dwelling units would be provided both for leasehold ownership and as rental housing.

Because social housing is internally cross-subsidized by higher income households (including rents at market rate), it would avoid the problems of concentrated poverty, disinvestment, and lack of operating subsidies that has afflicted public housing throughout the United States in the past. This model is already working successfully elsewhere in the United States, including Montgomery County, Maryland under the supervision of the Housing Opportunity Commission (HOC)[1], and Sacramento's CADA agency.[2]

On November 9, 2021, the Berkeley City Council unanimously passed a resolution recognizing housing as a human right, as well as committing to a study of social housing models in Berkeley, which is currently pending future funding. The City Council has recognized that housing security and fair housing opportunity is a core mandate of the public sector, and that it can learn from other countries with successful public sector housing development models, such as Vienna and Singapore.

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[1] https://www.hocmc.org/news-archive/775-hoc-breaks-ground-at-900-thayer-in-silver-spring.html
[2] https://www.cadanet.org/resources-agendas/fast-facts

2180 Milvia Street, Berkeley, CA 94704 ● Tel: (510) 981-7120 E-Mail: TTaplin@cityofberkeley.info

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
None.

CONTACT PERSON
Councilmember Taplin   Council District 2   510-981-7120

Attachments:
1: Letter

The Honorable Alex Lee
State Capitol – Room 2170
P.O. Box 942849
Sacramento, CA 94249-0025

Assembly member Lee:

The City Council of the City of Berkeley is proud to support Assembly Bill 2053, the Social Housing Act. We believe that a state housing agency developing publicly-owned, mixed-income housing with a skilled and trained workforce and maintained by diverse communities of residents offers a promising path toward housing abundance and economic justice.

On November 9, 2021, the Berkeley City Council unanimously passed a resolution recognizing housing as a human right, as well as committing to a study of social housing models in Berkeley. The City Council has recognized that housing security and fair housing opportunity is a core mandate of the public sector, and that it can learn from other countries with successful public sector housing development models, such as Vienna and Singapore. By establishing a statewide Housing Authority to produce and preserve social housing, your bill could have transformative impacts with regards to expanding housing opportunity and providing sustainable community autonomy for Berkeley residents and residents-to-be.

California currently ranks 49th out of all 50 states in new homes built per capita, and roughly one-fifth of the population bears an extraordinary rent burden, paying over half of their income in rent. According to the Public Policy Institute of California, over 800,000 households in the state would have stayed above the poverty line in 2019 if housing costs had remained constant at 2013 levels. While progress is incremental, even minor improvements represent real material gains for our most vulnerable residents. Berkeley and other cities are making substantive efforts to increase housing supply, but we are well aware that neither the private market nor publicly subsidies alone can build us out of a housing shortage that was decades in the making. It will take every available strategy on the table, and the City of Berkeley is heartened by your bold and innovative proposal.

With gratitude,

The Berkeley City Council
2180 Milvia St
Berkeley, CA 94704

BERKELEY CITY COUNCILMEMBER
TERRY TAPLIN
DISTRICT 2

29

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Taplin, Councilmember Wengraf (co-sponsor), Mayor Arreguín (co-sponsor), Councilmember Robinson (co-sponsor)

Subject: Support for AB-2336

RECOMMENDATION
Send a letter of support for Assembly Bill 2336: Speed Safety System Pilot Program.

BACKGROUND
The California Vehicle Code currently does not permit the use of cameras for enforcement of speeding laws. Assembly Bill 550 (Chiu, 2021) would have established a pilot program for speeding cameras in several cities including Oakland, San Francisco, San Jose, and Los Angeles. It failed to pass through the Assembly Appropriations Committee, despite being widely supported by local governments and street safety advocates.

This bill is a revived version of AB-550.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
None.

CONTACT PERSON
Councilmember Taplin Council District 2 510-981-7120

ATTACHMENTS
1. Letter

2180 Milvia Street, Berkeley, CA 94704 ● Tel: (510) 981-7120 E-Mail: TTaplin@cityofberkeley.info

The Honorable Laura Friedman
State Capitol
P.O. Box 942849
Sacramento, CA 94249-0043

Assembly Member Friedman:

The City Council of the City of Berkeley is proud to support your bill, AB-2336, to establish a pilot program for speeding cameras. Speeding cameras are used for traffic enforcement successfully in jurisdictions throughout the country to hold irresponsible motorists accountable for putting lives at risk, reducing dangerous speeding and potentially saving countless lives. Without basic tools for accountability, the public sector cannot meaningfully uphold the social contract that is supposed to preserve life and limb on our public infrastructure. We also respectfully request the inclusion of the City of Berkeley in the pilot program authorized in the bill.

In 2021, there were eight traffic fatalities in the City of Berkeley, a 34% increase from the previous year. Five of the eight were pedestrians. It was the deadliest year on Berkeley's streets since 1984. Each death is a devastating loss for the slain person's loved ones, local community, and society at large. Moreover, each death represents a failure of public policy to enact common sense restrictions on motor vehicles. Your bill is a much-needed step in the right direction.

Thank you very much for your tireless dedication to safe streets and transportation justice.

Sincerely,

The Berkeley City Council
2180 Milvia St
Berkeley, CA 94704

BERKELEY CITY COUNCILMEMBER
TERRY TAPLIN
DISTRICT 2

30

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Taplin (Author), Councilmember Bartlett (Co-Sponsor)

Subject: Support for AB-2713

RECOMMENDATION
Send a letter of Support for Assembly Bill 2713: Rent caps

BACKGROUND
Assembly Bill 1482 (Chiu, 2019) caps gross rent increases to 5% per year plus the annual change in Consumer Price Index for All Urban Consumers for All Items (CPI-U), or 10%, whichever is lower. However, it lacks a statewide enforcement mechanism and puts the onus on tenants to seek legal counsel to protect their rights.

AB-2713 would make any lease provision that violates AB-1482 rent caps legally unenforceable. Additionally, it would narrowly define the “intent to occupy” provision for a “just cause” tenancy termination to be a “good faith intention to occupy” a residential unit, prohibiting the use of this provision if the owner or a relative of the owner inhabits another unit on the property, or if there are vacant units on the property. Additionally, the owner must provide written notice to the tenant 180 days prior if they intend to withdraw the property from the rental market.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
None.

CONTACT PERSON
Councilmember Taplin Council District 2 510-981-7120

Attachments:
1: Letter

2180 Milvia Street, Berkeley, CA 94704 ● Tel: (510) 981-[XXXX] ● TDD: (510) 981-6903 ● Fax: (510) 981-[XXXX]
E-Mail: [e-mail address]

The Honorable Buffy Wicks
State Capitol
Sacramento, CA 95814

Dear Assembly Member Wicks:

The Berkeley City Council is proud to support your bill, AB-2713, to strengthen just cause eviction protections and caps on annual rent increases. As you know, rental prices in the Bay Area continue to skyrocket amid a statewide housing shortage, and lower-income residents and communities of color remain at highest risk of displacement. Evictions and displacement have well-documented impacts on individual health and safety, as well as widespread detriments to racial justice and equity.

Despite the statewide moratorium on rental evictions during the COVID-19 pandemic, owner move-in evictions under the so-called Ellis Act have remained a disturbing problem for communities throughout the state. Furthermore, in spite of Berkeley's strong rent control laws, the statewide cap on annual rent increases pursuant to AB-1482 offers little by way of enforcement, putting the burden on tenants to enforce the law to protect their rights. The City of Berkeley does not have the resources to provide sufficient legal assistance to every rental household, inclusive of those whose units are exempt from local rent control under the Costa-Hawkins Act, in order to enforce AB-1482.

Your bill offers fair and common-sense solutions to the difficult problem of balancing constitutional property rights with tenant stability and the serious humanitarian needs that stability entails. Narrowly curtailing a property owners' "intent to occupy" provision for just cause termination, and requiring 180 days' written notice prior to removing a unit from the rental market, increase stability for tenants without imposing an onerous burden on law-abiding property owners.

Thank you for your leadership on this important issue.

Sincerely,

The Berkeley City Council
2180 Milvia St
Berkeley, CA 94704

31

BERKELEY CITY COUNCILMEMBER
TERRY TAPLIN
DISTRICT 2

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Terry Taplin

Subject: Budget Referral: West Berkeley Transportation Plan

RECOMMENDATION
That the City Council refer $300,000 to the FY23-24 budget process for the hiring of a consultant to conduct a study and draft a comprehensive plan for transportation in West Berkeley through 2050.

FISCAL IMPACTS
An estimated $300,000 for the hiring of a consultant to study West Berkeley transportation patterns and craft the West Berkeley Transportation Plan.

BACKGROUND
Out of all the unique areas in the City of Berkeley, it is arguable that none have undergone more changes in the past century than the residential, commercial, and industrial sector of West Berkeley, which encompasses the City west of Sacramento Street. What is now known as West Berkeley was home to the native Ohlone people for thousands of years, who lived on or near the West Berkeley Shellmound. Following the European colonization of North America and the Bay Area, Berkeley was eventually incorporated in 1878 and West Berkeley became a quickly growing industrial and residential area. This growth, encouraged by the proximity of the waterfront, the Central Pacific Railroad, and the University of California, led to West Berkeley's development into one of the Bay Area's primary industrial areas during the first half of the twentieth century.

Initiated in 1985 and adopted in 1993, the West Berkeley Plan sought to reexamine and reinforce West Berkeley's traditionally diverse use of light-industrial, commercial, and residential zoning in a way that would bring more economic life back to West Berkeley and plan for the area's development through 2005.[1] Though written nearly three decades ago, the Transportation section of the West Berkeley Plan raises many of the same concerns and goals that the City is still grappling with today.

[1] https://www.cityofberkeley.info/Planning_and_Development/Redevelopment_Agency/West_Berkeley_Plan_(The).aspx

The Transportation section of the West Berkeley Plan highlighted West Berkeley's historically poor public transportation service and large amount of free parking, while seeking to plan for a West Berkeley with the reduced use of single-occupant automobiles, protection of local residential streets from through-traffic, reduced congestion, improved public transportation, and an overall improved environment for pedestrians and cyclists.[2] All of these and more are issues for West Berkeley transportation in 2022. Automobile use is still much higher than is necessary to meet Berkeley's climate and Vision Zero goals. Bus service has been reduced as AC Transit suspended Line 80, which serviced West Berkeley along Sixth Street, following pandemic-related budget cuts.

Encompassing almost the entirety of the Equity Priority Area under the Vision Zero Action Plan, West Berkeley is also the most dangerous part of all of Berkeley for pedestrians.[3] Decades after the West Berkeley Plan, it is clear that the City Council must reexamine the state of transportation in West Berkeley and plan for a more accessible and sustainable future.

<u>RATIONALE FOR RECOMMENDATION</u>

As the City of Berkeley undergoes a Housing Element process to plan for the addition of a minimum of 8,943 new homes by 2031, West Berkeley corridors of San Pablo Avenue and University Avenue are among the Priority Development Areas (PDAs) targeted for infill housing in early plans.[4] While the growth in West Berkeley's population in the next decade will bring a welcome burst of new life and community to the City as a whole, the continued poor condition of transportation in West Berkeley as the population grows will only encourage these thousands of new residents to continue their reliance on cars and threaten Berkeley's climate and Vision Zero goals. Transportation planning in West Berkeley must be updated in order to finally address the deficiencies of transportation that the area has faced for decades, while also planning for the future of West Berkeley so that new residents will move to a historic district that allows them to give up their car, feel safe as pedestrians and cyclists, and be connected to the broader Bay Area with a world-class public transportation system.

To achieve this vision, no possibilities should be left off the table. Berkeley must draw on old ideas from the West Berkeley Plan like removing Ashby Avenue from the State Highway system, working closely with AC Transit for the expansion of low-emission bus services, institute charges for parking, expanding bicycle parking, and improved traffic control devices. Furthermore, the City can draw from its strong community of cyclists, urbanists, and the new generation of planners who are already clamoring for more ambitious ideas such as bus-only lanes, the wider use of protected bike lanes, redesigning the directions that cars can currently travel on streets, and even the full pedestrianization of some streets.

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[2] https://www.cityofberkeley.info/Planning_and_Development/Home/West_Berkeley_-_Transportation.aspx

[3] https://www.cityofberkeley.info/uploadedFiles/Public_Works/Level_3_-_Transportation/Berkeley_Vision_Zero_Action_Plan_Approved_03102020.pdf

[4] https://www.berkeleyside.org/wp-content/uploads/2021/09/Item-1-Pres-Planning-1.pdf

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
By planning for a West Berkeley that is less reliant on the use of private automobiles through the strengthening of the area's network of bicycle and pedestrian infrastructure, the expansion of public transportation service, and the placing of limitations on car traffic, a West Berkeley Transportation Plan stands to aide Berkeley in its climate goals in incalculable ways.

CONTACT
Terry Taplin, Councilmember, District 2, (510) 981-7120

BEN BARTLETT
CITY COUNCILMEMBER, DISTRICT 3

32

CONSENT CALENDAR
March 22, 2021

To: Honorable Mayor and Members of the City Council

From: Councilmember Ben Bartlett (Author), Sophie Hahn, Terry Taplin, and Mayor Jesse Arreguin (Co-Sponsors)

Subject: Budget Referral: Berkeley Reparations – Funding for a Consultant to Facilitate Community Process to Design and Implement a Local Reparations Plan

RECOMMENDATION

Refer to the Fiscal Year 2022/2023 Budget Process, an allocation of $350,000 to fund a Consultant to develop policy recommendations for reparations in Berkeley. These recommendations will address the economic injury and intergenerational trauma experienced by Berkeley's descendants of slavery and the ongoing harm caused to all African Americans by systems that uphold the legacy of segregation. The Consultant will design a process to develop short, medium, and long-term recommendations for reparation policies in Berkeley designed to promote the creation of generational wealth and boost economic mobility, and opportunity in Berkeley's African American community.

1. *Inform*. The Consultant should hold a series of educational events, truth-telling symposiums, sessions, and community gatherings on Berkeley's history. The Consultant should engage a myriad of Berkeley stakeholders, including residents who have experienced harm with economists and historians to provide context. Subject matter experts will employ financial and historical data to illuminate the generational wealth gap, describe barriers to economic mobility, and detail the systemic racism against Berkeley's African American community.
2. *Interact*. The Consultant should aim to foster an interactive dialogue centered on the community's historical experiences and legacy of racism. These group settings should be between persons of diverse vantage points and opinions. The Consultant's facilitation of these emotive conversations should aspire to enable learning and deep listening, connection, and ultimately trust, healing, and the desire to repair the community.
3. *Recommend*. Draw from the community dialogues to issue short, medium, and long-term recommendations, for reparations policies. The policy recommendations should focus on creating significant, sustainable progress towards repairing the damage caused by public and private systemic racism; and mitigate racial disparities in wealth, education, employment, homeownership, health, criminal justice, and more. The recommendations should include a portfolio of policies aligned under the following framework:
    i. Reckoning
    ii. Acknowledgment

iii. Accountability
iv. Redress

FRAMEWORK DEFINITIONS[1]

Reckoning

The reparations process requires a reckoning with the truth. Participants share statistical data that accurately illustrates the history being examined. This initial part of the framework might take the form of educational presentations from diverse speakers. Reckoning allows all Berkeley residents to understand the harm that has been caused in their City: not only what happened, but how it happened, and why it happened. Reckoning creates an opportunity for people to express their subjective, individual experiences with racial exclusion and abuse from all vantage points and perspectives. Reckoning can take place on a number of topics, including but not limited to:

- Redlining
- Social Integration
- Food Deserts
- Healthcare iniquities
- Environmental Racism
- Policing
- Drug War and Cannabis
- Wealth Preservation
- Lack of Opportunity for Wealth Creation
- Housing

By localizing such topics, the audience within the City of Berkeley can better understand the issues close to home.
Truth is integral to the reparations process because it presents a common understanding of the history of African Americans in Berkeley.

Acknowledgment

Acknowledgement names the harm that has been surfaced in a public way by an official body. Acknowledgement may include an official declaration, a public apology that includes Acknowledgement of facts, or ways to commemorate those who have been harmed, such as cultural sites, monuments, or museums.

Accountability

Accountability shifts the conversation toward the future and demonstrates ownership and willingness to take responsibility for harmful actions. Accountability includes making a commitment to non-repetition and considers who must be at the table to hold the institution accountable to providing redress in an effective way.

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[1] Florant, A., 2022. *Liberation Ventures*. [online] Liberation Ventures. Available at: <https://www.liberationventures.org> [Accessed 9 February 2022].

<u>Redress</u>

Redress includes acts of restitution and compensation to those who have been harmed to create better outcomes in areas that may include but are not limited to wealth creation, cash payments, housing, healthcare, and education.

BACKGROUND

In 1868 General Sherman issued Special Field Orders No. 15. This Civil War-era order declared that each newly freed Black family would, at last, be compensated for being used to enrich the United States with generations of coerced labor. The order promised “not more than forty acres of tillable ground”, and became known as “40 acres and a mule”. This phrase stands as both a symbol of America’s broken promise and a quantifiable, economic deficit owed to foundational Black Americans. The value of that land today is more than $6.4 trillion[2].

From 1619 to 1865, more than 4,000,000 Africans and their descendants were enslaved in what became the United States. Constitutionally and statutorily sanctioned by the United States government, the institution of slavery constituted an immoral and inhumane deprivation of Africans’ life, liberty, citizenship rights, cultural heritage, and denial of compensation. Following the abolition of slavery, federal, state, and local laws and practices have sustained systems of oppression and exclusion that disadvantage African American persons.

In the 1890’s, Callie House, a African American woman started the one of the first organizations to advocate for Reparations[3].

These segregationist policies and practices are full-spectrum. The spectrum includes Jim Crow, voting restrictions, redlining, denial of remedies in civil court, inability to join labor unions, employment discrimination, criminal justice abuse, mass incarceration, denial of access to capital by lenders, denial of federal land grants, and housing loan guarantees, concentrated exposure to pollution, and inequitable access to education. These government-sanctioned conditions have perpetuated the economic, educational, social, and health hardships into modern times. In 2016, the net worth of a typical White family ($171,000) was nearly ten times greater than that of a Black family ($17,150).[4] The racial homeownership gap is tied to the both lineage and racial wealth gap and the trend of rising economic inequality more generally. Since the Great Recession, the gap between Black and White homeownership rates in the United States has increased to its highest level in 50 years -- from 28.1 percentage points in 2010 to 30.1 percentage

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[2] NEUMANN, J. and MATSUE LOEFFELHOLZ, T., 2022. *40 Acres and a Mule Would Be at Least $6.4 Trillion Today—What the U.S. Really Owes Black America - YES! Magazine*. [online] YES! Magazine. Available at: <https://www.yesmagazine.org/issue/make-right/2015/05/14/infographic-40-acres-and-a-mule-would-be-at-least-64-trillion-today> [Accessed 12 February 2022].

[3] Curry, A., 2022. Callie Guy House (ca. 1861-1928) •. [online] Blackpast.org. Available at: <https://www.blackpast.org/african-american-history/callie-house-c-1861-1928/> [Accessed 4 March 2022].

[4] Shambaugh, J. and McIntosh, K., 2022. *Examining the Black-white wealth gap*. [online] Brookings. Available at: <https://www.brookings.edu/blog/up-front/2020/02/27/examining-the-black-white-wealth-gap/> [Accessed 18 January 2022].

points in 2017.[5] The gap in the rate between Black and White families is wider today than it was when it was legal to refuse to sell someone a home because of the color of their skin.

The unemployment rate is also historically about twice as high for Black people as for White people amid even the best economic conditions.[6] In addition, the wage gap between these groups was significantly wider in 2019 than at the start of the century. Even among those who attain advanced degrees, Black people were paid 82.4 cents for every dollar earned by their White peers.[7]

If the racial wealth divide is left unaddressed, the median Black household wealth will reach zero dollars ($0.00) by 2053[8]. Moreover, the COVID-19 pandemic has likely accelerated the evaporation of Black wealth.

Black people have been disproportionately forced to reside in, adjacent to, or near toxic and polluted sites that negatively impact their health and property value.[9] This group is also more likely to reside in neighborhoods with food deserts--areas that lack access to foods that provide for a nutritionally adequate diet of whole grains, fresh fruits and vegetables, fresh meat, and high-quality dairy.[10]

In addition to poor food and housing access, Black people historically and currently receive inadequate and often detrimental health The state of health iniquity in America is evidenced by the disproportionate morbidities and mortality rates, due to discriminatory and biased treatment by medical professionals, discriminatory medical practices, and the generational trauma of systemic racism.[11] Currently, Black Americans face higher COVID-19 hospitalization and infection rates than any other racial group because of systemic racism. The compounding effect of existing inequities put Black communities at greater risk of infection and death than their counterparts. For example, Black people are more likely to have other preexisting conditions that put them at risk,

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[5] Choi, J., 2022. *Breaking Down the Black-White Homeownership Gap*. [online] Urban Institute. Available at: <https://www.urban.org/urban-wire/breaking-down-black-white-homeownership-gap> [Accessed 28 February 2022].

[6] Smialek, J. and Tankersley, J., 2022. *Black Workers, Already Lagging, Face Big Economic Risks (Published 2020)*. [online] Nytimes.com. Available at: <https://www.nytimes.com/2020/06/01/business/black-workers-inequality-economic-risks.html> [Accessed 19 January 2022].

[7] Gould, E., 2022. *State of Working America Wages 2019: A story of slow, uneven, and unequal wage growth over the last 40 years*. [online] Economic Policy Institute. Available at: <https://www.epi.org/publication/swa-wages-2019/#table-3> [Accessed 21 December 2021].

[8] Collins, C., Hoxie, J., Asante-Muhammad, D. and Nieves, E., 2017. *Report: The Road to Zero Wealth - Institute for Policy Studies*. [online] Institute for Policy Studies. Available at: <https://ips-dc.org/report-the-road-to-zero-wealth/> [Accessed 1 February 2022].

[9] Newkirk II, V., 2022. *Environmental Racism Is Real, According to Trump's EPA*. [online] The Atlantic. Available at: <https://www.theatlantic.com/politics/archive/2018/02/the-trump-administration-finds-that-environmental-racism-is-real/554315/> [Accessed 13 December 2021].

[10] Barker, C., Francois, A., Goodman, R. and Hussain, E., 2022. [online] Digitalcommons.nyls.edu. Available at: <https://digitalcommons.nyls.edu/cgi/viewcontent.cgi?article=1002&context=racial_justice_project> [Accessed 10 November 2021].

[11] Taylor, J., 2022. *Racism, Inequality, and Health Care for African Americans*. [online] The Century Foundation. Available at: <https://tcf.org/content/report/racism-inequality-health-care-african-americans/?session=1> [Accessed 4 January 2022].

have less access to affordable and quality health care, work in more vulnerable sectors, and/or rely on public transit as their main form of transportation.[12]

In addition to experiencing significant economic and health disparities, Black people are also disproportionately impacted by the criminal justice system. In 2018, Black people represented 33% of the sentenced prison population, nearly triple their 12% share of the U.S. adult population.[13] Black male offenders receive sentences on average 19.1 percent longer than White male offenders guilty of the same offense[14]. According to a 2017 Police Violence Report, Black people were also more likely to be killed by police, more likely to be unarmed, and less likely to be threatening someone when killed.[15] Many police reforms have been instituted here in Berkeley, but inequities persist. BPD police statistics show Black stops are exactly 50% of the total 608 stops at 304, with White stops at 143 for 23.52% of all stops. When adjusted to take into account the low number of Black people residing in Berkeley, Black stops are about 42.7 per 1,000 of their population, where White stops are about 2.9 per 1,000, a disparity of 14.5 to 1.[16]

Racism and discrimination have not ended with the abolition of slavery and instead, have shifted and transformed through institutions, policies, and practices of federal, state, and local governments. The legacy of slavery remains with us today. To address the fundamental injustice, brutality, and inhumanity of slavery in the United States and the subsequent racial and economic discrimination against Black people, the Council should adopt a resolution that supports reparations for the Black community.

An early leader to prominently call for the United States to make reparations to African Americans was Randall Robinson, who authored *The Debt: What America Owes to Blacks*. In his bestselling book, Robinson challenges the nation to provide compensation to African Americans as a way to repair the intergenerational wounds that slavery has created. He posits that because slavery was so instrumental to America, it is still deeply ingrained into the present-day American economy. Randall cites the history of Wall Street and how it became the center of the slave trade from 1711 to 1762. The slave trade was a foundational element of the New York Stock Exchange, which banks and insurance companies actively participated in. As a result, major financial institutions–such as Wells Fargo and J.P Morgan Chase–grew exponentially. As Randall reflected in his book, Americans do not fully understand the roots of the

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[12]MENASCE HOROWITZ, J., 2022. *Views on why Black Americans face higher COVID-19 hospitalization rates vary by party, race and ethnicity*. [online] Pew Research Center. Available at: <https://www.pewresearch.org/fact-tank/2020/06/26/views-on-why-black-americans-face-higher-covid-19-hospitalization-rates-vary-by-party-race-and-ethnicity/> [Accessed 7 January 2022].

[13]GRAMLICH, J., 2022. *Black imprisonment rate in the U.S. has fallen by a third since 2006*. [online] Pew Research Center. Available at: <https://www.pewresearch.org/fact-tank/2020/05/06/share-of-black-white-hispanic-americans-in-prison-2018-vs-2006/> [Accessed 14 January 2022].

[14] Schmitt, G., Reedt, L. and Blackwell, K., 2012. *Demographic Differences in Sentencing: An Update to the 2012 Booker Report*. [online] Ussc.gov. Available at: <https://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-publications/2017/20171114_Demographics.pdf> [Accessed 23 February 2022].

[15]Sinyangwe, S., 2022. *2021 Police Violence Report*. [online] Policeviolencereport.org. Available at: <https://policeviolencereport.org/> [Accessed 28 February 2022].

[16]City of Berkeley, 2022. *Berkeley PD's Stop Data Now on City's Open Data Portal - City of Berkeley, CA*. [online] Cityofberkeley.info. Available at: <https://www.cityofberkeley.info/Police/Home/Berkeley_PD_s_Stop_Data_Now_on_City_s_Open_Data_Portal.aspx> [Accessed 19 November 2021].

existing American economy[17]. The complete truth about slavery being a critical component of the economy is often hidden in American education. In order to fully address the reparations needed, the psychological implications of slavery are just as important to understand as the economic implications, which leads us back to the call for America to make reparations to African Americans.

To go forward with reparations, the process of truth sharing and some form of reconciliation should first be undertaken. Truth and Reconciliation as a model originated in the context of South Africa. The Truth process there brought together victims and perpetrators in a setting of open and honest dialogue. Reconciliation was a safe forum to air grievances and enter into the public record, as a form of both collective catharsis and, ultimately, accountability[18].

The goal for Truth, in a Berkeley context, is to establish a common understanding of the history of Black Americans in Berkeley. This can be accomplished through educational presentations localized for the Berkeley community.

The process of Reconciliation in Berkeley entails using a panel of experts to help format and begin the framework for community dialogue. This community dialogue will be done through workshops to bring about community policy on reparations. It is important that the dialogue go beyond the City of Berkeley and promote reconciliation and repair for the harm done to Black Americans in other communities through the United States. In other words, the hope is that the dialogue and actions taken in Berkeley join the national conversation on Reparations, and serve as a model for other jurisdictions who wish to repair their communities.

<u>Reparations in Action</u>

<u>The United States of America</u>

- Alaska Native Claims Settlement Act
  - Recognition of aboriginal land rights in Alaska
  - 1971, Given Around $1 billion + 44 million acres of land[19]
- Tuskegee victims of syphilis experiments
  - 1974 - A $10 million out-of-court settlement was reached between the U.S. government and Tuskegee victims, Black men who had been unwitting subjects of a study of untreated syphilis[20], and who did not receive available treatments[21]
- Japanese Internment

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[17] Robinson, Randall. The Debt: What America Owes to Blacks. Plume, 2001.

[18] Truth and Reconciliation Commission - Department of Justice, 2020. *Truth and Reconciliation Commission*. [online] Justice.gov.za. Available at: <https://www.justice.gov.za/trc/> [Accessed 7 February 2022].

[19]," citing Cooley, R.A. 1983. "Evolution of Alaska land policy." in Morehouse, T. A. (editor). Alaskan Resources Development: Issues of the 1980s. Boulder: Westview Press, pp. 13-49

[20] Newkirk, Vann R. II (June 17, 2016). "A Generation of Bad Blood". *The Atlantic.*

[21] Baker, Shamim M.; Brawley, Otis W.; Marks, Leonard S. (June 2005). "Effects of untreated syphilis in the negro male, 1932 to 1972: a closure comes to the Tuskegee study, 2004"

  - The U.S. government disbursed $1.6 billion to 82,219 Japanese-Americans who had been interned.
  - The Civil Liberties Act of 1988 mandated education for the public on the injustices Japanese-Americans faced[22]
- Rosewood Massacre[23]
  - The state of Florida approved $2.1 million for the living survivors of a 1923 racial pogrom that resulted in multiple deaths and the decimation of the Black community in the town of Rosewood in 1994[24]
- JPMorgan Chase Profiteering from the Slave Trade
  - In 2005, Banking corporation JPMorgan Chase issues an apology for their historical ties to the slave trade. The corporation set up a $5 million scholarship fund for Black students to attend college. The scholarship program, called Smart Start Louisiana, was likened to reparations by several commentators, including Rev. Jesse Jackson
- State of North Carolina Eugenics Program Survivors
  - In 2014, the state of North Carolina set aside $10 million for reparations payments to living survivors of the state's eugenics program, which forcibly sterilized approximately 7,600 people[25]
- US Government Settlement with 17 Native American Tribes
  - In 2016, the U.S. government reached a settlement of $492 million with 17 Native American tribes to resolve lawsuits alleging the federal government mismanaged tribal land, resources, and money[26]
- State of California Eugenics Program Survivors.
  - In 2021, the California legislature enacted a law requesting $7.5 million of the budget be put towards providing reparations to survivors of the state's former eugenics law, by which over 20,000 institutionalized women were forcibly sterilized[27]
- St. Petersburg, Florida
  - In 2021, the City Council of St. Petersburg approved the creation of a reparations program and the implementation of an equity officer in response to a study that identified structural racism in the state. The program will establish affordable housing, educational opportunities, and other means of economic development that would contribute to an equal environment for Black residents[28]

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[22] Yoshida, H., 2022. *Redress and Reparations for Japanese American Incarceration | The National WWII Museum | New Orleans*. [online] The National WWII Museum | New Orleans. Available at: <https://www.nationalww2museum.org/war/articles/redress-and-reparations-japanese-american-incarceration> [Accessed 9 February 2022].

[23]Glenza, J., 2022. *Rosewood massacre a harrowing tale of racism and the road toward reparations*. [online] the Guardian. Available at: <https://www.theguardian.com/us-news/2016/jan/03/rosewood-florida-massacre-racial-violence-reparations> [Accessed 7 January 2022].

[24] "Rosewood Massacre: A Harrowing Tale of Racism and the Road toward Reparations" by Jessica Glenza, *The Guardian*, January 3, 2016.

[25] "North Carolina Set To Compensate Forced Sterilization Victims" by Scott Neuman, *NPR*, July 25, 2013; "Families of NC Eugenics Victims No Longer Alive Still Have Shot at Compensation" by Anne Blythe, *News & Observer* (Raleigh, N.C.), March 17, 2017.

[26] "U.S. Government To Pay $492 Million To 17 American Indian Tribes" by Rebecca Hersher, NPR, September 27, 2016.

[27] California passes landmark law to provide reparations to survivors of state-sponsored forced sterilization. (2021, July 13). *Disability Rights Education & Defense Fund*

[28] Wright, C. (2021, December). St. Petersburg City Council approves 'reparations' to address structural racism. *Tampa Bay Times*

- Evanston, Illinois
  - Evanston created a reparations program in which victims of historical segregation were provided grants of up to $25,000 to help purchase or mortgage a house[29].

Globally

- Rwanda
  - *Rwanda*. Following the 1994 genocide in Rwanda, the government created a fund to provide financial compensation, as well as support for education, agriculture, and healthcare.[30]
    - The National Unity and Reconciliation Commission was established in Rwanda in 1999 and it was an approach that involved several elements:
      - peace education
      - leadership academy,
      - Seminars
      - national summits
      - research[31]
- Germany
  - In acknowledgment of The Holocaust, Germany's reparation program consists of financial compensation to the Jewish community, care for refugees in Israel, and sponsors ongoing education and remembrance programs[32].
- South Africa
  - South Africa financially compensated those affected by the apartheid by promoting Black land ownership and permitting Black residents to participate in land economics and invest in national property[33].

CURRENT SITUATION

Federal, state, and local policymakers have developed reparation proposals that aim to address the harms perpetuated by the institution of slavery and subsequent systems of oppression that have brutalized and disadvantaged Black people.

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[29] Adams, C., 2022. *Evanston is the first U.S. city to issue slavery reparations. Experts say it's a noble start*. [online] nbcnews.com. Available at: <https://www.nbcnews.com/news/nbcblk/evanston-s-reparations-plan-noble-start-complicated-process-experts-say-n1262096> [Accessed 15 January 2022].

[30] Des Forges, A., 2022. *Rwanda: Justice After Genocide—20 Years On*. [online] Human Rights Watch. Available at: <https://www.hrw.org/news/2014/03/28/rwanda-justice-after-genocide-20-years> [Accessed 28 February 2022].

[31] Department of Public Information, 2014. *The Justice and Reconciliation Process in Rwanda*. [online] un.org. Available at: <https://www.un.org/en/preventgenocide/rwanda/assets/pdf/Backgrounder%20Justice%202014.pdf> [Accessed 28 February 2022].

[32] Vigdor, N., 2021. *Germany Sets Aside an Additional $767 Million for Holocaust Survivors, Officials Say*. [online] Nytimes.com. Available at: <https://www.nytimes.com/2021/10/06/world/europe/holocaust-settlement-germany.html> [Accessed 15 December 2021].

[33] The Irish Times, 2003. *South Africa to pay reparations to victims of apartheid*. [online] The Irish Times. Available at: <https://www.irishtimes.com/news/south-africa-to-pay-reparations-to-victims-of-apartheid-1.472227> [Accessed 4 November 2021].

H.R.40, introduced by Congressperson Sheila Jackson Lee, calls for the creation of a commission to study and develop reparation proposals for African Americans on a federal level.[34] Specifically, the commission will recommend appropriate remedies based on their research into how slavery from the Trans-Atlantic and domestic “trades,” along with the de jure and de facto discrimination faced by the African American community from the end of the Civil War to the present, has impacted their livelihoods. While originally introduced in 1989 by former Congressperson John Conyers, the idea is now becoming a mainstream conversation. In May 2019, Berkeley City Council adopted a resolution in support of H.R. 40.

In 2019, Yvette Carnell and Antonio Moore, founders of the ADOS movement were instrumental in helping garner over 100 co-sponsors for HR-40, back in 2019, that the bill never had before.

At the state level, California Assemblymember Shirley Weber introduced AB 3121 in February 2020. AB 3121 established a 9-member taskforce that began meeting in 2021 to study and develop reparations proposals.[35] The bill requires the task force to identify, compile, and synthesize the collection of evidentiary documentation of the institution of slavery that existed within the United States. With this analysis, the task force will recommend the form of compensation that should be awarded, the methods through which it should be awarded, and who should be eligible for this compensation. In addition, the bill would state that any authorized state-level reparations are not to be considered as a replacement for any reparations enacted at the federal level. Recently, Dr. Shirley Weber testified that her intent for the California Reparations Task Force was meant for Descendants of American Slavery. Callie House, the Black Woman who led one of the 1st organizations to campaign for Reparations back in the 1890's.

On a local level, Asheville City Council in North Carolina recently and unanimously passed a resolution that supports community reparations for the Black community in the City of Asheville.[36] The resolution marks a move that officially recognizes the injustices of centuries and attempts to right the wrongs by formally apologizing to Black residents for the City's role in slavery, discriminatory housing practices, and other racist policies throughout its history. It also directs the City Manager to establish a process within the next year to develop recommendations to boost economic mobility in the Black community. In addition, it sought to establish a new commission composed of businesses, local groups, and elected officials who will be empowered to make recommendations for reparations.

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[34] Jackson Lee, S., 2019. *H.R.40 — 116th Congress (2019-2020)*. [online] https://www.congress.gov/. Available at: <https://www.congress.gov/bill/116th-congress/house-bill/40/text?q=%7B%22search%22%3A%5B%22hr40%22%5D%7D&r=1&s=1> [Accessed 4 October 2022].

[35] Weber, S., 2020. *Bill Text - AB-3121 Task Force to Study and Develop Reparation Proposals for African Americans.*. [online] Leginfo.legislature.ca.gov. Available at: <https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB3121> [Accessed 3 September 2021].

[36] Davis, N., 2020. *Asheville reparations resolution is designed to provide Black community access to the opportunity to build wealth - The City of Asheville*. [online] The City of Asheville. Available at: <https://www.ashevillenc.gov/news/asheville-reparations-resolution-is-designed-to-help-black-community-access-to-the-opportunity-to-build-wealth/> [Accessed 15 January 2022].

In Durham, North Carolina, the City's Racial Equity Task Force created a plan with concrete goals and measures for the City to adopt, including a plan for Durham to work in conjunction with other local governments across the country to push for a national reparations response.[37] In defining this aim, the task force wrote that any federal program must acknowledge who benefited from slavery, restitute the descendants of those who were enslaved, and offer closure by partnering with them to understand what fair compensation looks like.

While federal and state reparation proposals are moving through the legislatures, it is time that municipalities also address the injustices, brutality, racism, and discrimination that the Black community has faced in the past and the present. Berkeley City Council must join the conversation and take responsibility to adopt programs, policies, and practices that effectively bridge the generational wealth gap and boost economic mobility and opportunity in the Black community. The Council can take a step towards dismantling systemic oppression by creating a process for developing short, medium, and long-term solutions.

OUTREACH, OVERVIEW, AND RESULTS

Liberation Ventures, a leading national organization working on reparations, was consulted and supports the above framework for Berkeley reparations. Local organizations like Berkeley NAACP, McGee Avenue Baptist Church, Black Women Organized for Political Action ("BWOPA"), Intercity Services, Ebenezer Baptist Church, the Center for Food, Faith & Justice have reviewed and supported this proposal. Local Black leaders like Pastor Ambrose Carrol, former Oakland Mayor and Berkeley resident Elihu Harris, Planning Commissioner Chip John More, Brandon Floyd, and Mansour Id-Deen have also expressed support for this legislation after reviewing this proposal. We have performed additional outreach and wait for feedback and support Berkeley Juneteenth, St. Paul A.M.E. Church, and individuals like Alderman Robin Rue Simmons from Evanston, Illinois.

ACTIONS/ALTERNATIVES CONSIDERED

Evanston City Council in Illinois approved a resolution to create a Reparations Committee, which would invest in housing assistance and relief initiatives as well as establish economic development programs and opportunities for Evanston's Black community. In addition, the resolution instituted a process for depositing into a Reparations Fund up to $10 million in City tax revenues collected from the sale of recreational marijuana. The Council, or the commission that would be established through this resolution's passage, could consider using Evanston's method of funding reparations.

[37] Durham Racial Equity Task Force, 2020. *Report of the Durham Racial Equity Task Force: An Urgent and Loving Call to Action*. [online] Durhamnc.gov. Available at: <https://durhamnc.gov/DocumentCenter/View/32853/FINAL-REPORT-Durham-Racial-Equity-Task-Force-72220> [Accessed 14 November 2021].

RATIONALE FOR RECOMMENDATION

An expert Consultant will allow the City to develop policies and invest in programs that boost opportunities for the Black community. It is time that cities and local governments join state and federal policymakers in addressing the injustices, brutality, racism, and discrimination that the Black community continues to face.

FISCAL IMPACTS OF RECOMMENDATION

Staff time to develop the structure, powers, and implementation process of the reparations commission, and create short, medium, and long-term recommendations that would boost opportunity for Berkeley's Black community.

CONTACT PERSON

Councilmember Ben Bartlett	bbartlett@cityofberkeley.info
Commissioner James Chang	jchang@cityofberkeley.info
Shakira Khonje	510-981-7130
Kailen Grottel-Brown	510-981-7131
Hillary Phan	510-981-7135

33

Councilmember Sophie Hahn
City of Berkeley, District 5

CONSENT CALENDAR
March 22, 2022

To: Honorable Members of the City Council
From: Mayor Jesse Arreguín, Councilmember Sophie Hahn and Councilmember Rigel Robinson (Co-Authors)

Subject: Supporting Ranked Choice Voting -- Opposing AB 2808 (O'Donnell)

RECOMMENDATION
Adopt a resolution opposing AB 2808 (O'Donnell), which would ban rank choice voting in California, including in those charter cities where the system is already in use. Send a letter to the bill author stating opposition. Send a copy of the Resolution to Assemblymember Buffy Wicks, State Senator Nancy Skinner, and Governor Gavin Newsom.

FISCAL IMPACTS OF RECOMMENDATION
Minimal.

CURRENT SITUATION AND ITS EFFECTS
If passed, AB 2808 (O'Donnell) would ban ranked choice voting in California and would roll back voter enacted ranked choice elections, including in those charter cities like the City of Berkeley where the system is already in use. AB 2808 would deprive each local jurisdiction the authority to determine the best voting method for that jurisdiction.[1]

BACKGROUND
The City of Berkeley has been utilizing ranked choice voting (RCV) since 2010. In Bay Area jurisdictions that conduct RCV, ranked choice voting has eliminated costly runoff elections, given more wins to women and people of color, and increased voter turnout.

What's more, ranked choice voting has led to greater voter participation. In 2017, four cities introduced RCV elections, and all cities had higher turnout than in prior elections. Voters using RCV have been more satisfied with candidates' conduct. According to exit polls, approximately eighty-four percent of voters who participated in ranked choice voting said the new RCV-formatted ballot was easy to complete.[2]

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[1] https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB2808
[2] https://www.fairvote.org/the_facts_of_ranked_choice_voting_voters_like_it_high_turnouts_are_trending

The Berkeley City Council has taken action to support and strengthen the use of RCV. In 2019, Council unanimously voted in support of SB 212, which would have authorized more jurisdictions the ability to adopt RCV. Despite passing the State Legislature, the bill was ultimately vetoed by the Governor.

Voters who use ranked choice voting system overwhelmingly vote in favor of expanding the system.[3]

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE CHANGE

Ranked Choice Voting has the potential to reduce need for run off elections, and associated environmental impacts of additional printing, mailing, and campaign related activities.

RATIONALE FOR RECOMMENDATION

If passed, AB 2808 would undo Berkeley's voter adopted ranked choice voting system.

ALTERNATIVE ACTIONS CONSIDERED

N/A

CONTACT PERSON

Councilmember Sophie Hahn, (510) 981-7150

Attachments:
1: Bill Text AB 2808 (O'Donnell):
https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB2808
2: Resolution in opposition to AB 2808 (O'Donnell)
3: Letter of opposition

[3] https://www.fairvote.org/the_facts_of_ranked_choice_voting_voters_like_it_high_turnouts_are_trending

CALIFORNIA LEGISLATURE— 2021–2022 REGULAR SESSION

ASSEMBLY BILL

NO. 2808

Introduced by Assembly Member
O'Donnell

February 18, 2022

An act to add Section 18 to the Elections Code, relating to elections.

LEGISLATIVE COUNSEL'S DIGEST

AB 2808, as introduced, O'Donnell. Elections: ranked choice voting.

Existing law specifies various procedures for conducting statewide and local elections.

This bill would prohibit the use of ranked choice voting, a method of voting that allows voters to rank candidates in order of preference, in state and local elections.

The bill would include findings that changes proposed by this bill address a matter of statewide concern rather than a municipal affair and, therefore, apply to all cities, including charter cities.

DIGEST KEY

Vote: majority   Appropriation: no   Fiscal Committee: no   Local Program: no

BILL TEXT

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. The Legislature finds and declares all of the following:

(a) Ranked choice voting can lead to inherently undemocratic outcomes like the winners of elections failing to receive a plurality of the vote.

(b) Ranked choice voting is fundamentally more complicated than currently available alternatives and this complexity can lead to mistakes that can further disenfranchise voters.

(c) Ranked choice voting can lead to elections that are more expensive given the additional computer systems or manpower required to tabulate the ranked votes.

(d) Many of the purported benefits of ranked choice voting, including more diverse fields of candidates and fewer negative campaign advertisements, have not been realized in the jurisdictions that have used this election method.

(e) Ranked choice voting does not lead to outcomes that reflect the ideals of our democracy and could harm the ability of voters to express their vote.

SEC. 2. Section 18 is added to the Elections Code, to read:

18. (a) State and local elections shall not be conducted using ranked choice voting.

(b) For purposes of this section, “ranked choice voting” means a method of voting that allows voters to rank candidates for office in order of preference.

SEC. 3. The Legislature finds and declares that Section 2 of this act addresses a matter of statewide concern rather than a municipal affair as that term is used in Section 5 of Article XI of the California Constitution. Therefore, Section 2 of this act applies to all cities, including charter cities.

RESOLUTION NO. -N.S

RESOLUTION OPPOSING AB 2808 (O'DONNELL)

WHEREAS in 2004, City of Berkeley became the first jurisdiction in Alameda County to adopt Ranked Choice Voting, which went into effect in 2010. This is a system that allows voters to rank the candidates on their ballot in order of preference and initiates an instant run-off election if no single candidate reaches over 50% of the vote, thereby eliminating the need for voters to return to the polls for a second runoff election; and

WHEREAS in Alameda County, the cities of San Leandro and Oakland have successfully used Ranked Choice Voting for local elections for over a decade and the city of Albany will use Ranked Choice Voting later this year; and

WHEREAS in addition to preventing costly run-off elections and eliminating low-turnout and less diverse primary elections, Ranked Choice Voting has led to more positive and substantive campaigning and less mudslinging in a number of races, with candidates recognizing the need to appeal to the broader electorate for support;

WHEREAS compared to winner-take-all systems, Ranked Choice Voting encourages more diversity in candidates and voters, and generally has resulted in an increase in election victories by candidates of color where it has been adopted; and

WHEREAS Assembly Bill 2808 (O'Donnell) would prohibit the use of Ranked Choice Voting in state and local elections, including in those charter cities where the system is already in use;

NOW THEREFORE BE IT RESOLVED that the City of Berkeley hereby affirms its support of Ranked Choice Voting, for selecting local elected officials; and

BE IT FURTHER RESOLVED that the City of Berkeley formally opposes AB 2808 (O'Donnell) and calls on members of the Legislature, including representatives of Alameda County where Ranked Choice Voting is widely used, to vote against this bill.

The Honorable Patrick O'Donnell
Member of the Assembly
Capitol Office,
1021 O Street, Suite 4510
Sacramento, CA 95814

Re: AB 2808 – Ranked Choice Voting Repeal – OPPOSE

Dear Assemblymember O'Donnell,

The City of Berkeley strongly opposes Assembly Bill (AB) 2808, , which would prohibit the use of ranked choice voting (RCV) in state and local elections, including charter cities like Berkeley.

In multiple cities, including Berkeley, ranked choice voting has led to greater voter participation and ensured that candidates are elected with majority support. The City of Berkeley amended its City Charter in 2004 to permit the use of RCV with the support of more than 70% of voters, and has been successfully using this system since 2010. In the Bay Area specifically, RCV has eliminated costly runoff elections, given more wins to women and people of color, and increased voter turnout. Exit polling has found that voters understand RCV and prefer RCV to the election system it replaced. RCV has also been adopted by dozens of other cities across the nation that find similar benefits with this election system.

We strongly oppose any attempt to repeal RCV in Berkeley through state legislation or to deprive other local governments the option of adopting this system in the future. For all these reasons, we must oppose AB 2808.

Sincerely,

The Berkeley City Council

CC:
Honorable Assemblymember Isaac Bryan, Chair, Assembly Elections Committee

34

Susan Wengraf
Councilmember District 6

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Wengraf (Author), Councilmember Harrison (Co-Sponsor), Councilmember Hahn (Co-Sponsor)

Subject: Support for AB 1755 (Levine)

RECOMMENDATION

Adopt a Resolution in Support of AB-1755: Homeowners Insurance: Home Hardening (Levine). AB-1755 will require, beginning in 2025, an insurance provider licensed in California to issue an insurance policy to a homeowner that has taken science-based actions to harden their property from wildfire risk. This legislation would also create the Wildfire Protection Grant Program under the Department of Insurance that would administer grants to residential property owners of up to $10,000 to help pay for costs associated with home hardening and wildfire mitigation improvements. Send copies of the Resolution to Assembly Member Levine, Assembly Member Wicks, Senator Skinner, Governor Newsom and Insurance Commissioner Lara.

FINANCIAL IMPLICATIONS

None

BACKGROUND

California's wildfires have resulted in loss of life and catastrophic damage to communities and the environment. As Californians try to protect themselves from future loss, they are facing insurance companies who are cancelling policies or are increasing deductibles and premiums to the point where the policy is unaffordable or insufficient. Residents in Berkeley's VHFHZ have experienced non-renewal of insurance policies on a scale never seen before.

AB-1775 resolves the often-arbitrary practice of insurance policy non-renewal or cancellation of a homeowner who may live in an area considered at risk to wildfire. Continued drought conditions, rising global temperatures and other impacts of the climate crisis are quickly turning most of California into a high-risk wildfire zone. Without legislation, Californians could find their homes uninsurable.

AB-1755 would require insurance carriers to issue home insurance policies to homeowners who have hardened their home against fire, regardless of the home's location. The bill would also create the Wildfire Protection Grant Program to help homeowners pay for costs associated with wildfire mitigation improvements, up to $10,000 per home. AB-1755 would be effective January 1, 2025.

ENVIRONMENTAL SUSTAINABILITY

AB-1755 encourages homeowners in fire prone areas to increase their wildfire mitigation efforts in order to be eligible to be insured. Home hardening is one strategy to help protect property from the spread of wildfire. A key source of air pollution, wildfires release large quantities of carbon dioxide, carbon monoxide and fine particulate matter into the atmosphere. Resulting air pollution can cause a range of health issues, including respiratory and cardiovascular problems. Efforts to lower the risk of out of control wildfires align with Berkeley's environmental sustainability goals.

CONTACT PERSON

Councilmember Wengraf Council District 6 510-981-7160

Attachments:

1: Resolution

2. AB-1755

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

CITY OF BERKELEY SUPPORTS AB-1755 (LEVINE)

WHEREAS, California's wildfires have resulted in loss of life and catastrophic damage to communities and the environment; and

WHEREAS, As Californians try to protect themselves from future loss, they are facing insurance companies who are cancelling policies or are increasing deductibles and premiums to the point where the policy is unaffordable or insufficient; and

WHEREAS, Residents in Berkeley's VHFHZ have experienced non-renewal of insurance policies on a scale never seen before; and

WHEREAS, AB-1775 resolves the often-arbitrary practice of insurance policy non-renewal or cancellation of a homeowner who may live in an area considered at risk to wildfire; and

WHEREAS, Continued drought conditions, rising global temperatures and other impacts of the climate crisis are quickly turning most of California into a high-risk wildfire zone; and

WHEREAS, Without legislation, Californians could find their homes uninsurable.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that it unanimously supports AB-1755.

CALIFORNIA LEGISLATURE— 2021–2022 REGULAR SESSION

ASSEMBLY BILL

NO. 1755

Introduced by Assembly Member Levine

February 01, 2022

An act to add Sections 675.2 and 2033 to the Insurance Code, relating to property insurance.

LEGISLATIVE COUNSEL'S DIGEST

AB 1755, as introduced, Levine. Homeowners' insurance: home hardening.

Existing law creates the Department of Insurance to regulate the business of insurance. Existing law generally regulates classes of insurance, including homeowners' insurance. Existing law prohibits an insurer, for one year after the declaration of a state of emergency, from canceling or refusing to renew a residential property insurance policy solely because the property is in an area in which a wildfire occurred.

This bill would require an admitted insurer licensed to issue homeowners' insurance policies to issue a policy to a homeowner who has hardened their home against fire, regardless of the home's location, on and after January 1, 2025, and would require an insurer to make conforming changes to its internet website and print materials on or before July 1, 2025. The bill would create the Wildfire Protection Grant Program, under which the department would be required to award grants of up to $10,000 each to help homeowners pay for costs associated with wildfire mitigation improvements. The bill would require the department to promulgate regulations to define home hardening for required issuance of homeowners' insurance policies and to administer the Wildfire Protection Grant Program.

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

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BILL TEXT

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1.

Section 675.2 is added to the Insurance Code, to read:

675.2.

(a) On and after January 1, 2025, an admitted insurer licensed to issue homeowners' insurance policies shall issue a policy to a homeowner who has hardened their home against fire, regardless of the home's location. The insurer shall make conforming changes to its internet website and print materials on or before July 1, 2025.

(b) On or before January 1, 2024, the department shall promulgate regulations to define home hardening for purposes of subdivision (a).

SEC. 2.

Section 2033 is added to the Insurance Code, to read:

2033.

(a) The Wildfire Protection Grant Program is hereby created to help homeowners pay for costs associated with wildfire mitigation improvements.

(b) The department shall award grants of up to ten thousand dollars ($10,000) each to homeowners under the Wildfire Protection Grant Program.

(c) The department shall promulgate regulations to administer the Wildfire Protection Grant Program.

35

Susan Wengraf
Councilmember District 6

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Wengraf (Author), Councilmember Taplin (Co-Sponsor), Councilmember Bartlett (Co-Sponsor), Councilmember Hahn (Co-Sponsor)

Subject: Support for AB-1594 Firearms: Civil Suits

RECOMMENDATION

Adopt a Resolution in support of AB-1594 (Assembly Member Ting) which would allow gun manufacturers to be sued for creating a public nuisance if their failure to follow federal, state or local law caused injury or death or if the gun industry member engaged in unfair business practices.

Send the Resolution to Assembly Members Ting, Gipson, Ward and Wicks along with Senator Skinner and Governor Newsom.

FINANCIAL IMPLICATIONS

None

BACKGROUND

AB1594 authorizes private citizens harmed by illegal gun use to sue manufacturers, distributors and sellers of firearms. The bill is a direct response to the Texas scheme to insulate its abortion ban through a law authorizing private citizen suits against essentially anyone who helps a woman seek access to abortion.

Governor Newsom stated “if states can now shield their laws from review by the federal courts that compare assault weapons to Swiss Army knives, then California will use that authority to protect people’s lives, where Texas used it to put women in harm’s way.”

The bill is still in its very early stages, but as it stands in its current form, AB1594 proposes adding the following language to the California Civil Code: “A gun industry member shall have created or maintained a public nuisance, as defined in Section 3480, if their failure to follow federal, state, or local law caused injury or death or if the gun industry member engaged in unfair business practices.”

AB1594 will effectively permit lawsuits against members of the gun industry who failed to follow firearm laws, thereby creating and/or maintaining a public nuisance.

The Protection of Lawful Commerce in Arms Act ("the Act"), passed in 2005, generally protects members of the gun industry from being sued for damages a person experiences as a result of the misuse of firearms. However, the law does not protect against lawsuits brought as a result of a violation of state law.

As such, any member of the gun industry who breaks California laws will not be shielded by the Act and can be sued under AB1594 if their illegal act involving a firearm caused damages to an individual.

Gun violence is a public health crisis in the United States. A leading cause of premature death in the U.S.[1], Americans account for just 4% of the world's population but 35% of global firearm suicides[2]. On average, at least 200 Americans are non-fatally injured with a firearm each day. The majority of these injuries are gun assaults[3]. Gun homicides and assaults disproportionately impact historically underserved communities of color. Black Americans are 10 times more likely than white Americans to be murdered with a gun[4].

The City of Berkeley has a history of promoting gun safety. In early 2004, the Berkeley Police Department provided 1,100 free firearm safety kits to local residents through a partnership with Project ChildSafe[5]. The City Council supported Governor Newsom's "Safety for All" 2016 Ballot Initiative which included a series of gun reform measures[6]. Council adopted a Safe Storage of Firearms Ordinance, adding BMC Chapter 13.69[7], in November 2018, and in October 2021, adopted a Ghost Gun Ordinance[8] in order to eliminate non-serialized, untraceable firearms in the City of Berkeley.

AB-1594 aligns with Berkeley's gun safety goals by encouraging gun manufacturers to follow federal, state or local laws and to engage in fair business practices. If they don't, and someone is injured or killed by their gun, they can be sued for creating a public nuisance.

ENVIRONMENTAL SUSTAINABILITY
No direct impact on environmental sustainability.

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[1] https://www.apha.org/topics-and-issues/gun-violence
[2] Mohsen Naghavi, et al., "Global Mortality from Firearms, 1990–2016," *JAMA* 320, no. 8 (2018): 792–814.
[3] Based on three most recent years of complete data (2013, 2014, and 2016). Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, last accessed June 25, 2020, hcupnet.ahrq.gov.
[4] Centers for Disease Control and Prevention, Web-based Injury Statistics Query and Reporting System (WISQARS), "Fatal Injury Reports," last accessed June 24, 2020, https://www.cdc.gov/injury/wisqars. Calculations were based on five years of the most recently available data: 2014 to 2018.
[5] https://www.cityofberkeley.info/police/newsandpress/2004files/ChildSafe%20Gun%20Locks.html
[6] Safety for all
[7] Safe Storage Ordinance
[8] Ghost Gun Ordinance

<u>CONTACT PERSON</u>

Councilmember Wengraf	Council District 6	510-981-7160

Attachments:
1: Resolution
2: AB-1594

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

THE CITY OF BERKELEY SUPPORTS AB-1594

WHEREAS, Gun violence is a public health crisis and a leading cause of premature death in the United States; and

WHEREAS, Americans account for just 4% of the world's population but 35% of global firearm suicides: and

WHEREAS, Gun homicides and assaults disproportionately impact historically underserved communities of color. Black Americans are 10 times more likely than white Americans to be murdered with a gun; and

WHEREAS, The City of Berkeley has a history of striving for gun safety legislation to protect its residents, including adopting a Safe Storage of Firearms Ordinance in 2018 and a Ghost Gun Ordinance in 2021; and

WHEREAS, AB-1594 would further gun safety by allowing gun manufacturers to be sued for creating a public nuisance if their failure to follow federal, state or local law caused injury or death or if the gun industry member engaged in unfair business practices.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that it strongly supports AB-1594.

BE IT FURTHER RESOLVED that the Council appreciates the work of Assembly Members Ting, Gipson, Ward, Berman, Bloom, Levine and Quirk, and Senators Newman and Wiener for authoring AB-1594 and their efforts in reducing gun violence.

CALIFORNIA LEGISLATURE— 2021–2022 REGULAR SESSION

ASSEMBLY BILL

NO. 1594

Introduced by Assembly Members Ting, Gipson, and Ward
(Coauthors: Assembly Members Berman, Bloom, Levine, and Quirk)
(Coauthors: Senators Newman and Wiener)

January 03, 2022

An act to add Part 2.5 (commencing with Section 3450) to Division 4 of the Civil Code, relating to firearms.

LEGISLATIVE COUNSEL'S DIGEST

AB 1594, as introduced, Ting. Firearms: civil suits.

Existing law defines a public nuisance and provides that a public nuisance may be remedied by an indictment or information, a civil action, or abatement. Existing law also regulates the manufacture, sale, and marketing of firearms.

This bill would specify that a gun industry member has created or maintained a public nuisance, as defined, if their failure to follow federal, state, or local law caused injury or death or if the gun industry member engaged in unfair business practices.

Vote: majority   Appropriation: no   Fiscal Committee: no   Local Program: no

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Part 2.5 (commencing with Section 3450) is added to Division 4 of the Civil Code, to read:

PART 2.5. Civil Suits Relating to Firearms

3450. A gun industry member shall have created or maintained a public nuisance, as defined in Section 3480, if their failure to follow federal, state, or local law caused injury or death or if the gun industry member engaged in unfair business practices.

36

Susan Wengraf
Councilmember District 6

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Wengraf (Author), Councilmember Hahn (Author), Councilmember Bartlett (Co-Sponsor), Mayor Arreguin (Co-Sponsor)

Subject: 2022 Virtual Holocaust Remembrance Day Program: Relinquishment of Council Office Budget Funds from General Funds and Grant of Such Funds

RECOMMENDATION

Adopt a Resolution approving the expenditure of an amount not to exceed $500 per Councilmember, including $500 each from Councilmember Wengraf and Councilmember Hahn to support the City's Annual Holocaust Remembrance Day program with funds relinquished to the City's general fund. The relinquishment of funds from Councilmember Wengraf's, Hahn's, Bartlett's, and Mayor Arreguin's discretionary Council Office Budgets and all other Councilmembers who would like to contribute, allows the City of Berkeley to invite the community to the City's 19th Annual Holocaust Remembrance Day virtual program, created by the community with City Council support. In light of the vulnerability of many of the attendees, and the continuing threat of the COVID pandemic, this year's program will be held virtually on April 28, 2022.

FINANCIAL IMPLICATIONS

No General Fund impact: up to $500 is available from contributing Councilmember's Council Office Budget discretionary accounts.

BACKGROUND

The City of Berkeley's Annual Holocaust Remembrance Day program has been supported by the City Council since it was initiated by former Councilmember Kriss Worthington in 2002. The event has occurred annually, except in the year 2020 when the pandemic hit without enough time to pivot to a virtual program. Berkeley's Holocaust Remembrance Day has become a treasured event for both Holocaust Survivors, family members and the Bay Area community as the only secular, city-sponsored program in the region. The community program invites attendees to honor those who perished in the Holocaust and those you survived. With rising hate incidents and hate crimes in our region and nation-wide, it is critical that we hear the stories of survivors of the Holocaust and re-affirm our resolve to never forget.

We are asking for The Mayor and Councilmember's generous support to continue the legacy of the City of Berkeley's Annual Holocaust Remembrance Day in 2022.

ENVIRONMENTAL SUSTAINABILITY

No impact

CONTACT PERSON

Councilmember Wengraf	Council District 6	510-981-7160

Attachment: 1. Resolution

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

AUTHORIZING THE EXPENDITURE OF SURPLUS FUNDS FROM THE OFFICE EXPENSE ACCOUNTS OF THE MAYOR AND COUNCILMEMBERS FOR A GRANT TO PROVIDE PUBLIC SERVICES FOR A MUNICIPAL PUBLIC PURPOSE

WHEREAS, Councilmember Wengraf and Councilmember Hahn have surplus funds in their office expenditure accounts and will contribute $500 each, and invite the Mayor and other Councilmembers to join them in contributing; and

WHEREAS, a California nonprofit tax-exempt corporation, The Jewish Community Center, serves as the fiscal sponsor of the Holocaust Remembrance Day program and will receive funds in an amount up to $500 per contributing Councilmember's discretionary account; and

WHEREAS, the provision of such services would fulfill the municipal public purpose of providing a community program supporting Holocaust survivors, community recognition and education about the Holocaust and unity among Berkeley residents. The grants will provide funds to produce the virtual event.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that funds relinquished by the Mayor and Councilmembers from their Council Office Budget, up to $500 per office, shall be granted to the Jewish Community Center to fund the City of Berkeley's virtual 19th Annual Holocaust Remembrance Day program on April 28, 2022.

CITY COUNCILMEMBER RIGEL ROBINSON DISTRICT 7

37

CONSENT CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Rigel Robinson (Author) & Councilmember Sophie Hahn (Co-Sponsor)

Subject: Budget Referral: Telegraph-Channing Garage Elevator Repairs

RECOMMENDATION

Refer $3.6M to the June 2022 budget process for urgent repairs to the Telegraph-Channing Garage elevators. Additionally, refer to the City Manager to pursue all available funding opportunities for this project, including American Rescue Plan Act funds.

BACKGROUND

The Telegraph-Channing Mall is a City-owned property in the heart of the Telegraph district, with commercial space, garage parking, public restrooms, and two elevator shafts. The garage's elevators are past their useful life, have experienced periodic water intrusion, and are generating almost daily requests for service to address their unsatisfactory performance. The required renovations include interior and exterior upgrades, mechanical equipment and electrical system overhauls, and sealing of the elevator shaft from water intrusion.

The City's Public Works Department has completed 50% design and developed a project cost estimate of $3.6M. However, the project continues to be on hold until funding becomes available, meaning that the unreliable elevators will continue to impact the commercial tenants and the visitors who park in the garage.

The Friends of the Berkeley Public Library, operator of the Channing Bookstore in the garage, has expressed particular concern about the condition of the elevators. Community members and volunteers regularly bring book donations to the store and are forced to carry heavy boxes of donations down stairs or ramps when the elevators are out of service.

The current state of the elevators is an ADA issue and a liability for the City. Access to the garage is compromised, especially for seniors and disabled people, and there is the potential for people to get stuck in the elevators when they break down. This has occurred on at least one occasion. Therefore, this is an urgent situation that must be addressed by the City as soon as fiscally possible.

FINANCIAL IMPLICATIONS
$3.6M for design and construction, accounting for escalating costs and existing supply chain issues. Potential funding sources include the General Fund and American Rescue Plan Act funds, given that the Off Street Parking Lot Fund is not a viable funding source due to the decline in parking revenue. Council should also take into consideration the current costs of frequent service requests borne by the City.

ENVIRONMENTAL SUSTAINABILITY
None.

CONTACT PERSON
Councilmember Rigel Robinson, (510) 981-7170
Angie Chen, Legislative Assistant

Office of the City Manager

38

ACTION CALENDAR
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Eleanor Hollander, Economic Development Manager

Subject: Berkeley Economic Dashboards Update

INTRODUCTION

The Office of Economic Development (OED) is pleased to present the Citywide Economic Dashboard update for December 2021 (Attachment 1), and the updated Commercial District Dashboards (Attachment 2).

CURRENT SITUATION AND ITS EFFECTS

In the past five years, Berkeley has experienced economic growth and pandemic impacts comparable with that of the Bay Area region. By a variety of indicators, Berkeley's economy was on track for continued healthy performance in the beginning of 2020. Due to the rapidly spreading COVID-19 virus, on March 17, 2020, the City of Berkeley, along with the health officers of six Bay Area counties issued health orders for residents to stay at home ("Shelter-in-Place") and for all but a few essential businesses to cease operations. In the past two years, the acute phase of the pandemic has receeded; all businesses are permitted to operate, and the use of effective treatments and vaccines to prevent disease have become widespread and available to all those over age 5.

In 2020, the halting of economic activity had widespread impacts on the Berkeley economy, resulting in significant revenue reductions and job losses in sectors like performing arts, hospitality, and retail, while others, including healthcare and biotechnology, saw new investment and opportunities for growth. 2021 has seen these trends continue, as well as the fruits of a number of recovery efforts and government relief packages come to bear. This dashboard includes the latest citywide data available through the fourth quarter of 2021, with much of it collected through on-the-ground fieldwork.

Key findings include:

- **Pandemic recovery brought thousands back to work.** After nearly tripling between Dec. 2019 and Dec. 2020, the countywide unemployment rate dropped from 7.6% in Dec. 2020 to 4.3% in Dec. 2021. Most of the employment increases happened in Berkeley sectors like tourism & hospitality (especially lodging, food

& beverage, and arts & cultural industries); and personal & professional service industries (e.g. gyms and fitness studios, salons, employment services). The Berkeley-specific unemployment rate (3.6%) is 0.7% lower than that of Alameda Country.

- **Growth opportunities abound in Berkeley's "innovation sector".** More than 400 Berkeley-based tech, biotech, R&D and other STEM industry businesses were either able to adapt to having a remote workforce or continued work in medical, life science, and health manufacturing facilities, with many returning to work in-person or in a hybrid format. In 2021, Berkeley startups raised more than $1.4 billion through venture, angel-backed financing and convertible securities and 10 Berkeley companies received nearly $9 million in federal and state grants for Research & Development (R&D). More than a third (35%) of Berkeley innovation companies develop software and close to a third (31%) develop health-focused solutions through biotechnology & healthcare technologies. The latter industries continued to witness tremendous global investment in 2021, including Caribou Biosciences' initial public offering (IPO) on the NASDAQ stock exchange, which raised proceeds of approximately $350 million. Clean technologies which advance solutions to support environmental sustainability and address climate change also grew in 2021: they comprise 13% of Berkeley's innovation sector, 25% more than in 2020.

- **Office vacancy rates in Berkeley increased but remained lower than in neighboring cities**. Overall office availability in Berkeley more than doubled from Q4 2020 (5.3%) to Q4 2021 (11.1%). For context, the East Bay office market area availability average during this same period was 17.3%. Though demand for office space has lessened due to the pandemic, Berkeley's inventory continues to remain low; asking office rents in the City average $3.49 per square foot, which is up by approximately $0.04 cents per square foot from the same period last year. The only other East Bay city with an availability rate lower than Berkeley is Alameda (8.2%).

- **Average citywide ground floor commercial vacancy rates increased, slightly exceeding levels associated with normal market churn.** Based on field data collected in September-November 2021, the citywide ground floor commercial vacancy rate had increased to 8.3%, an increase of 1.4% since Q3 2020 and 2.9% since Q3 2019. The Downtown Berkeley and San Pablo districts have experienced the largest increases in their vacancy rates since 2020, with increases of 5.8% and 3.1%, respectively. Vacancy rates decreased in many of Berkeley's other commercial districts, as all food, personal service, and retail operations returned to traditional 'in-person' service. Among Berkeley's commercial districts, the largest year-over-year decreases in vacancy rates were in the Telegraph, Neighborhood Commercial (C-N), and Solano districts (4.6%, 4.1%, and 2.3% respectively). Downtown Berkeley, Telegraph, and the Elmwood have the highest vacancy rates overall (all above 10%), likely due to their dependence on foot traffic associated with UC Berkeley students, who were, in large part, learning remotely throughout the year.

- **Occupancy by office and other-non retail service businesses, as a share of total ground floor square footage, continues to decline.** As personal services are still feeling the effects of the pandemic and many workplaces have permanently switched to hybrid or remote work, the share of ground floor spaces occupied by office-based businesses, personal services industries, and other non-retail uses have declined. Between Q3 2020 and Q3 2021, “Office and Non-Retail uses” (which includes service businesses) as a percentage of total commercial square footage declined, from 16.5% to 12.5%. The percentage of ground floor commercial square footage occupied by Retail and Food & Beverage services between 2020 and 2021 remained relatively constant, at 37% and 12%, respectively. Retail’s share of ground floor occupancy is significantly lower than in 2016, when it occupied 42% of total ground floor commercial space.

- **The City of Berkeley’s sales tax revenue shows a slow but steady recovery from the COVID-19 pandemic.** Berkeley’s total annual sales tax revenues increased by 5.0% from the four quarters from Q4 2020 to Q3 2021. For context, Alameda County (including all 14 cities) reported an annual sales tax increase of 12.5% over the same period and the State of California witnessed a 17.6% increase. In the second quarter of 2021, (April to June) the Retail and Food & Beverage subsectors were the largest contributors to the city’s sales tax revenue at 51.1% and 24.8% respectively. Overall, in Q2 2021, sales tax collection increases were present in every sector in Berkeley, due to the roll out of the COVID-19 vaccine to the general public, corresponding business reopenings, and the return to full capacity operations.

- **Housing costs in Berkeley remain high for buyers and renters, consistent with the Bay Area region overall.** As of Q4 2021, Berkeley’s median home sale price ($1.42M) was higher than its neighboring communities, (save for Piedmont at $1.90M), and driven by an increased demand for larger homes with accessible outdoor space and limited inventory. As of Ocotber 2021, Berkeley’s median rental price for all sizes and types of units had increased by 3.1% from the same period last year to a median of $3,196 per month. Berkeley’s median rental home prices for studio apartments (including rent-controlled units) have remained relatively stable at $1,591 per month (a $50 increase from the same period in 2020).

- **The City of Berkeley continues to use a wide range of approaches to support local economic recovery.** From cash grants to communications on the impacts of the latest health orders to holiday marketing support, the City continues to deploy all the tools in its toolkit to support businesses and enable sustaible economic recovery from the acute phase of the pandemic. Highlights included the distribution of American Rescue Plan Act (ARPA) relief funds to the arts and hospitality industries, increased technical assistance for the low-interest resiliency loan fund established in 2020, creating a path to permanence for parklets and outdoor commerce, and the #DiscoveredinBerkeley and #BerkeleyHolidays marketing campaigns, among a variety of other targeted business outreach, communications, and technical assistance.

BACKGROUND

Since 2015, OED has consistently released two companion publications, the *Citywide Economic Dashboard* and *Commercial District Dashboards*, which analyze a wide variety of economic trends and indicators in Berkeley. Attached to this report is the updated version of the Citywide Economic Dashboard and Commercial District Dashboard for December 2021 (Attachments 1 and 2). These dashboards are designed to make current economic and community data and information more accessible to Council, City staff, and community stakeholders. Providing this information also allows investors to evaluate potential markets and provides vital information for policy-makers to better direct different social and economic programs. The reports provide updated information through Q4 2021. OED staff will continue to update these dashboards on an annual basis, as staffing allows, and has posted the most recent version on the City's website at: https://www.cityofberkeley.info/oed/reports/.

To produce these publications, OED staff compiled and analyzed a wide variety of data sources including the Monthly Labor Force Data (Labor Market Information, California Employment Development Department), WARN notices provided to the Alameda County Workforce Development Board, commercial real estate data (Newmark Cornish & Carey), housing market data (Berkeley Rent Stabilization Board, MLS, RentCafe, Redfin) and sales tax data (MUNIServices). Staff also analyzed data from City databases including business licenses, building permits and planning permits, and City publications such as rent board reports and the housing pipeline report. Information on Berkeley startups and other innovation companies was obtained from Pitchbook, Crunchbase, LinkedIn, the U.S. Small Business Administration, tech industry news sources, and direct communications with businesses or the Berkeley Startup Cluster's partners including UC Berkeley, the Berkeley Lab, and Berkeley's startup incubators and accelerators such as SkyDeck and Cyclotron Road. Finally, in the third and fourth quarters of 2021 OED staff updated its field occupancy survey of ground floor commercial spaces in Berkeley commercial districts (Attachment 2).

These publications support the City's Strategic Plan, advancing our goal *to be a customer-focused organization that provides excellent, timely, easily-accessible service and information to the community*.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS
Many of the City's environmental sustainability goals are inextricably tied to the overall health of the City's economy. Staff believes that the continued pursuit of sustainable economic goals, represents a strength and source of resilience for Berkeley.

POSSIBLE FUTURE ACTION
OED staff will, as directed by Council through previous and future referral items, partner with other City departments and community partners to implement programs and policies that foster a dynamic, sustainable, and locally-based economy, and assist in economic recovery throughout 2022 and beyond.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION
Actions that facilitate increased economic activity will increase revenues related to sales tax and property tax, and thus have a positive fiscal impact on the city.

CONTACT PERSON
Eleanor Hollander, Economic Development Manager, (510) 981-7536
Elizabeth Redman Cleveland, Chief Strategist, Sustainable Growth (510) 981-7532

Attachments:

1: Citywide Economic Dashboard
2: Commercial District Dashboards

City of

BERKELEY

2021 Economic Dashboard

Office of Economic Development

Table of Contents

CITYWIDE ECONOMIC DASHBOARD

Employment Activity
by industry sector - employment

Percent change in employment by sector (Nov. 2020 – Nov. 2021)

East Bay Industry Sector	% Change
Arts, Entertainment & Recreation	31%
Leisure & Hospitality	16%
Accommodation & Food Services	14%
Professional, Scientific & Technical Services	12%
Administrative & Support & Waste Services	5%
Transportation & Warehousing	4%
Health Care & Social Assistance	3%
Mining and Logging	0%
Manufacturing	-1%
Retail Trade	-1%
Wholesale Trade	-1%
Construction	-1%
Government	-2%

Source: Alameda County Workforce Development Board, Labor Market Information (LMI-EDD) for East Bay.

Job Recovery Amidst the Pandemic

Between December 2020 and December 2021, the total number of jobs located in the East Bay increased by **38,900** or **3.6%**. The sectors with the highest percent growth in employment are those that were closed for several months during the early months of the pandemic or that had to operate at reduced service levels, such as: Arts, Entertainment & Recreation; Leisure & Hospitality; and Accommodation & Food Services.

The Alameda County unemployment rate fell to **4.3% in** December 2021 after reaching **7.6%** a year prior, though it still hasn't returned to the pre-pandemic unemployment rate of **2.6%** (December 2019). Berkeley's unemployment rate is even lower, at **3.6%**, with a labor force of **59,900**.

Source: State of California Employment Development Department (EDD)

Employment Activity
by industry sector - employment

Top 25 Berkeley Employers

Company	Sector
Ansys, Inc	Software
Bayer Corp	Life Sciences
Berkeley Bowl Produce	Food & Beverage
Berkeley Cement Inc	Contractor
Berkeley Unified School District	Education
Callisto Publishing	Media
City of Berkeley	Government
Foresight Mental Health	Healthcare
Genji Pacific LLC	Food & Beverage
Insperity Peo Services L P	Business Services
Kaiser Permanente Medical Group Inc	Healthcare
Lifelong Medical Care	Healthcare
Meyer Sound Laboratories, Inc	Manufacturing
OC Jones & Sons	Contractor
Peralta Community College District	Education
Safeway Inc	Food & Beverage
Siemens Corporation	Manufacturing
Sutter Bay Hospitals	Healthcare
Sutter Bay Medical Foundation	Healthcare
Target Corporation	Retail
The Wright Institute	Education
U.S. Postal Service	Government
University of California	Education
Whole Foods Market California Inc	Retail
YMCA of the Central Bay Area	Recreation

Source: State of California Employment Development Department (EDD)

The entrance to Bayer's Berkeley campus
Credit: Berkeleyside

University of California, Berkeley
Credit: University of California, Berkeley

Of Berkeley's top 25 Berkeley employers, 4 are in the Education sector, including UC Berkeley which is one of the city's main economic engines. 5 are in the Healthcare sector, reflecting the various large medical employers in the city. There are also a few large private sector corporations operating out of Berkeley, notably Bayer, which recently executed a new $33M long-term development agreement with the city. Bayer plans to add 1,000 new jobs to the city over the term of the agreement. The top Berkeley employers operate in a variety of different sectors (12), reflecting Berkeley's diverse sources of economic prosperity.

Employment Activity
by industry sector - hospitality

In 2021, Berkeley hospitality industries adapted to comply with evolving COVID-19 health orders. New hotels opened and many tourism businesses reemerged, albeit with modifications.

The Lobby of the Graduate Hotel on Durant Avenue
Credit: Kelly Sullivan, Berkeleyside - #DiscoveredinBerkeley

Tourism & Lodging

As people began traveling again, Leisure and hospitality companies began hiring. Jobs in these industries in Alameda County **increased by 15,800** in 2021. New hotels like the Aiden by Best Western on University Ave. and Residence Inn by Marriott in Downtown Berkeley show a positive step towards recovery and prospects for Berkeley's tourism industry to eventually exceed pre-pandemic levels.

The rooftop at the new Aiden by Best Western Hotel on University Avenue
Credit: Kelly Sullivan, Berkeleyside - #DiscoveredinBerkeley

Food & Beverage Services

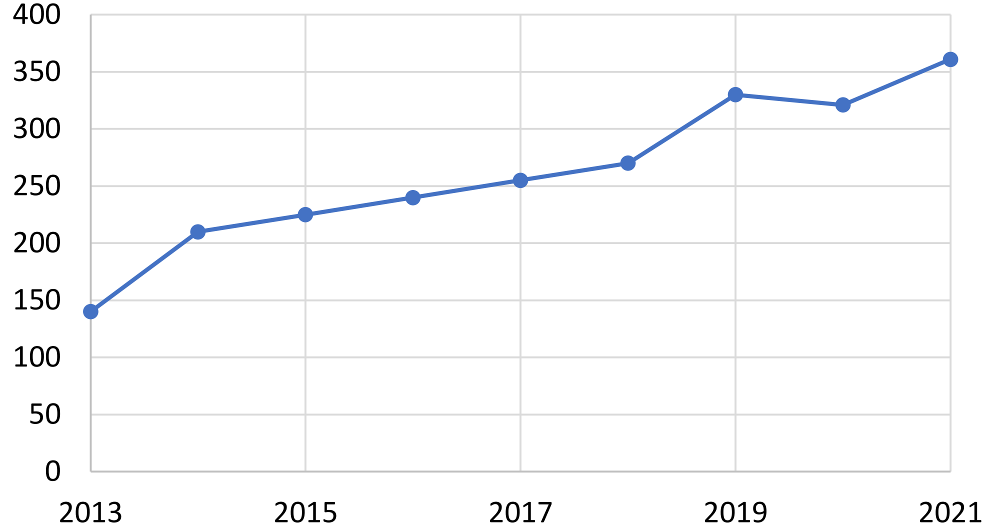
Accommodation and food service jobs in Alameda County **went up by 12,400** in 2021. As people got vaccinated and restaurants re-opened for indoor dining, one of the sectors hardest hit by the pandemic started to bounce back. Adaptations made at the start of the pandemic, such as the construction of parklets to accommodate outdoor dining, have remained, giving restaurants the potential to ultimately serve more customers and contribute to lively, vibrant streets.

Source: State of California Employment Development Department (EDD)

Outdoor commerce and dining installations like the one at Imm Thai Street Food in Downtown have become widespread since COVID limited indoor dining opportunities. *Credit: Kelly Sullivan, Berkeleyside - #DiscoveredinBerkeley*

Employment Activity
by industry sector – startups & innovation businesses

of Berkeley startups*



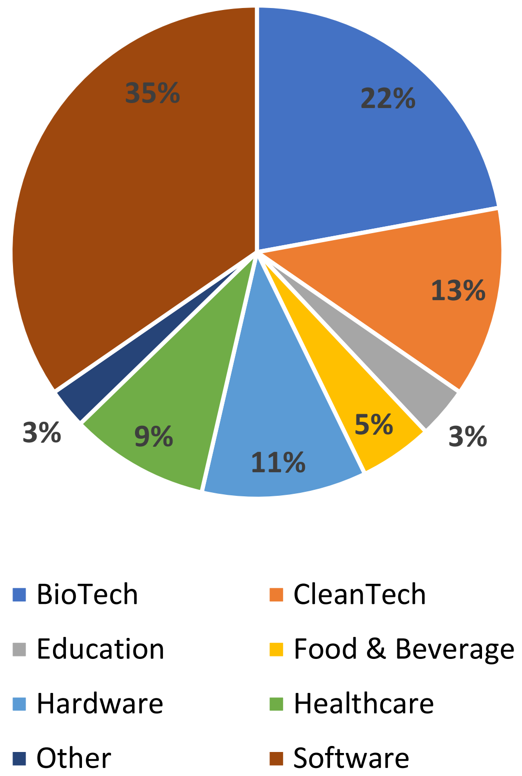
Source: City of Berkeley Office of Economic Development (OED), UC Berkeley IPIRA

*Companies defined as startups are for-profit businesses that sell innovative technology products or services OR substantively use innovative technologies to develop and manufacture their products or provide their services AND are developing repeatable and scalable business models that aren't yet profitable.

In 2021, 66 Berkeley innovation companies raised **$1.4 billion** of funding through venture capital, angel-backed financing, and convertible securities. They also brought in federal and state research & development (R&D) grants worth **$9 million**.

Of more than 400 Berkeley innovation companies citywide, Software is the largest component (35%). BioTech and Healthcare comprise nearly a third (31%) and CleanTech is also a growing component (representing 13% of the total in 2021, up from 9% in 2020.)

Innovation Companies by Industry Category

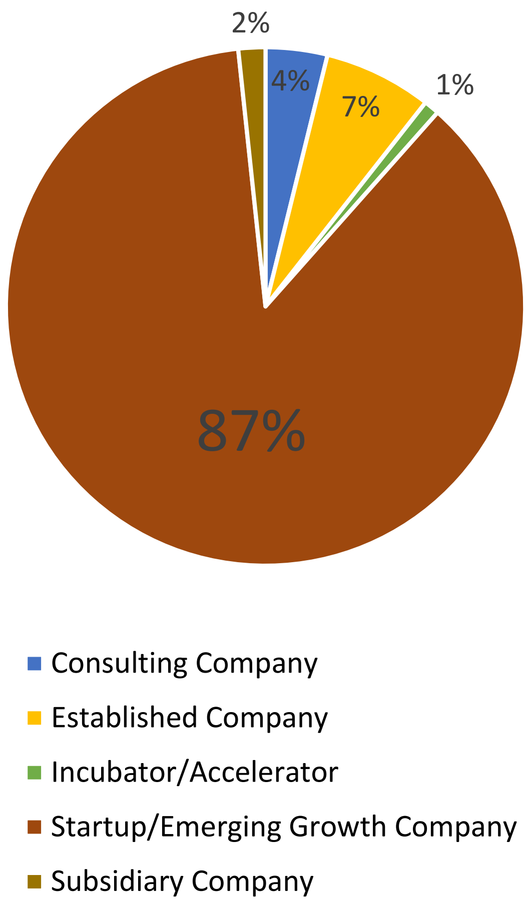


Source: OED, Berkeley Start Up Cluster

Employment Activity

by industry sector – startups & innovation businesses

Innovation Company by Growth Stage



Berkeley SkyDeck

Bakar BioEnguinity Hub

Activate Berkeley at Cyclotron Road

The vast majority (nearly 87%) of Berkeley innovation companies are relatively early stage, of the type you can find in the city's many coworking spaces, accelerators and incubators. The others are either established (i.e. publicly traded, profitable or in the STEM industry for a number of years), consulting businesses, or other innovation ecosystem-supporting accelerators or incubators like SkyDeck or Activate. These spaces, in conjunction with UC Berkeley and the Berkeley Lab's numerous innovation & entrepreneurship resources continue to make Berkeley a global startup hub.

Berkeley Innovation Sector 2021 Highlights

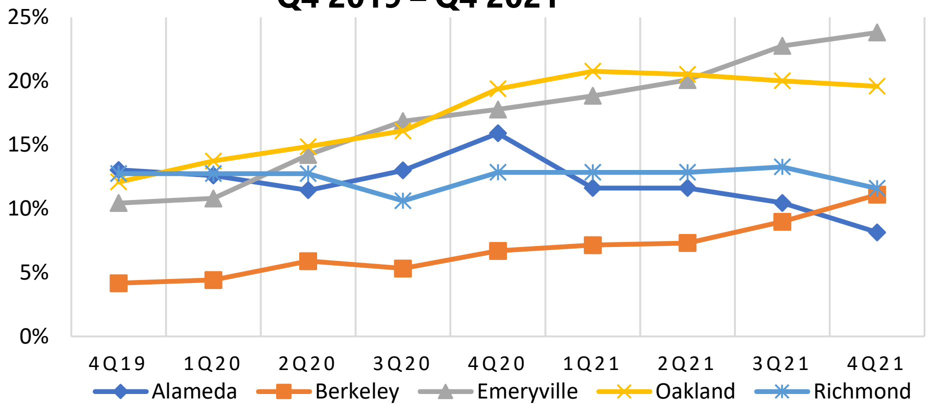
- Caribou Biosciences raised ~$350M through an IPO on the NASDAQ
- MeliBio was listed in Time Magazine's *100 Best Inventions of 2021*
- Upside Foods opened a new facility to scale their production of cultured meat

Commercial Activity
Office trends & transactions

Q4 2021 Office Market, Berkeley	Indicators
Total Inventory	3,428,875 SF
Under Construction	0 SF
Availability Rate	11.1%
Qtr Gross Absorption	30,342 SF
Qtr Net Absorption	-73,008 SF
YTD Net Absorption	-150,930 SF
Average Asking Rent	$3.49 / SF

Source: Newmark Cornish & Carey, 4Q21 Greater Oakland Office Market Report

Office Availability, East Bay Cities
Q4 2019 – Q4 2021



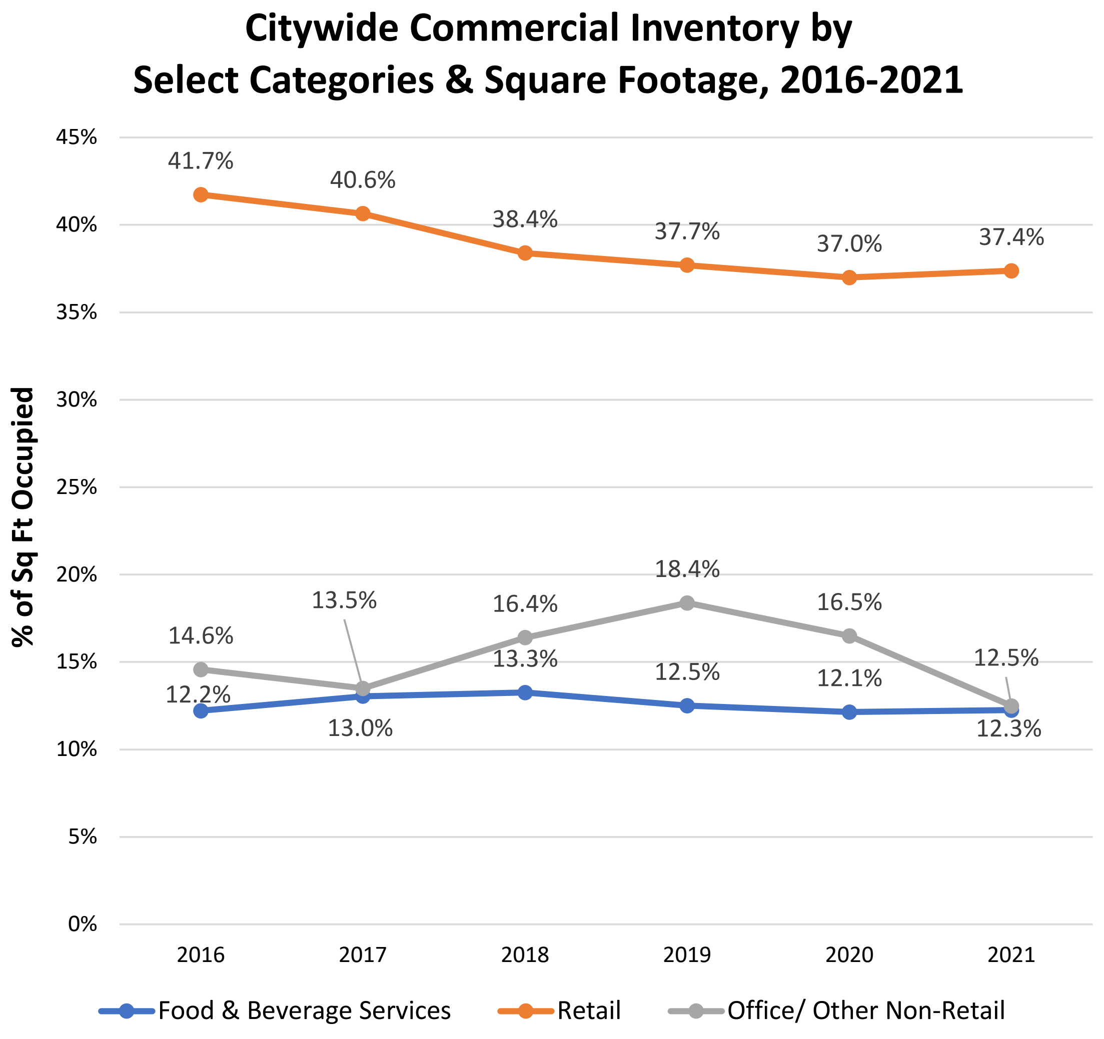
Source: Newmark Cornish & Carey, 4Q21 Greater Oakland Office Market Report

New Developments for R&D

Bakar Labs (2630 Bancroft Way, Berkeley, CA) in the Bakar BioEnginuity Hub on UC Berkeley's campus is the newest QB3 incubator, with space for 80 life science companies. QB3 is the University of California's hub for innovation and entrepreneurship in life science. Bakar Labs opened in late 2021 and hosts entrepreneurs tackling the world's most important challenges in the site previously occupied by the Berkeley Art Museum & Pacific Film Archive (BAMPFA).

theLAB Berkeley by SteelWave (2222-45 5th St & 2229-33 4th St) is a newly refurbished space established to be a magnet for the innovative technology and life sciences sectors. Spread across 3 buildings, theLAB offers laboratory and office spaces in a modern space fostering collaboration.

Commercial Activity
Commercial trends & transactions



Source: OED, Q3 2021

Feeling the Effects of the Pandemic

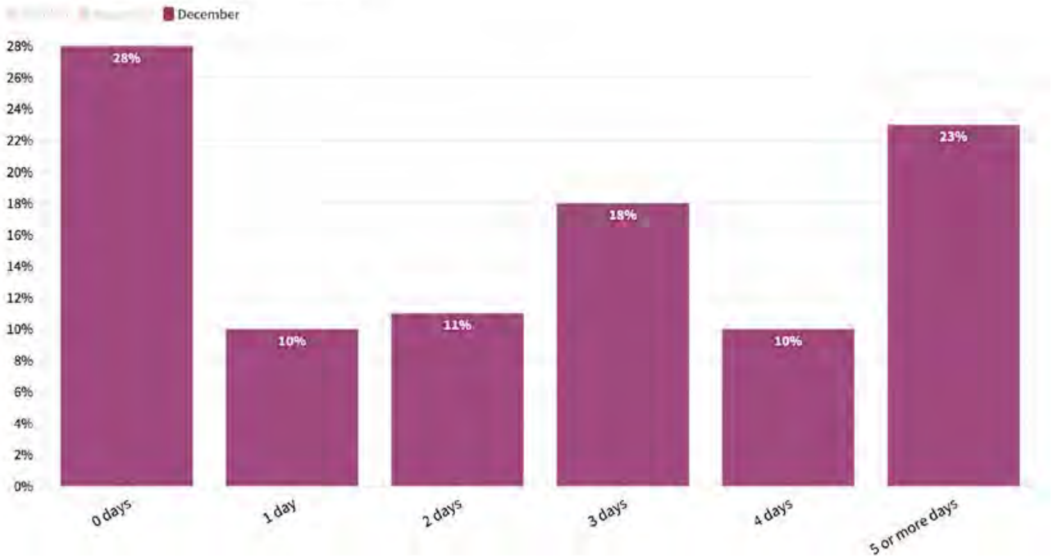
In the last year, **Retail and Food & Beverage industries slightly increased their footprint** in Berkeley, based on commercial occupancy by square foot. Different local and federal COVID relief programs for these industries, as well as the City's outdoor commerce and dining permits, likely contributed to these industries' real estate holdings remaining relatively constant throughout the pandemic.

On the other hand, occupancy rates for Office/Other Non-Retail businesses (which includes service businesses) have **decreased by 4%**. Personal services businesses are still feeling the effects of the pandemic, and many office-based businesses have given up their office or switched to a hybrid workplace model.

Commercial Activity

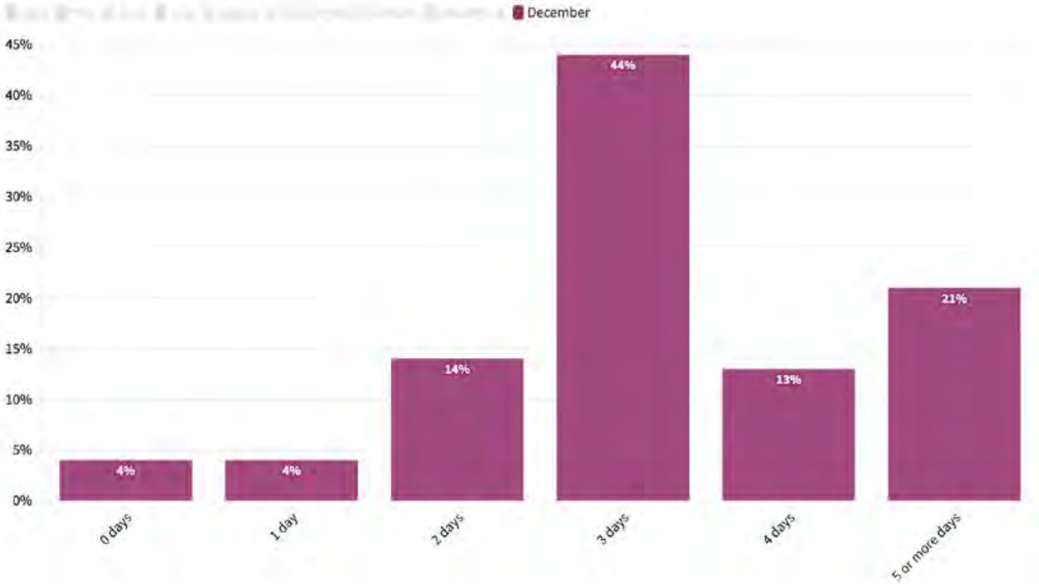
Commercial trends & transactions

Right now, what is your best estimate at the frequency your Bay Area workforce comes to the workplace each week?
Percentages are averaged across responses.



Source: Bay Area Council Employer Network Poll - December 2021

Once the pandemic is behind us, how many days per week do you expect your typical employee will come to the workplace?



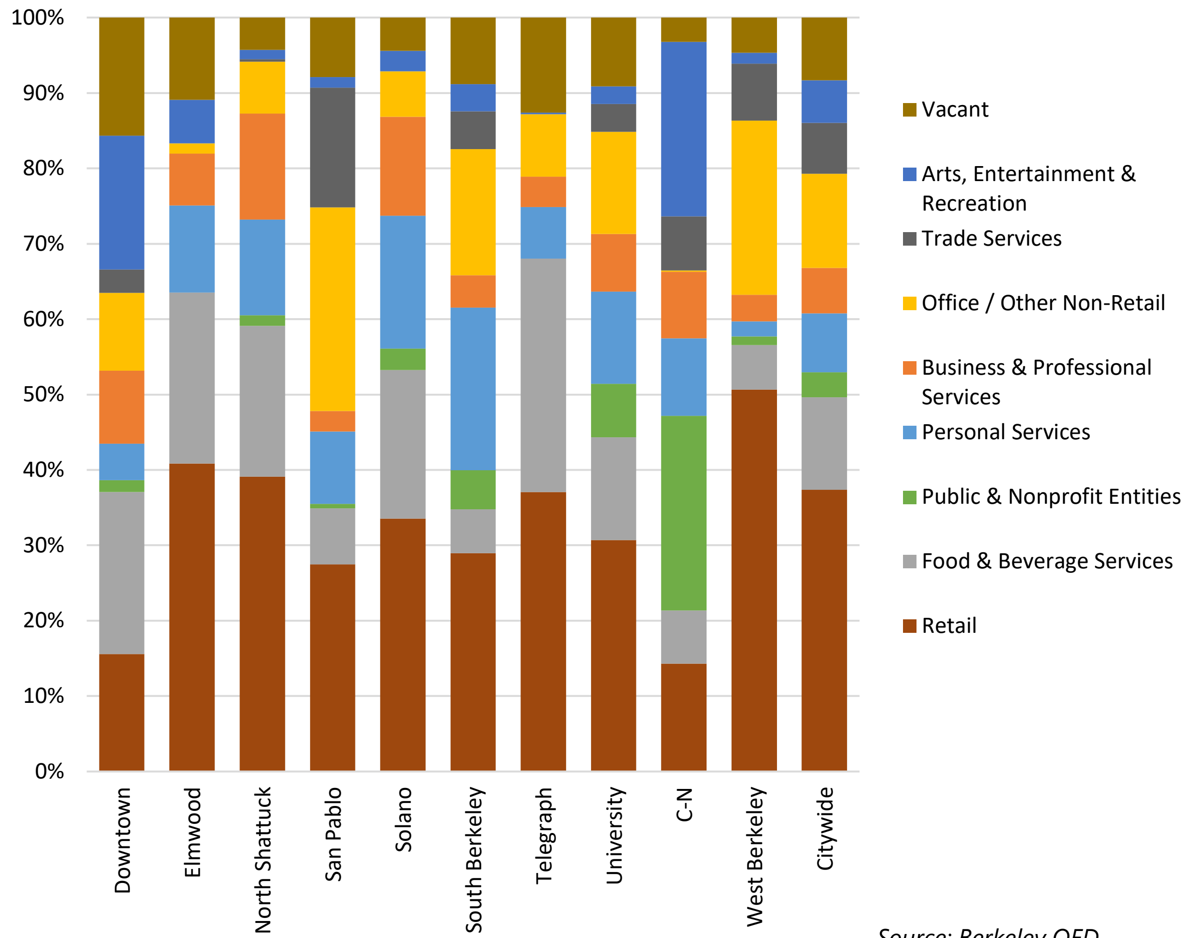
Source: Bay Area Council Employer Network Poll - December 2021

A December 2021 Bay Area Council survey of Bay Area Employers found that the majority of workers no longer come into the workplace every day, and 28% don't come into a workplace at all. Even once the pandemic is over, most employers don't expect employees to come in every day: 44% expect employees to come in 3 days per week. The survey results highlight a trend towards remote work that will extend beyond the pandemic period and impact how Berkeley and Bay Area office spaces are used and organized.

Commercial Activity

Commercial districts & vacancy rates

Ground Floor Commercial Occupancy By Category, 2021 Q3



Source: Berkeley OED

Citywide, the ground floor commercial vacancy rate has increased to **8.3%***, an increase of 1.4% since Q3 2020. Downtown Berkeley and the Telegraph districts have experienced the largest increases in vacancy during the pandemic.

Vacancy Rates by District, Calculated by Square Footage, 2016-2021

District	2016	2017	2018	2019	2020	2021
Downtown	4.7%	4.6%	3.1%	5.1%	9.9%	15.7%
Elmwood	1.5%	5.4%	7.3%	7.3%	10.9%	10.9%
North Shattuck	2.6%	0.4%	1.7%	0.7%	4.3%	4.3%
San Pablo	5.9%	5.5%	4.9%	4.6%	4.8%	7.9%
Solano	7.5%	4.8%	4.1%	2.6%	6.7%	4.4%
South Berkeley	8.2%	9.6%	9.7%	7.6%	10.1%	8.8%
Telegraph	5.1%	7.1%	7.9%	4.4%	17.2%	12.6%
University	14.2%	12.0%	11.0%	7.8%	11.0%	9.1%
Neighborhood Commercial (C-N)					7.3%	3.2%
West Berkeley	8.8%	1.9%	3.7%	5.8%	3.7%	4.7%
Citywide Avg.	**6.5%**	**4.6%**	**5.0%**	**5.4%**	**6.9%**	**8.3%**

*Typical commercial district storefront vacancy rates range from 4-8% due to natural market churn. The high vacancy rate in Q3 2021 can be attributed to the effects of the COVID-19 pandemic with many businesses not renewing their leases facing economic downturn.

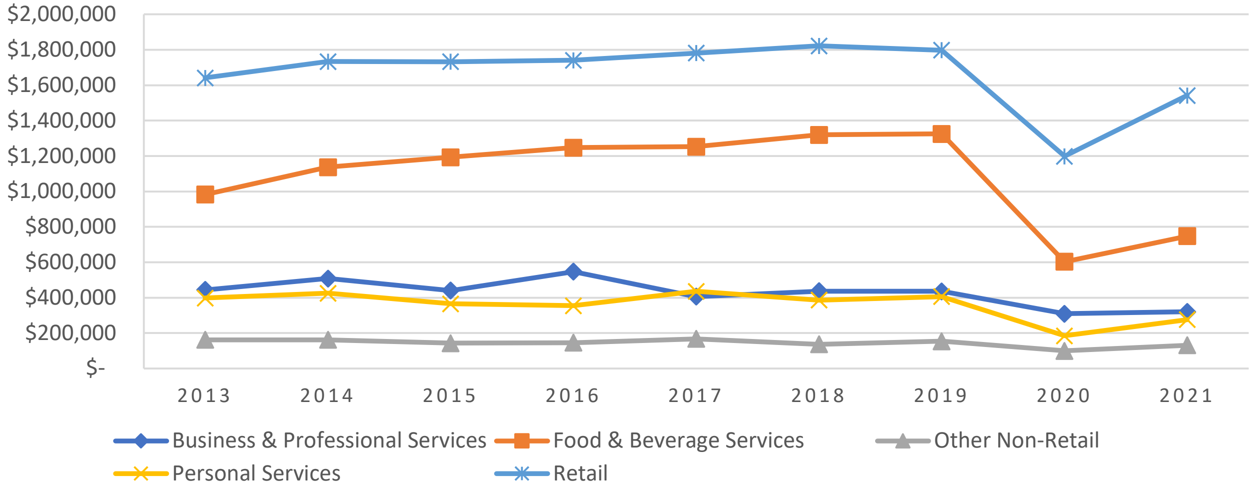
Source: Berkeley OED

Commercial Activity

Sales tax revenues – recovering amidst the pandemic

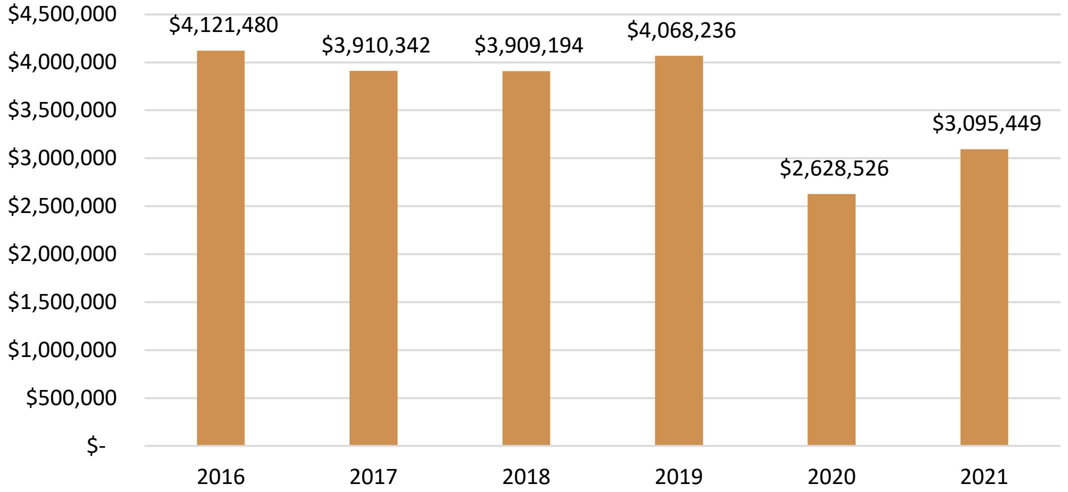
Total Annual Sales Tax Revenue - Past 4 Quarters	Q4 2019- Q3 2020	Q4 2020- Q3 2021	Change
City of Berkeley	$16,355,379	$17,179,289	5.0%
Alameda County (total including cities)	$328,424,125	$369,540,764	12.5%
State of California	$7,050,811,392	$8,332,085,544	17.6%

Berkeley Sales Tax Revenues (Q2) by Business Category



Source: MuniServices, Quarter 2 (Apr-June) Collections 2016 to 2021

Total City of Berkeley Q2 Sales Tax Revenues

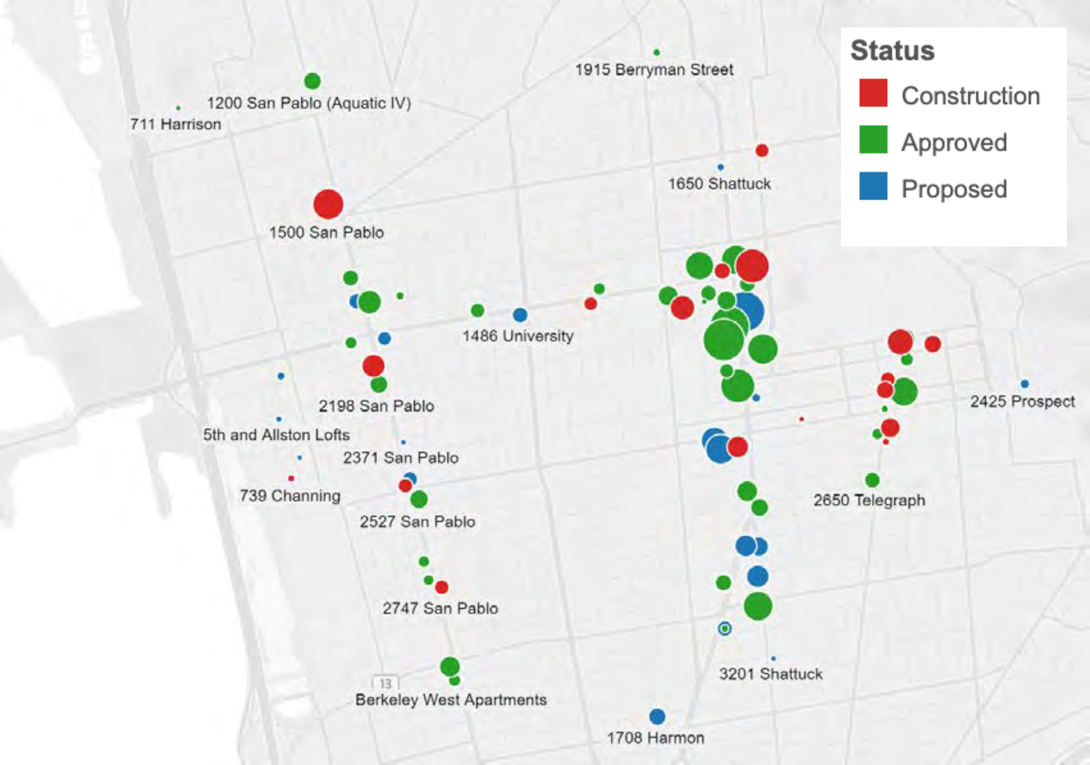


Source: MuniServices, Quarter 2 (Apr-June) 2016 to 2021, Nominal Values

In Q2 2021, the *Retail* subsector was the largest contributor to the city's sales tax revenue (51.1%), with *Food & Beverage* second (24.8%). As vaccines became available to the greater public in early 2021, most of the sectors impacted by the pandemic showed signs of recovery, with an increase in sales tax collection in Q2 2021 (up 26% vs Q2 2020) compared to the decrease in Q2 2020 (-42% vs Q2 2019). The increase in Q2 sales tax collection was largely due to significant increases in the *Food and Beverage* sector (up 24.0% vs Q2 2020), *Retail* (up 28.6%), and select sub-categories in the *Personal Services* sector*, i.e. Automotive Repair* and *Salons* (up 50.0%*).*

Development & Housing
Construction & pipeline

Berkeley Multi-Family Residential Developments, 2021



Housing Development Pipeline

From 2015 to 2020, permits for 2,943 housing units have been issued. Data from 2021 is not yet available, but when permits from 2021, 2022, and 2023 are factored in, Berkeley will "far exceed" the state mandated goal for total units permitted for 2015 to 2023.

Source: Map Red Oak Realty, updated January 2022, Text, SF Chronicle, February 15, 2022

Pipeline Project Highlights

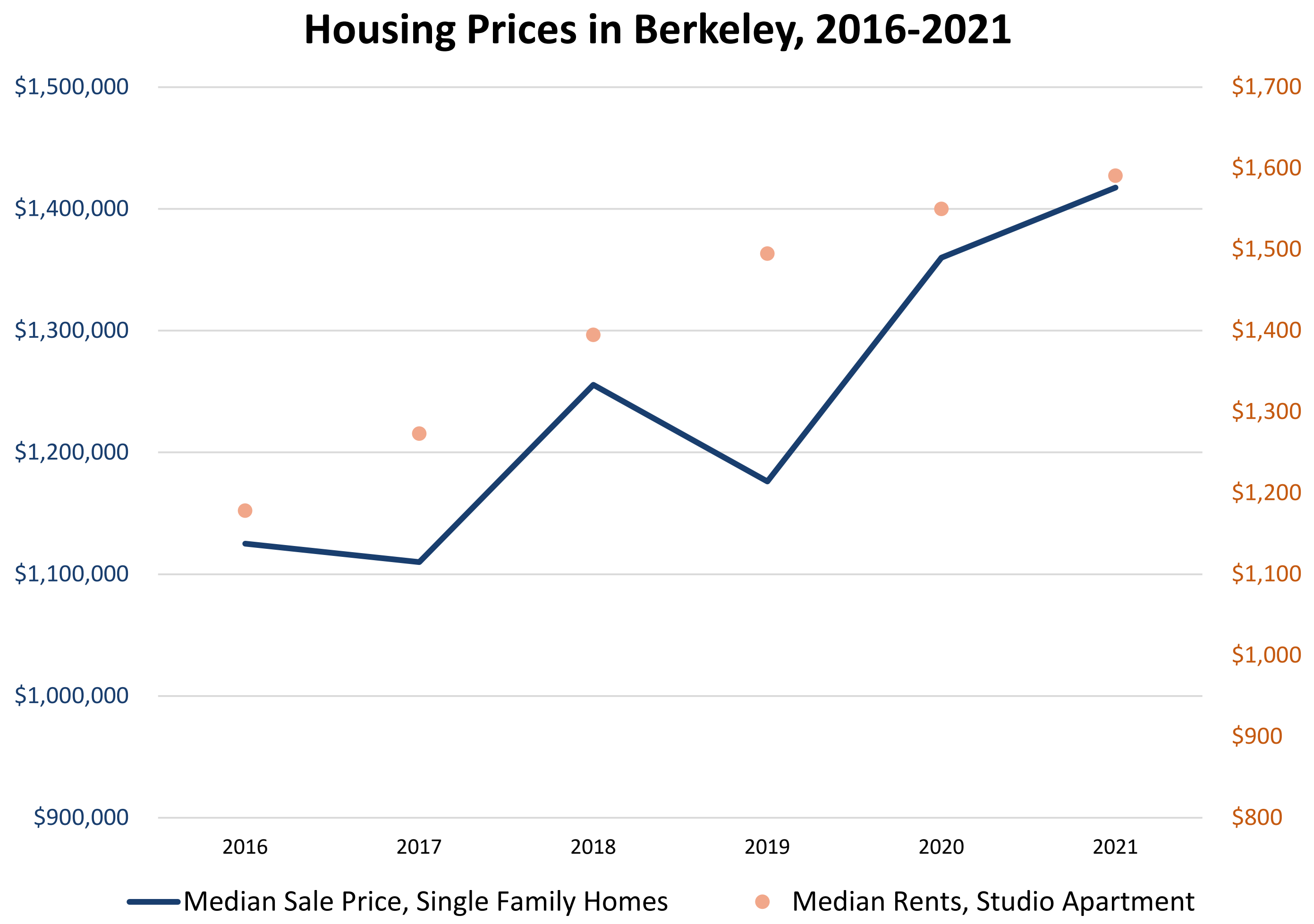
Hub Berkeley at the corner of Center St and Oxford St is a proposed 17 story, 283-unit project with 10,164 sq. ft. of ground-floor retail/restaurant spaces. It would have 63 parking spaces as well as 316 bike parking spaces.

2065 Kittredge St is a 189-unit proposal for off-campus student housing. It would include a 42-space underground parking garage, 114 bike parking spaces, and nearly 10,000 sq. ft. indoor amenity area for residents.

Source: Berkeleyside and City of Berkeley, Project Descriptions, 2021

Development & Housing

Rental costs & sale prices



Sources: Redfin, and City of Berkeley Rent Stabilization Board

Median Sale Price, Single-Family Homes, Dec 2021	
Alameda	$1,197,500
Albany	$1,225,250
Berkeley	**$1,417,500**
El Cerrito	$1,240,000
El Sobrante	$705,000
Emeryville	$670,000
Oakland	$800,000
Richmond	$675,000
Piedmont	$1,907,500
San Leandro	$825,000

Source: Redfin

Home sales and rental prices increase and sales volume stays high

Berkeley's single family home values increased 3.5% from Dec. 2020 -2021, with a 27.5% increase in sales volume over the same period. 88 single family homes were sold in Berkeley in Dec. 2021 alone, with an average of 17 days on the market. Since the pandemic began, (March 2020) the median price of single family homes in Berkeley hit an all time high ($1,610,000) in October of 2021. For rentals, between Oct. 2020 and Oct. 2021 Berkeley's **market rate rents** for all units increased by 3.1%, to $3,196.

Source: Redfin, and RentCafe.com

COVID-19 Recovery

Business & Arts Support

Small business revolving loan fund & resiliency loan program

Revolving Loan Fund (RLF) Portfolio	Total Loans	Active Loans
Number of RLF Loans	45	8
RLF $ Loaned	$2,778,417	$795,000
Total Non-RLF $ Leveraged	$7,453,083	$2,303,486
Private Sector Jobs Created	204	50
Private Sector Jobs Saved	100	76

COVID-19 Resiliency Loan Program (RLP) Portfolio	Active Loans
Number of RLP Loans	11
RLP $ Loaned	$520,000

Source: Berkeley OED, January 2022

Current RLF Borrowers Include:

NABOLOM BAKERY

KITCHENonFIRE

EBMC

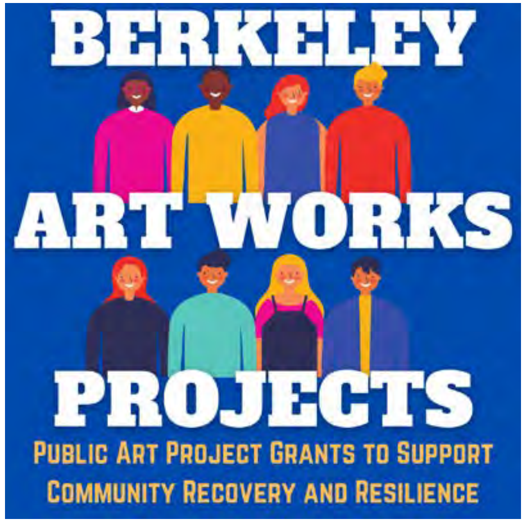
Supporting Berkeley's existing small businesses

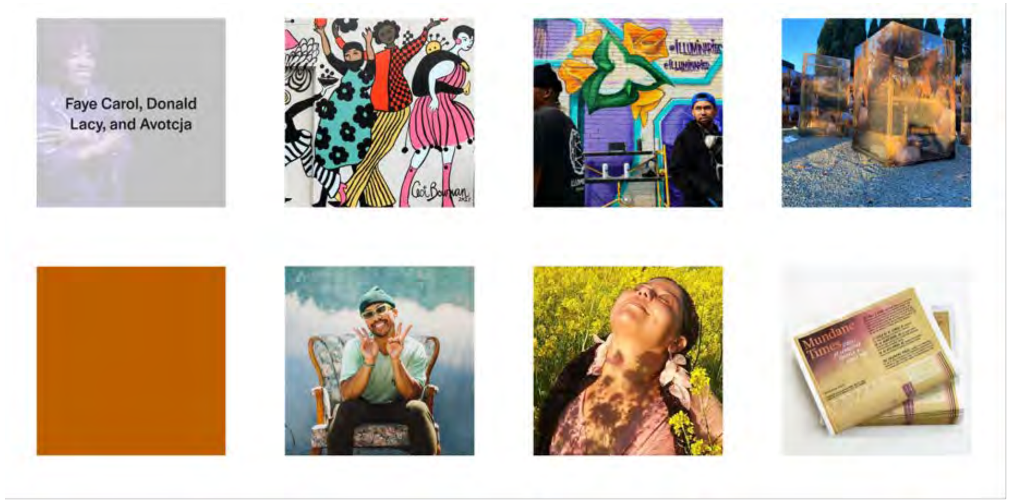
RLF recipient *Kitchen on Fire* launched new products such as REBOUT Wellness Beverages, and continues to safely offer in-person cooking classes.

RLF recipient *East Bay Media Center* continues to hold hybrid film festivals and online youth camps.

Business & Arts Support

Arts & Culture Relief Grants





Berkeley Art Works Projects (BAWP)

The Berkeley Art Works Projects grant program provided economic opportunities for Berkeley artists struggling during an economically challenging time, and enhanced Berkeley's cultural and economic vitality with public art projects for the community. Grants ranged from the micro ($500) to $10,000 for larger projects. The program challenged grantees to respond to one of the following themes through their project: Public health & wellbeing, Economic recovery & resilience, Community connection & belonging. To date, the Berkeley Art Works Projects grant program has provided close to $200,000 in funding for 32 artists, performers, and community members to create temporary public art projects throughout Berkeley that bolster collective resilience and recovery from the effects of COVID-19. These projects began to be installed throughout the city in 2021 and will continue through 2022.
View a map of BAWP projects here: https://www.berkeleyartworksprojects.org/map

Berkeley Arts Recovery Grants Program

The Berkeley Arts Recovery Grants (BARG) for Organizations & Festivals were funded through a one-time allocation by Berkeley City Council of American Rescue Plan Act (ARPA) dollars to support the recovery of Berkeley's arts sector. The fund provided one-time grants to all qualifying Berkeley-based nonprofit and fiscally sponsored arts organizations and festivals. BARG grant funding will be used to mitigate an arts organization's economic loss from COVID-19, implement COVID-19 prevention tactics, and procure consulting and marketing services to bolster the organization financially for future sustainability. 74 grant awards ranging from $3,000 to $33,000, with an average grant award amount of $20,734 per organization, are set to be disbursed in February of 2022.

Business & Arts Support

#DiscoveredinBerkeley business marketing campaign

The ***Discovered in Berkeley*** marketing campaign highlighted local businesses supporting environmental sustainability, social equity, local production, and artistic creativity. Companies offering more humane methods of food production, original design (with haircare, jewelry, furniture & more), and craft food & beverages (for outdoor and personal consumption) featured prominently.

Throughout 2021:

- More than 2,750 users visited DiscoveredinBerkeley.com (87% were new visitors)
- Instagram @DiscoveredinBerkeley achieved 650+ followers (and the uses of #DiscoveredinBerkeley exceeded 3,300)
- 8 Berkeleyside articles generated 12,800+ page views and more than 1,000 clicks to local businesses' & other featured websites
- 21 Berkeleyside banner ads generated 609k+ impressions and more than 780 "clicks"

Business & Arts Support

#BerkeleyHolidays Gift Guide and marketing campaign

- The Berkeley Chamber held its 3rd Annual Holiday Gift Fair at the UC Theatre featuring 30 merchants with gifts including baked goods, clothing, jewelry, books, calendars, masks, blankets, wine, coffee, spices, and more. It drew more than 300 attendees. Facebook event advertising reached 7,000+ people, with 277 event responses.
- The online BerkeleyHolidays.com Gift Guide was updated to include more photos and increase gift search functionality. 38 businesses, including 20 woman-owned businesses and 8 BIPOC or black-owned businesses, participated.
- #berkeleyholidays has been used in more than 1,800 posts on Instagram
- More than 1,400 unique viewers saw *Berkeleyside*'s Discovered in Berkeley article featuring Gift Fair vendors and the banner ads for those businesses generated nearly 80 "clicks".
- More than 300 users visited discoveredinberkeley.com in the month following the holiday gift story's publication in *Berkeleyside*. The site linked prominently to berkeleyholidays.com throughout the winter holiday period.

City of BERKELEY

Office of Economic Development (OED)

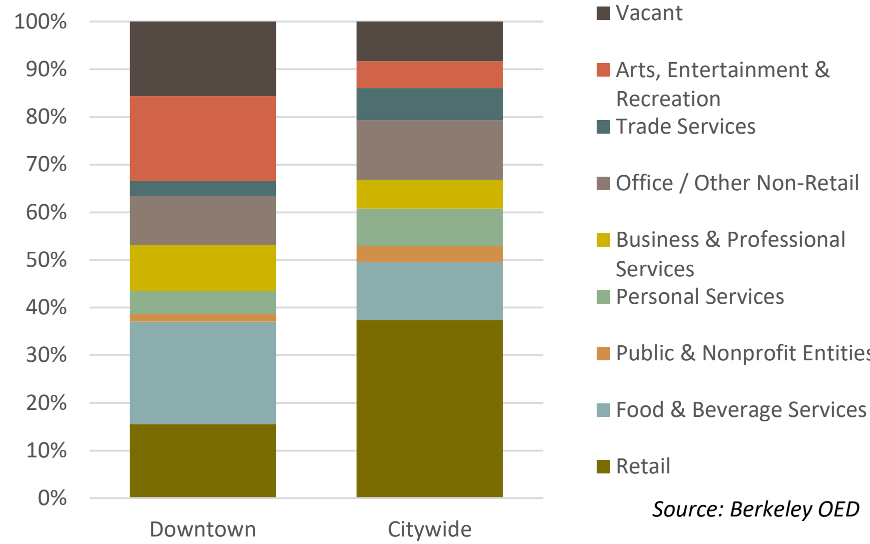
See the OED website for past Economic Dashboards and other economic reports:
https://www.cityofberkeley.info/oed/reports/

Contact OED for more information:
oedmailbox@cityofberkeley.info

Downtown: 2021 Snapshot

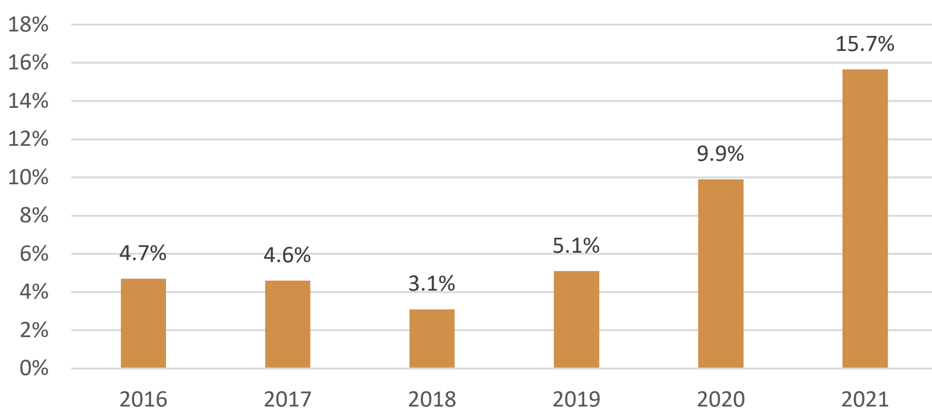
Downtown Berkeley serves as the City's core commercial district, meeting the daily needs of residents, students, workers, and visitors. The district benefits from a significant concentration of arts and entertainment uses, which occupy 17.8% of total ground floor commercial space in the district compared to 5.6% citywide. As of Q3 2021, the vacancy rate in Downtown is 15.7%, which has more than tripled since late 2019 (5.1%). Sales tax revenue generated in 2021 by Food & Beverage services dropped to $580,079 from $934,966 in 2020 (-38%) but Retail sales tax collected increased by $34,223 (+6%).

Ground Floor Commercial Business Mix (by Square Footage), 2021 Q3



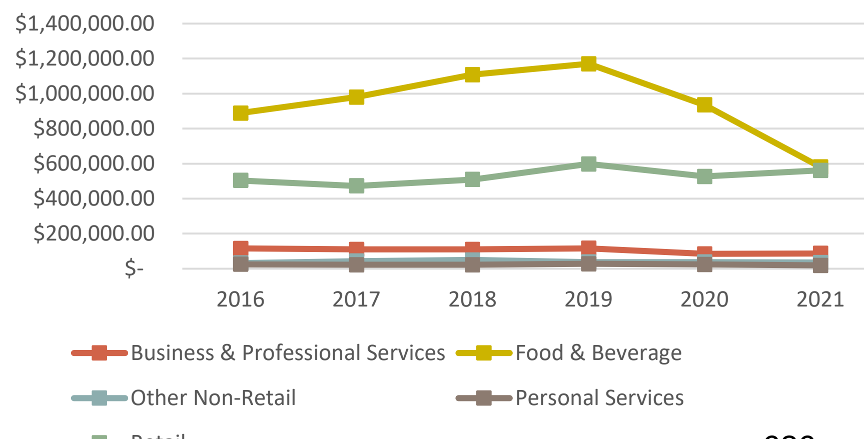
Source: Berkeley OED

Ground Floor Commercial Vacancy Rate (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021

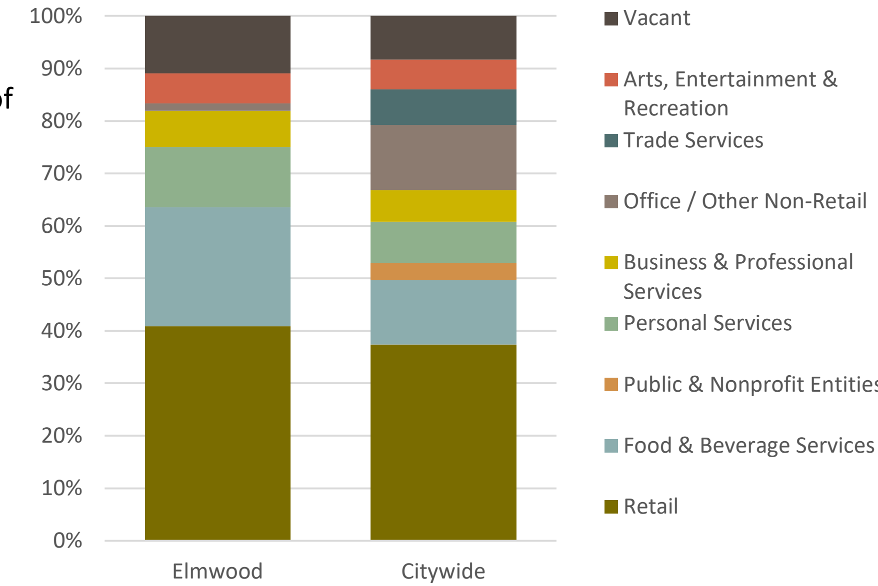


Source: MuniServices

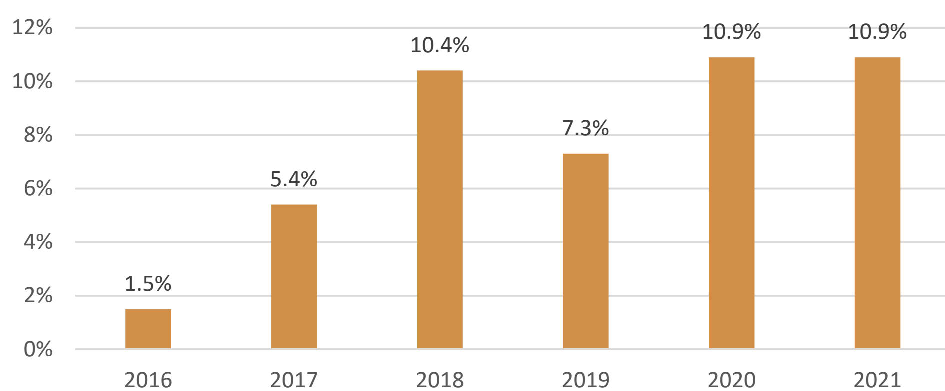
Elmwood: 2021 Snapshot

The Elmwood is a compact three block commercial district along College Avenue near the Berkeley-Oakland border and the neighboring Rockridge shopping district. The Elmwood district is characterized by a high concentration (22.7%) of Food & Beverage services and Personal Services (11.5%), and is a walkable, neighborhood-serving commercial district. As of Q3 2021, the district's vacancy rate by square footage is 10.91%, which is close to no change from 2020 Q4 (10.95%). Sales tax collected from the Food and Beverage sector in the Elmwood decreased by $33,157, from 2020 to 2021, and by $13,315 for Retail, as indoor capacity for retail shopping was limited, and indoor dining was still restricted due to the pandemic.

Business Mix (by Square Footage), 2021 Q3

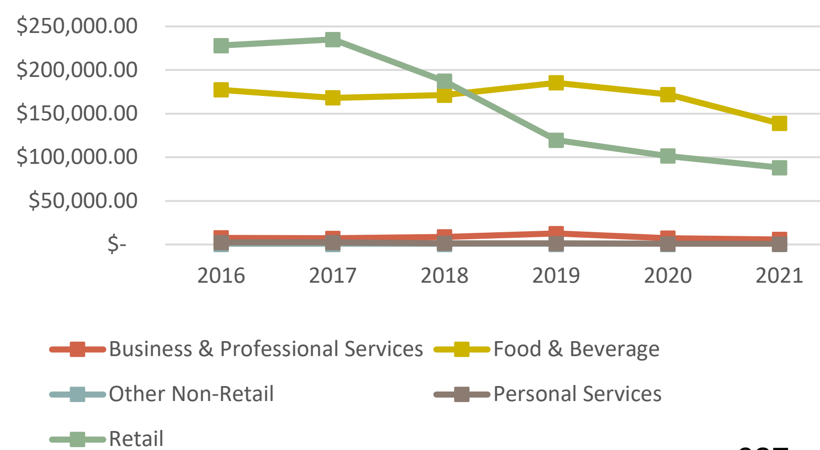


Ground Floor Commercial Vacancy Rate (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021



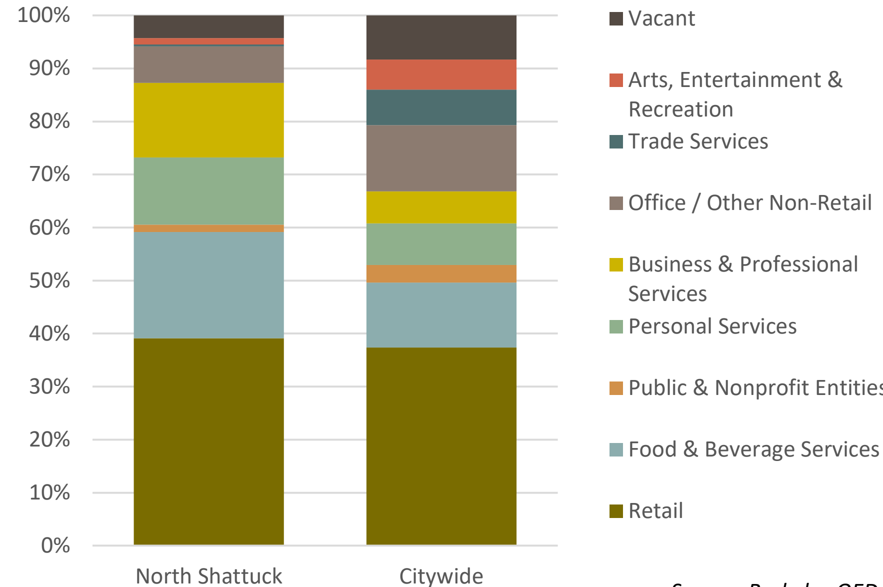
Source: MuniServices

North Shattuck: 2021 Snapshot

North Shattuck is one of Berkeley's oldest commercial districts, located just north of Downtown. The district is characterized by a high concentration of well-known, long-standing, and celebrated restaurants, including Chez Panisse and the Cheeseboard. North Shattuck is both a walkable, neighborhood-serving commercial district as well as a global destination for food and dining. As of Q3 2021, the district's vacancy rate by square footage is 4.29%, which is close to no change from the rate of 4.32% in 2020 Q4.

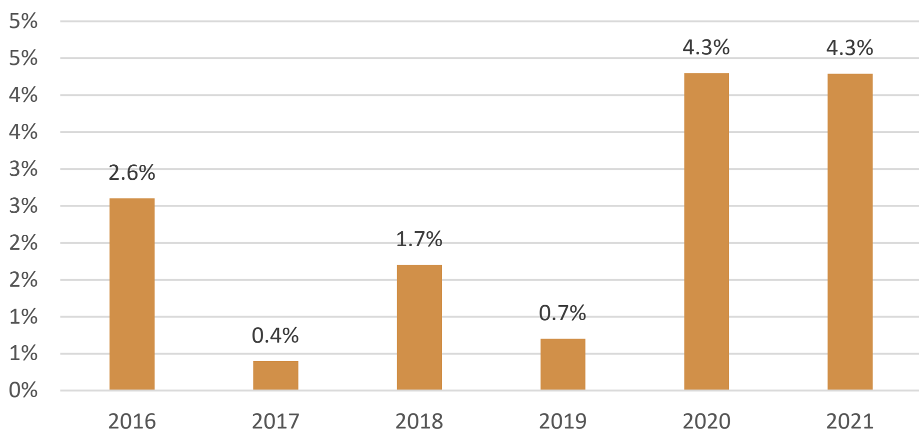
Sales tax collected from the Food and Beverage sector in North Shattuck decreased by $137,925, from 2020 to 2021, and by $56,071 for Retail, as indoor capacity for retail shopping was limited, and indoor dining was restricted due to the pandemic.

Business Mix (by Square Footage), 2021 Q3



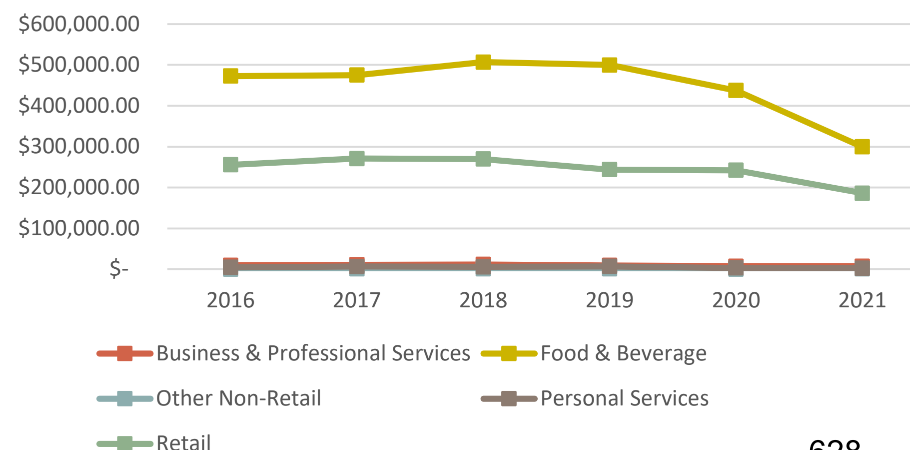
Source: Berkeley OED

Ground Floor Commercial Vacancy Rate (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021

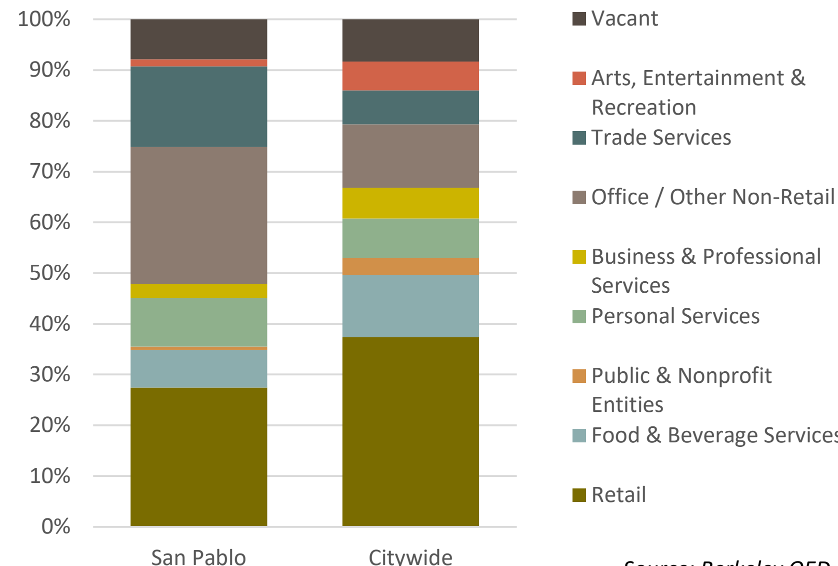


Source: MuniServices

San Pablo: 2021 Snapshot

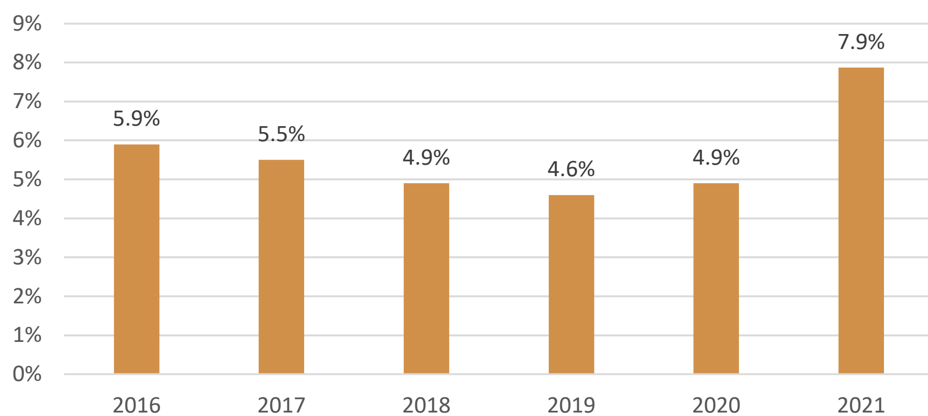
San Pablo Avenue is Berkeley's largest commercial corridor, running the entire north-south length of the City. San Pablo is characterized by a high concentration of Trade Services (15.9%), including over 50 automobile services. San Pablo functions more as a regional destination for specific uses rather than a walkable, neighborhood-serving commercial district; as such, it features smaller percentages of Food & Beverage Services (7.4%) and Personal Services (9.6%). In Q3 2021, the district's vacancy rate by square footage was 7.9%, up from 4.9% in Q4 2020 and also up from the average rate of 5.2% over the 5 years before 2021. Retail Sales tax revenue collected in 2021 has increased by $56,445 since 2020, and continues to be the largest source of tax revenue for the area.

Business Mix (by Square Footage), 2021 Q3



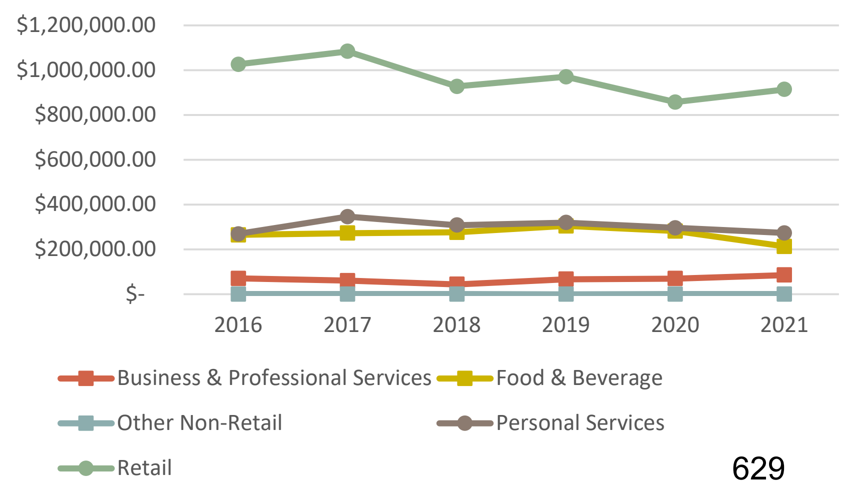
Source: Berkeley OED

Ground Floor Commercial Vacancy Rates (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021

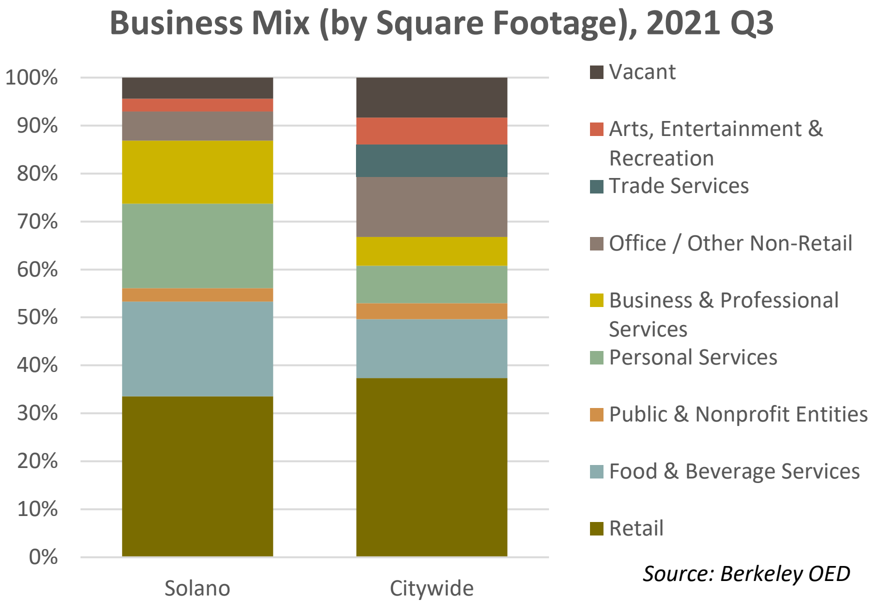


Source: MuniServices

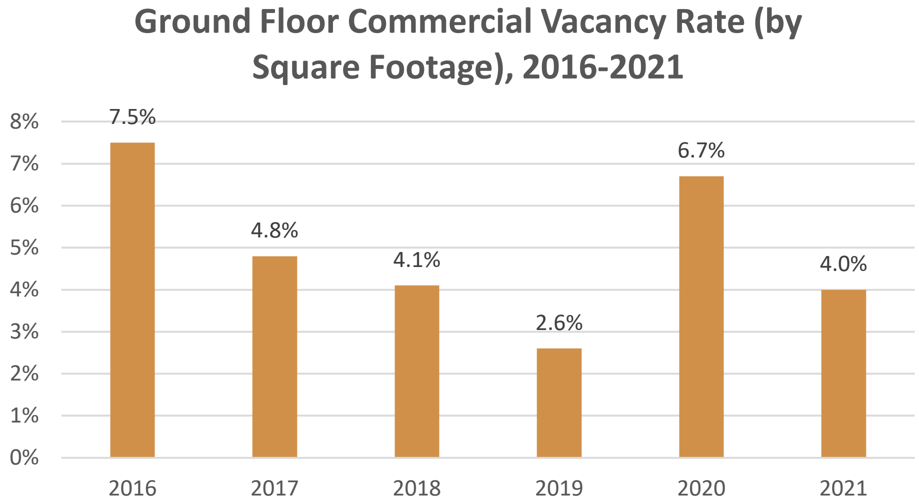
Solano: 2021 Snapshot

Solano is a small commercial district in North Berkeley, with a total of 147 commercial spaces and approximately 274,800 square feet of commercial space. It shares a border with Albany and is situated next to a large elementary school and an active neighborhood of single-family homes. Solano has a large key asset (the former Oaks Theatre) that was due to be occupied by a climbing gym in late 2021 and should be open soon. The district's vacancy rate by square footage is 4.0%, a 2.7% decrease from Q3 2021 (6.7%).

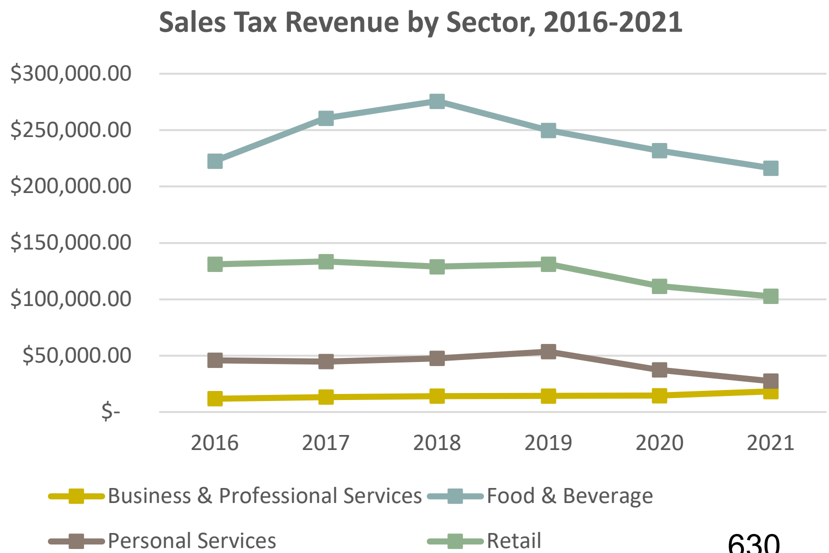
Sales tax collected from the Food and Beverage sector along Solano Avenue decreased by $15,554, from 2020 to 2021, and by $8,932.18 for Retail, as indoor capacity for retail shopping was limited, and indoor dining was restricted due to the pandemic.



Source: Berkeley OED



Source: Berkeley OED

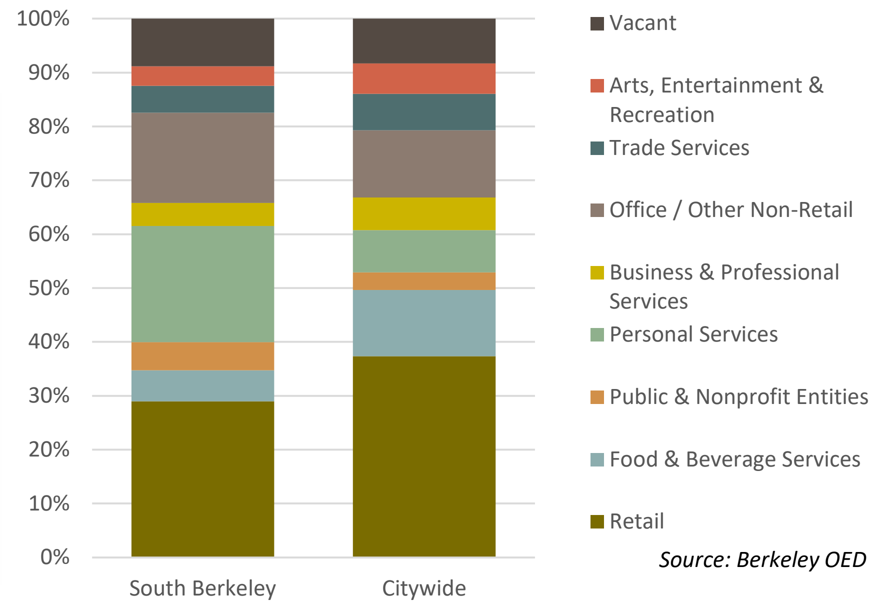


Source: MuniServices

South Berkeley: 2021 Snapshot

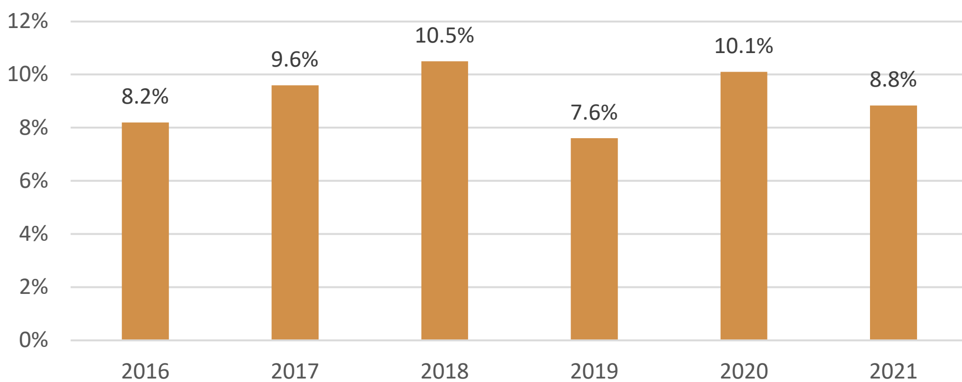
South Berkeley is a large district stretching over an area known for its cultural diversity and includes the Lorin District, the Sacramento corridor, and the South Shattuck area. South Berkeley includes several car dealerships, which accrue significant retail sales tax revenue for the City. The area also features a high concentration of Personal Services businesses (21.6% vs. 7.8% citywide) but is under-served by Food & Beverage services, which account for only 5.8% of ground floor commercial space, as compared to 12.3% citywide. As of Q3 2021, the district's vacancy rate by square footage was 8.8%, a 1.3% decrease from 2020.

Business Mix (by Square Footage), 2021 Q3



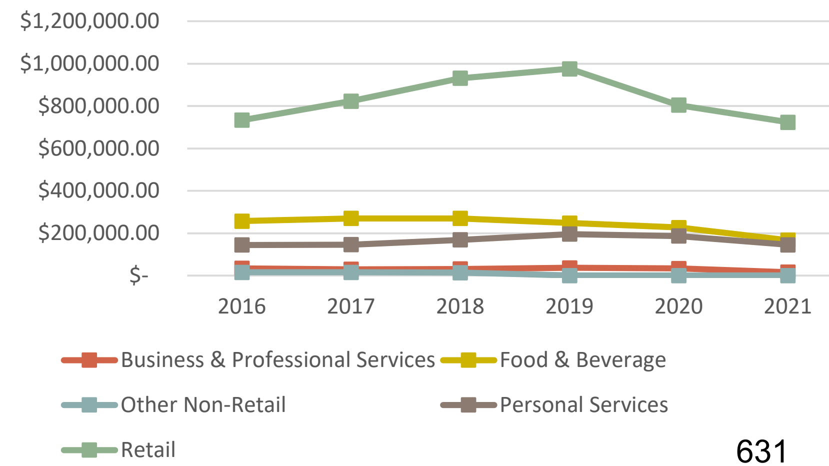
Source: Berkeley OED

Ground Floor Commercial Vacancy Rate (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021



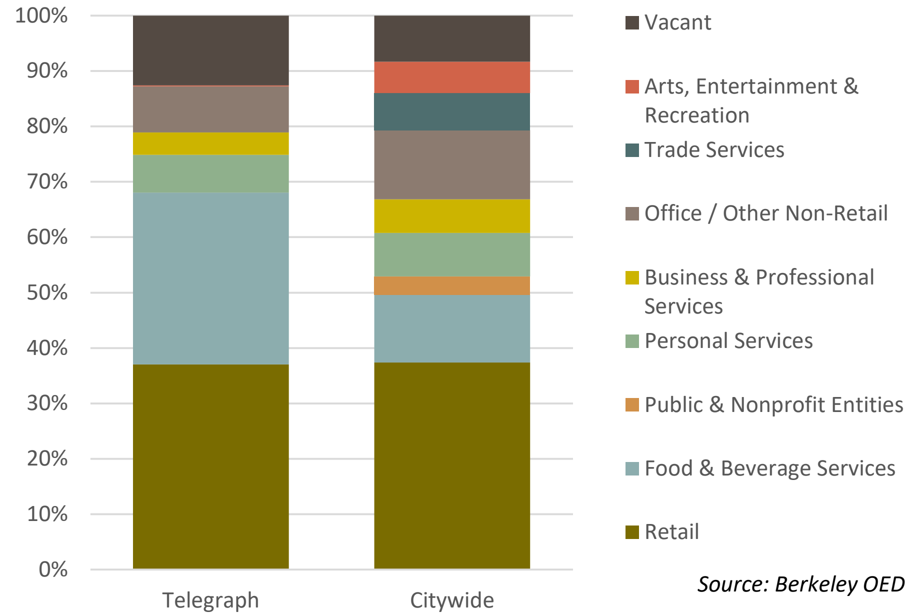
Source: MuniServices

Telegraph: 2021 Snapshot

CITY OF BERKELEY

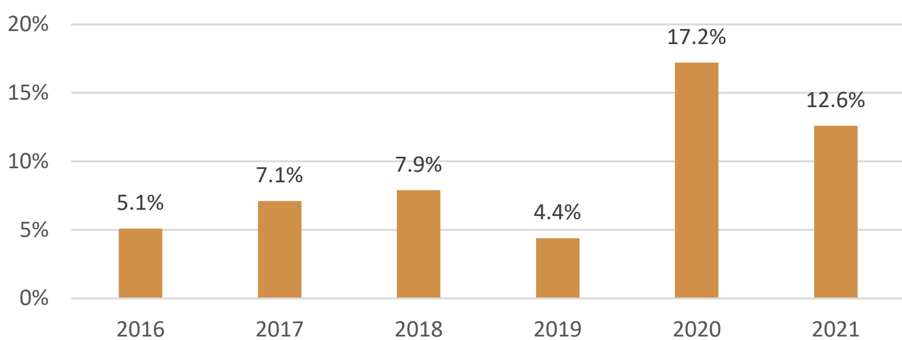
The Telegraph district has undergone significant change with respect to its ground floor inventory over the past several years. Food & Beverage services have shown a dramatic increase since 2012, with 31.0% of Food & Beverage services accounting for ground floor commercial space in the district, as compared to 12.3% Citywide. As of Q3 2021, the district's ground floor commercial vacancy rate of 12.6% has decreased from 2020's record high of 17.2%. This can be attributed to new ground floor leases and developments along Telegraph Avenue in 2021 that will continue into 2022, including the large Enclave Building at Telegraph and Haste that currently contains student housing and is offering many new ground floor commercial spaces.

Business Mix (by Square Footage), 2021 Q3



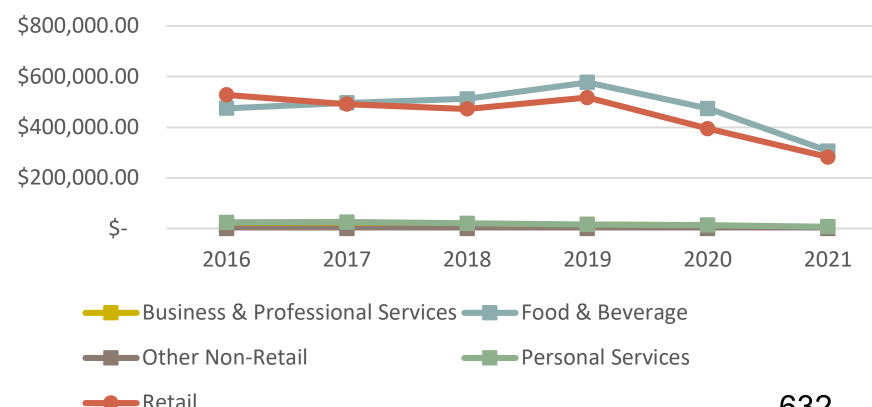
Source: Berkeley OED

Ground Floor Commercial Vacancy Rate (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021

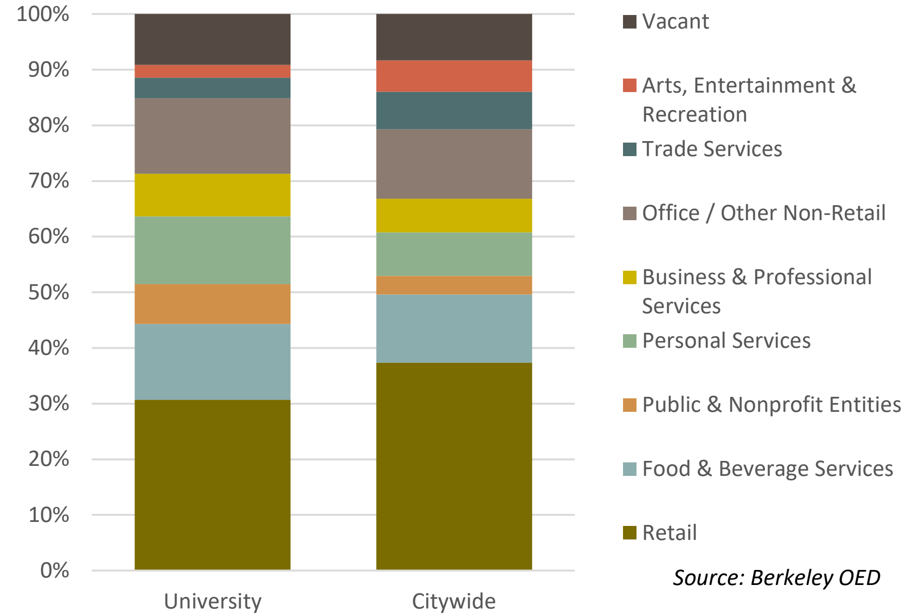


Source: MuniServices

University: 2021 Snapshot

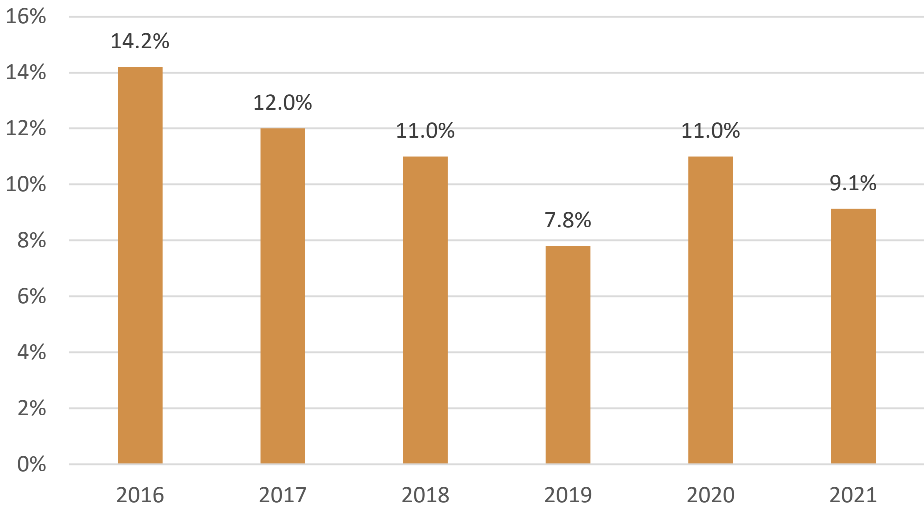
University Avenue, from Martin Luther King Jr Way to the waterfront, spans many of the City's neighborhoods and serves as the gateway to the UC Berkeley Campus. From 2016 to 2020, Food & Beverage Services has generated the most sales tax revenue for the district. In 2021, Retail sales tax eclipsed funds from Food & Beverage. Retail sales tax collected in 2021 increased by $116,785.63 from 2020, passing pre-pandemic levels. The 2021 vacancy rate decreased by 1.9% from 2020 to 9.1%.

Business Mix (by Square Footage), 2021 Q3



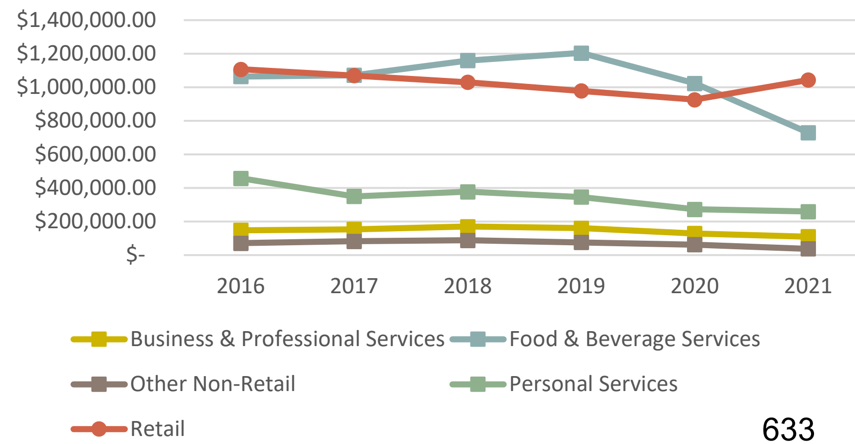
Source: Berkeley OED

Ground Floor Commercial Vacancy Rate (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021

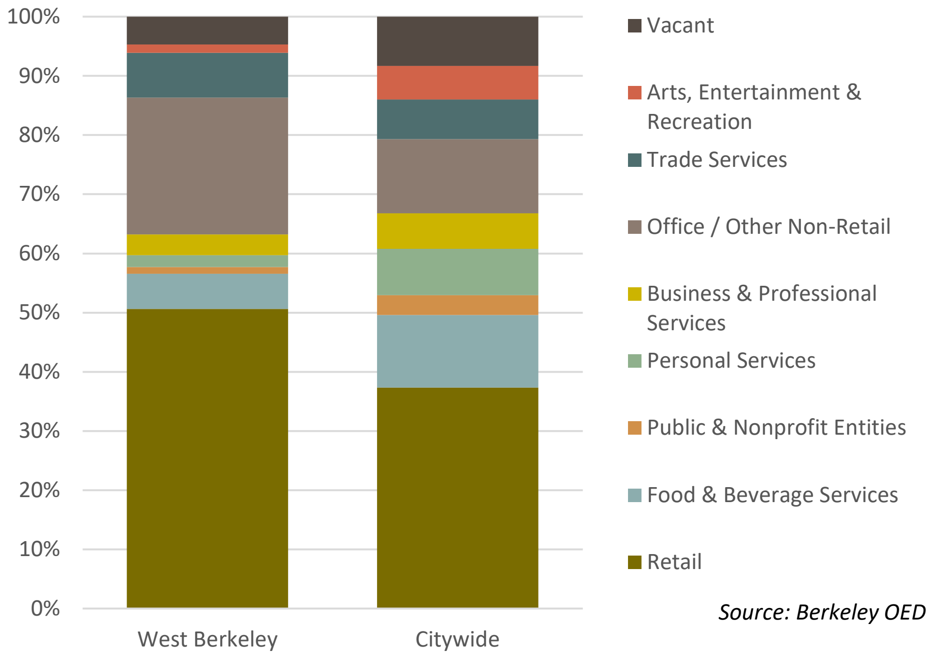


Source: MuniServices

West Berkeley: 2021 Snapshot

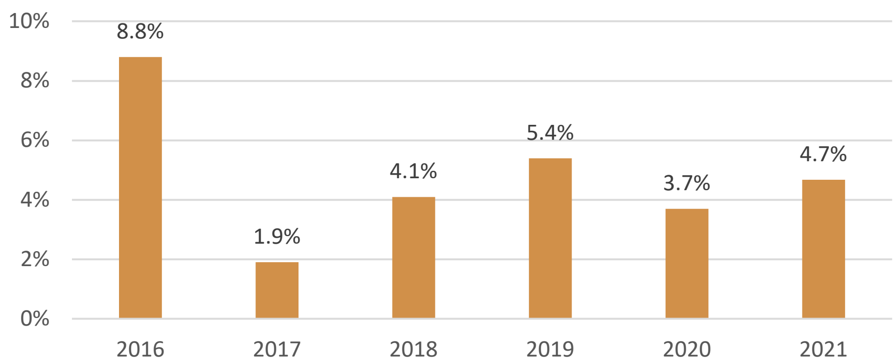
West Berkeley represents all commercial spaces west of San Pablo Avenue, including 4th Street and the Gilman Corridor. There are a number of major, large-floor-plate retailers, and a dense cluster of home supplies and construction businesses. There is also a higher percentage of non-retail commercial uses, including manufacturing and warehousing. Retail accounts for 50.7% of ground floor commercial space in the district, as compared to 37.4% citywide. West Berkeley also has a smaller percentage of square footage devoted to Food and Beverage (5.9%) businesses than the citywide rate of 12.3%. The commercial vacancy rate in Q3 of 2021 is 4.7%, an increase from 2020's 3.7%. Sales tax revenue has increased in this area everywhere except Food & Beverage and Personal Services for an overall Sales tax revenue increase of $71,501 (+1.1%).

Business Mix (by Square Footage), 2021 Q3



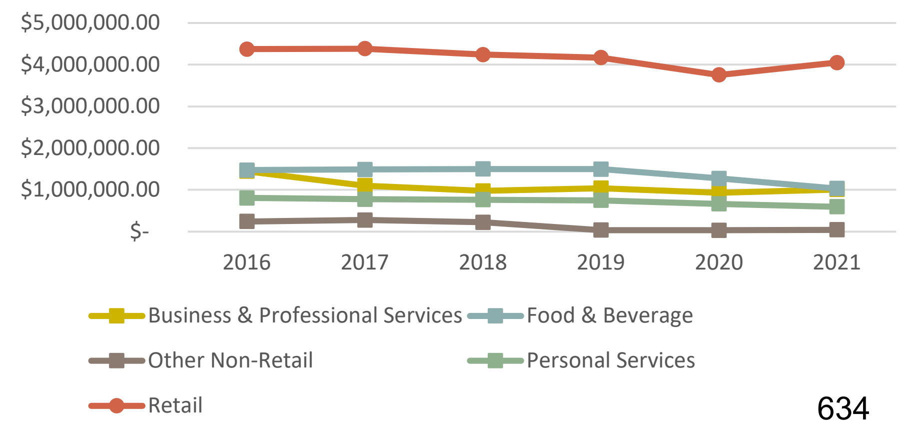
Source: Berkeley OED

Ground Floor Commercial Vacancy Rate (by Square Footage), 2016-2021



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021



Source: MuniServices

Neighborhood (C-N): 2021 Snapshot

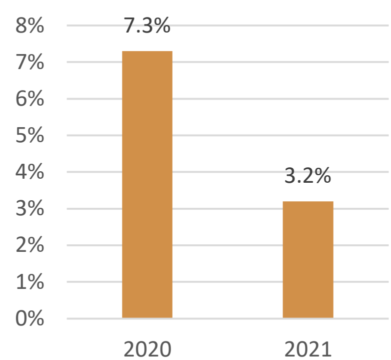
Across Berkeley there are **11** smaller commercial pockets, zoned as "**C-N**" or "Neighborhood Commercial." These areas are not more than one or two block collections of commercial enterprises that are distributed throughout Berkeley (see map).

Taken together, the "C-N" areas represent nearly 190 commercial spaces, and approximately 300,000 square feet of commercial space. The C-N areas collectively generate 3.5% of the city's total sales tax. They also include a few large Arts, Entertainment and Recreation facilities (23.1% by square footage) and Public and Non-Profit entities (25.8% compared to 3.3% citywide). These areas include commercial nodes at the following intersections:

- Claremont and Prince
- Claremont and Tunnel
- College and Alcatraz
- Gilman and Curtis
- Hearst and Euclid
- Hopkins and El Dorado
- Hopkins and Monterey
- Martin Luther King Jr Way (MLK) and Dwight
- MLK and Hearst
- MLK and Rose
- MLK and Virginia

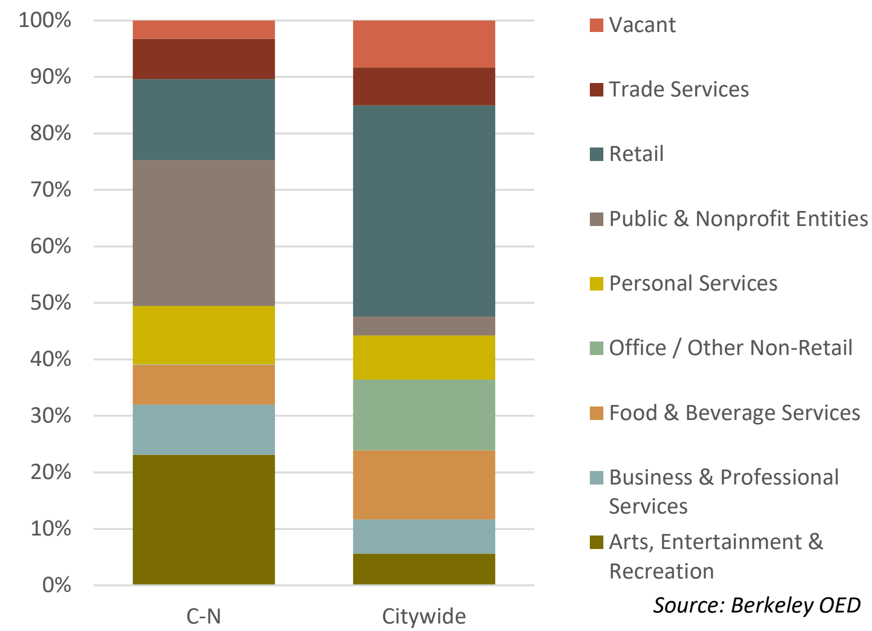
The first field data from the C-N areas was collected during the COVID-19 Pandemic of 2020 to track the impact of shelter-in-place orders on neighborhood-serving retail and service businesses.

Ground Floor Commercial Vacancy Rate (by Square Footage), 2020-2021



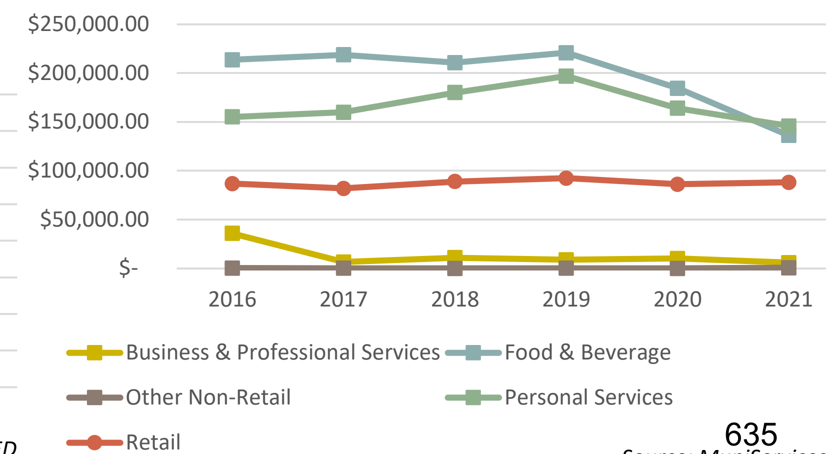
Source: Berkeley OED

Business Mix (by Square Footage), 2021 Q3



Source: Berkeley OED

Sales Tax Revenue by Sector, 2016-2021



Source: MuniServices

CITY OF BERKELEY
Office of the City Manager

39

PUBLIC HEARING
March 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Jordan Klein, Director, Planning and Development Department

Subject: Referral Response: Research and Development (R&D) Definition

RECOMMENDATION

Conduct a public hearing and, upon conclusion, adopt the first reading of a Zoning Ordinance amendment that modifies the land use definition of Research and Development (R&D) [Berkeley Municipal Code (BMC) Division 5: Glossary – Defined Terms 23.502.020].

FISCAL IMPACTS OF RECOMMENDATION

None.

CURRENT SITUATION AND ITS EFFECTS

On March 20, 2020 the City Council adopted a referral from Mayor Arreguin and Councilmember Wengraf to update the definition of R&D in the Zoning Ordinance (Title 23 of the Berkeley Municipal Code). The current definition is:

> ***Research and Development***
> *A Research and Development facility is an establishment comprised of laboratory or other non-office space, which is engaged in one or more of the following activities: industrial, biological or scientific research; product design; development and testing; and limited manufacturing necessary for the production of prototypes.*

The March 2020 referral observed that the current definition does not adequately reflect present-day business activities. For example, the current definition prohibits R&D establishments from including office space and requires the inclusion of a laboratory. The referral requested that the new definition reflect evolving business practices and provide flexibility for R&D establishments to occupy spaces that meet their business needs.

Modifications to the R&D definition supports the City's Strategic Plan goal of fostering a dynamic, sustainable, and locally-based economy.

Planning Commission Recommendation
Planning Commission discussed this referral on December 16, 2020 and June 2, 2021, and held a public hearing on October 6, 2021. Planning Commission focused not only on the substance of the definition but also on its formatting, aiming to present the words in a clear and logical manner. Below is the definition that Planning Commission recommended for City Council's consideration:

> ***Research and Development***
> *An establishment engaged in the following activities:*
> - *Industrial, biological, or scientific research; and*
> - *Product or process*
>   - *Design, or*
>   - *Development, or*
>   - *Prototyping, or*
>   - *Testing.*
>
> *This may include labs, offices, warehousing, and light manufacturing functions as part of the overall Research and Development use.*

Subsequent to the Planning Commission hearing, Planning & Development staff were informed that unordered, bulleted lists are not acceptable formatting for the Berkeley Municipal Code (BMC). As such, the Planning Commission's recommended definition is represented below in paragraph format for City Council consideration:

> ***Research and Development***
> An establishment engaged in the following activities: 1) industrial, biological or scientific research; and 2) product or process design, development, prototyping, or testing. This may include labs, offices, warehousing, and light manufacturing functions as part of the overall Research and Development use.

The recommended definition addresses the referral—accommodating innovation in the R&D business sector—while maintaining consistency with Berkeley's regulatory practices. In addition, the Planning Commission recommendation included the following four elements that were developed in the course of their deliberations. Discussions took into consideration research and analysis presented in staff reports (which covered Berkeley's existing R&D regulations, R&D definitions adopted by other Bay Area jurisdictions, and consistency with the West Berkeley Plan), presentations and material provided by Berkeley's Office of Economic Development, and input from the public.

- <u>Clearly state the required and acceptable land use activities of an R&D land use.</u>

  An R&D land use is characterized by a continuum of activities - research, development, prototyping, and testing. It is this continuum of activities that necessitates the need for an R&D land use, since an establishment conducting research without development or development without research could be permitted with existing “stand-alone” land uses in the BMC. The proposed definition provides a list of required land use activities, making it clear that an R&D land use must include on-going production that results in the design, development, prototyping, or testing of a product, prototype, or process. The proposed definition reflects the interrelated functions of an R&D establishment while creating a distinction between businesses with R&D land uses and stand-alone labs, offices, or light manufacturing land uses.

- <u>Remove prohibition on any office space.</u>

  The current definition of R&D prohibits office space. This is problematic because modern businesses with R&D land uses conduct research both in laboratory settings—which may include clean rooms, hoods, work benches, and machinery—as well as within office space, which may include desks and small-scale computer equipment. As referenced, the current definition intentionally prohibited office space in order to avoid office land uses from encroaching on limited industrial space in West Berkeley. The full prohibition of office space is problematic and inconsistent with the allowance of ancillary[1] office space and with the multi-faceted activities required of an R&D firm. The proposed definition allows for office space to be part of a business with an R&D land use. This is consistent with current business practices and R&D regulations in other cities.

- <u>Address Planning Commission’s concerns about software development firms.</u>

  Planning Commission, sensitive to the unique physical needs of R&D establishments, wanted to ensure that office-based software firms would not compete for space and/or drive up land costs for R&D establishments. The referral requested the addition of “technological” research to emphasize the need for computer-intensive activities associated with businesses that use the R&D land use category. The proposed definition achieves this goal by allowing industrial, biological or scientific research *and* design, development, prototyping and testing in laboratories and offices. This modification would allow for technological research that utilizes custom and proprietary software, but directs R&D businesses that are purely office-based to locate in other commercial districts where lower impact office uses are allowed. This solution reserves limited industrial space for R&D facilities where larger experimental space may be needed for the purposes of research, design, and prototyping or where activities generate noise, odor or vibrations.

[1] BMC Definition: Use, Ancillary - A use that is both dependent on and commonly associated with the principal permitted use of a lot and/or building and that does not result in different or greater impacts than the principal use.

- <u>Do not encroach on protected space in the West Berkeley Plan Area.</u>

  During the Planning Commission meeting on December 16, 2020, several concerns were raised regarding the possible encroachment of R&D facilities on space designated for protected manufacturing uses. Planning Commission's recommended amendments do not remove or modify existing protections for the conversion of protected space. Since the adoption of the protected space conversion provisions in 2011, no more than 30,000 square feet of protected space has been converted for the purposes of R&D. That relatively small volume of converted space is an indication that the existing regulations for the conversion of protected space are robust and achieving their intended effect. Planning Commission's recommended definition will not alter how R&D land uses are regulated relative to protected space.

The draft Zoning Ordinance amendments update the R&D definition to provide clarity and reflect existing practices within the sector and regulatory practices in other cities. The definition also provides more flexibility to existing and prospective operations in Berkeley. In addition, the amendments to the R&D definition are consistent with the West Berkeley Plan as they do not imbalance the economic mix of the Plan Area, and they advance the goal of supporting the growth of an evolving industry that is creating local jobs.

<u>BACKGROUND</u>
The current definition for R&D was created as a result of the 2007-2011 West Berkeley Project.[2] As part of this project, the Planning Commission developed amendments to address various challenges industries experienced in the West Berkeley Plan area.[3] This project resulted in new land use definitions (including R&D and Arts and Crafts), the revision of protected use regulations, and other amendments that eased regulatory obstacles related to industrial business growth and opportunity in West Berkeley.

Planning Commission discussed this referral three times between December 2020 and October 2021. Staff support of the Commission's development of a recommendation included analysis of related definitions and regulations in the BMC, a survey of how other jurisdictions regulate R&D land uses (including Emeryville, Richmond, San Leandro and Oakland), an overview of the West Berkeley Plan, and a thorough analysis of emerging business sectors in Berkeley—with a particular focus on economic development in West Berkeley—provided by the Office of Economic Development.

As noted above, the Zoning Ordinance currently includes protections of manufacturing space in Berkeley as outlined in BMC23.206.050 [Protected Uses]. This Section of the

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[2] West Berkeley Project
https://www.cityofberkeley.info/WBP_Archive.aspx
[3] West Berkeley Plan (1993)
https://www.cityofberkeley.info/Planning_and_Development/Redevelopment_Agency/West_Berkeley_Plan_(The).aspx

BMC ensures that existing manufacturing spaces be maintained for a manufacturing land use or be replaced (at an alternate location within the zoning district) if a change of use occurs. The proposed R&D definition does not weaken these protections in the BMC.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Modifications to the R&D definition will not substantially change the primary activities of a business with an R&D land use classification or exacerbate detrimental impacts related to noise, vibration, odors, and the like within the mixed-use West Berkeley context. Existing performance standards and standard Use Permit conditions of approval would remain in place.

RATIONALE FOR RECOMMENDATION

The existing R&D definition is more restrictive compared to neighboring jurisdictions that permit this type of use. The proposed modifications to the definition of R&D reflect existing practices within the sector and regulatory practices in other cities. The definition also provides more flexibility to existing and prospective operations in Berkeley. The changes in the R&D definition are consistent with the West Berkeley Plan as they do not imbalance the economic mix of the Plan Area and advance the goal of supporting the growth of an evolving industry that is creating local jobs.

ALTERNATIVE ACTIONS CONSIDERED

Planning Commission considered multiple iterations of the R&D definition and also considered expanding the referral response to include updates to additional definitions, changes to levels of discretion and permitting thresholds, and modifications to regulations regarding protected spaces in West Berkeley and the West Berkeley Plan in general. Ultimately Planning Commission made a limited recommendation regarding the definition at this time. Council could take no action and continue to utilize the existing R&D definition, with no modifications.

CONTACT PERSON

Katrina Lapira, Assistant Planner, Planning & Development Department, 510-981-7488
Alene Pearson, Principal Planner, Planning & Development Department, 510-981-7489

Attachments:
1: Draft Ordinance
2: Council Referral from March 20, 2020
3: October 6, 2021 Planning Commission Meeting Final Minutes
4: Public Hearing Notice

ORDINANCE NO. -N.S.

AMENDING BERKELEY MUNICIPAL CODE CHAPTER 23.502 TO MODIFY THE RESEARCH AND DEVELOPMENT LAND USE DEFINITION

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

Section 1. That Berkeley Municipal Code 23.502.020 R.8 is amended to read as follows:

23.502.020 R.8

8. ***Research and Development*** An establishment engaged in the following activities: 1) industrial, biological or scientific research; and 2) product or process design, development, prototyping, or testing. This may include labs, offices, warehousing, and light manufacturing functions as part of the overall Research and Development use.

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.

ATTACHMENT 2

CITY OF BERKELEY

OFFICE OF THE MAYOR

CONSENT CALENDAR
March 10, 2020

TO: Honorable Members of the City Council

FROM: Mayor Arreguín and Councilmember Wengraf

SUBJECT: Referral: Update the definition of “Research and Development”

RECOMMENDATION
Refer to the Planning Commission to update the definition of “Research and Development.”

BACKGROUND
In the 21st century, Research and Development has evolved to take on many new forms, such that it can be performed in spaces that may, at first glance, appear to be an office or light industrial environment rather than a traditional “laboratory” with, for example, benches and sinks.

The Planning Commission is encouraged to update the definition of “Research and Development”[1] to reflect evolving business practices and consider language such as:

> Research and Development: An establishment comprised of laboratory or other associated and ancillary space, engaged in one or more of the following activities: industrial, technological, biological or scientific research; product design; associated software development; development and testing; and limited fabrication and/or manufacturing necessary for the production and assemblage of prototypical products.”

FINANCIAL IMPLICATIONS
None.

ENVIRONMENTAL SUSTAINABILITY
No environmental impact.

CONTACT
Mayor Jesse Arreguín
mayor@cityofberkeley.info | 510-981-7100

[1] BMC — 23F.04.010 Definitions

Planning Commission

FINAL MINUTES OF THE REGULAR PLANNING COMMISSION MEETING
October 6, 2021

The meeting was called to order at 7:02 p.m.

Location: Virtual meeting via Zoom

1. **ROLL CALL:**
   Commissioners Present: Barnali Ghosh, Robb Kapla, Elisa Mikiten, Chip Moore, Christina Oatfield, Alfred Twu, Jeff Vincent (arrived 7:40), and Brad Wiblin.

   Commissioners Absent: Savlan Hauser.

   Staff Present: Secretary Alene Pearson, Katrina Lapira, Samantha Updegrave, and Eleanor Holander.

2. **ORDER OF AGENDA:** No changes.

3. **PUBLIC COMMENT PERIOD:** 0

4. **PLANNING STAFF REPORT:**

- City Council
  - September 14 – BZO presentation and deliberation
  - September 28 – BZO first reading adopted
    - Takes effect December 1, 2021
  - October 12 – Accessory Dwelling Units Ordinance and second reading of the BZO
- Objective Standards – ZORP Phase II
  - Proposing December 15 subcommittee meeting

Information Items:

- September 28 – City Council: Item 32 Baseline Zoning Ordinance (BZO) Zoning Ordinance Revision Project – BZO Document (Link)
-

Communications:

- BART Communications

Late Communications: *See agenda for links.*

- Supplemental Packet One
- Supplemental Packet Two

- Supplemental Packet Three

5. CHAIR REPORT:

- None

6. COMMITTEE REPORT: Reports by Commission committees or liaisons. In addition to the items below, additional matters may be reported at the meeting.

- None.

7. APPROVAL OF MINUTES:

Motion/Second/Carried (Wiblin/Moore) to approve the Planning Commission Meeting Minutes from Ayes: Kapla, Mikiten, Moore, Oatfield, Twu, and Wiblin. Noes: None. Abstain: Ghosh. Absent: Hauser and Vincent. (6-0-1-2)

8. FUTURE AGENDA ITEMS AND OTHER PLANNING:

- Planning Commission
  - October 20
    - Bayer Development Agreement (Public Hearing)
  - November 3
    - BART Development Zoning Standards and EIR (Public Hearing)
    - Tentative Tract Map (Public Hearing)
    - 2022 Planning Commission Meetings Calendar
  - November 17
    - Housing Element EIR Scoping Meeting
    - Citywide Affordable Housing Requirements (Public Hearing)
  - December 1 – Several items
  - December 15 ZORP Subcommittee meeting (HOLD)

AGENDA ITEMS

9. Public Hearing: Business Support Zoning Amendment Referrals – Research and Development (R&D) Definition

Staff provided background information on the referral and shared the proposed R&D definition. After staff's presentation, the Planning Commission held a public hearing, received comments, discussed the proposed amendments, and made a recommendation for the consideration of City Council.

Motion/Second/Carried (Kapla/Vincent) to recommend that the City Council adopt the following land use definition for Research and Development.

Research and Development

An establishment engaged in the following activities:

- *Industrial, biological, or scientific research; and*
- *product or process:*
  - *design, or*
  - *development, or*
  - *prototyping, or*
  - *testing.*

This may include labs, offices, warehousing, and light manufacturing functions as part of the overall Research and Development use.

Ayes: Ghosh, Kapla, Mikiten, Moore, Twu, Vincent, and Wiblin. Noes: Oatfield. Abstain: None. Absent: Hauser. (7-1-0-1)

Motion/Second/Carried (Vincent/Wiblin) close the public hearing on the Business Support Zoning Amendment Referrals – Research and Development (R&D) Definition at 9:11pm

Ayes: Ghosh, Kapla, Mikiten, Moore, Oatfield, Twu, Vincent, and Wiblin. Noes: None. Abstain: None. Absent: Hauser. (8-0-0-1)

Public Comments: 2

10. Action: Gentrification and Displacement Referral

Planning Commission re-established a subcommittee to address the Gentrification and Displacement referral.

Motion/Second/Carried (Kapla/Vincent) to appoint Commissioners Moore, Hauser, and Kapla (alternate) to the Gentrification and Displacement subcommittee.

Ayes: Ghosh, Hauser, Kapla, Mikiten, Moore, Oatfield, Twu, Vincent, and Wiblin. Noes: None. Abstain: None. Absent: Hauser. (8-0-0-1)

Public Comments: 5

Motion/Second/Carried (Vincent/Mikiten) to adjourn the Planning Commission meeting at 9:27pm.

Ayes: Ghosh, Kapla, Mikiten, Moore, Oatfield, Twu, Vincent, and Wiblin. Noes: None. Abstain: None. Absent: Hauser. (8-0-0-1)

Members in the public in attendance: 27
Public Speakers: 7
Length of the meeting: 2hr 25minutes

Alene Pearson

Attachment 4

NOTICE OF PUBLIC HEARING - BERKELEY CITY COUNCIL

AMENDMENTS TO BMC CHAPTER 23.502 -- UPDATING THE RESEARCH AND DEVELOPMENT (R&D) DEFINITION AND CORRESPONDING REFERENCES IN THE ZONING ORDINANCE

The City Council will consider amendments to the Research and Development land use definition in response to the Planning Commission recommendation and City Council referral to clarify provisions of the definition and to accommodate innovation in the R&D business sector, consistent with regulation in other jurisdictions. The amendments would apply in the Manufacturing Districts. This action is considered exempt from the California Environmental Quality Act (CEQA) pursuant to California Code of Regulations (CEQA Guidelines) 15378(a) and 15060(c)(2), environmental review is not required because the proposed Zoning Ordinance amendment does not meet the definition of a Project under CEQA Guidelines Section 15378(a), nor does it constitute an activity covered by CEQA under CEQA Guidelines Section 15060(c)(2) because passage of amendments do not constitute a direct physical impact on the environment, nor would it result in an indirect, reasonably foreseeable physical impact on the environment. The proposed amendment does not include any provisions that would exempt or otherwise reduce environmental review required under CEQA for individual development projects.

The hearing will be held on **Tuesday, March 22, 2022 at 6:00 p.m.** The hearing will be held via videoconference pursuant to Government Code Section 54953(e) and the state declared emergency.

A copy of the agenda material for this hearing will be available on the City's website at www.CityofBerkeley.info as of **March 10, 2022.** Once posted, the agenda for this meeting will include a link for public participation using Zoom video technology.

Written comments should be mailed directly to the City Clerk, 2180 Milvia Street, Berkeley, CA 94704, or emailed to council@cityofberkeley.info in order to ensure delivery to all Councilmembers and inclusion in the agenda packet.

For further information, please contact Alene Pearson, Principal Planner, Planning and Development Department at (510) 981-7489, or by e-mail at apearson@cityofberkeley.info.

Communications to the Berkeley City Council are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to the City Council, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the City Clerk at 981-6900 or clerk@cityofberkeley.info for further information.

Published: March 11, 2022 – The Berkeley Voice

City Clerk shall publish a notice at least 10 days prior to the date of the public hearing with the date, hour, and place of the public hearing for annual levy and collection of assessments in accordance with Streets and Highway Code Sections 22625, 22626, 22552, and 22553 and Section 6061 of the Government Code.

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Attachment 4

I hereby certify that the Notice for this Public Hearing 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 **March 10, 2022.**

Mark Numainville, City Clerk

40

Terry Taplin
Councilmember District 2

SUPPLEMENTAL
AGENDA MATERIAL
for Supplemental Packet 3

Meeting Date: **January 25, 2022**

Item Number: **27**

Item Description: **Resolution Accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code**

Submitted by: **Councilmember Taplin**

The District 2 office submits the following amendments to the District 4 office's supplemental for consideration:

1. Amend Section 1302.3(c)(1): replace subsection with affirmation that "existing laws prohibiting trespassing and unlawful search and seizure shall be followed."
2. Amend Section 1302.3(c)(2): append reference to existing BPD policies prohibiting harassment and intimidation, and pertinent disciplinary actions, including but not limited to General Order P-26.
3. Strike Section 1302.3(c)(6). This would prohibit the use of parking enforcement ALPR data in criminal investigations, even if parked vehicles are in a crime scene under investigation, thus endangering public safety by hindering investigatory capacity.
4. Strike Section 1302.3(c)(7). Parking Enforcement Officers (PEOs) should be able to match ALPR data to other databases where information on suspended or revoked licenses and open arrest warrants may be stored. Stolen vehicles are not the only public safety purpose in which PEOs may be of assistance.
5. Amend Section 1302.4: specify that only authorized staff may access CLETS data pursuant to the California Department of Justice's CLETS Policies, Practices, and Procedures Section 1.9.3 and Section 1.9.4.

2180 Milvia Street, Berkeley, CA 94704 Tel: 510.981.7120 TDD: 510.981.6903
E-Mail: *TTapllin@CityofBerkeley.info*

Surveillance Use Policy – Automatic License Plate Readers

1302.1 PURPOSE

This Surveillance Use Policy is legally-enforceable pursuant to BMC 2.99.

The policy of the Berkeley Police Department is to utilize ALPR technology to capture and store digital license plate data and images for Parking Enforcement Operations and Parking Occupancy Analysis while recognizing the established privacy rights of the public.

1302.2 DEFINITIONS

“Alleged Parking Violation” means an alleged violation of time limits in parking areas designated by state and local law, or a violation of time limits and/or non-permit parking in the City’s RPP zones.

“ALPR Read Image” means images of license plates, vehicles, wheels or any other incidentally captured image.

“ALPR Read” means computer-readable data captured by an ALPR Reader, including ALPR Read Image and associated ALPR Read Metadata. ~~ALPR Reads are transient means to create potential government records, to include Parking Occupancy Analysis data and Enforced Citations, and therefore shall not be considered a government record itself pursuant to Government Code § 34090.6.~~

“ALPR Hit” means an Alleged Parking Violation or State Stolen ~~or Wanted~~ System alert resulting from computer generated analysis of ALPR Reads by the Genetec ALPR System resulting in an apparent:

(1) match between an ALPR Read and ALPR Read Metadata stored in the Genetec ALPR System, to include the State Stolen ~~or Wanted~~ System; or

(2) incongruence between an ALPR Read and permit information stored in the Passport Parking Management System.

“ALPR Read Metadata” means any image-based or other metadata, including but not limited to, global positioning system coordinates, block face information, tire position information, digitized license plates in alphanumeric characters, and timestamps.

“Automated License Plate Reader” or “ALPR” means one or more Genetec AutoVu mobile cameras affixed to Parking Enforcement Scooters and combined with computer software and algorithms to read and convert images of license plates, the characters they contain, and associated ALPR Read Metadata related to Parking Enforcement Operations or Parking Occupancy Analysis into computer-readable data.

“Deploy” or “Deployment” means any operation or use of ALPR Readers affixed to Parking Enforcement Scooters.

“Enforced ALPR Hit” means an Alleged Parking Violation confirmed by a Parking Enforcement Officer that results in the transmission of associated ALPR Read Image and ALPR Read Metadata to the Passport Parking Management System for storage in a database as a government record for the purpose of citation processing.

“Genetec ALPR System” means the computerized Genetec server and database that stores and pushes ALPR Read Metadata generated by ALPR Readers.

“Residential Parking Permits” or “RPP” means an annual, visitor, merchant or in-home care parking permit, typically represented by a vehicle’s license plate, and associated with the City’s Residential Parking Permit program across designated zones.

“Parking Enforcement Scooter” means the GO-4 three-wheeled parking enforcement vehicle.

“Parking Enforcement Officers” means employees of the City who work weekly rotations on Parking Enforcement Operations beats throughout the City and are properly trained to operate ALPRs and access the Genetec ALPR System.

“Parking Enforcement Operations” means Parking Enforcement Officer enforcement of parking regulations associated with local ordinances, the California Vehicle Code, and State Stolen ~~or Wanted~~ System enforcement through Parking Enforcement Scooter-based automated (ALPR) and non-automated means.

“Personally Identifiable Information” or “PII” means information:

(1) that directly identifies an individual (e.g., name, address, vehicle registration number, or other identifying number or code, telephone number, email address, etc.) or

(2) by which the City or other agency intends to identify specific individuals in conjunction with other data elements, i.e., indirect identification.

“Parking Occupancy Analysis” means ongoing computational or algorithmic analyses performed by Passport Parking Management System or the City of Berkeley on ALPR Read Metadata regarding the occupancy of total parking spaces across commercial districts as part of goBerkeley, the City's data-driven, demand-responsive parking management program. ALPR Read Metadata data associated with Parking Occupancy Analysis shall not include any license plate or other PII information.

“Parking Permit Application” means an application submitted to the City for RPP or other permit that may include but is not limited to PII such as names, address, photo identification, vehicle registration (license plate and vehicle identification number), phone number and email address.

“Passport Automatic Occupancy Data Collection System” means the server and database whereby the Passport Parking Management System vendor, on behalf of the City, downloads, stores and transfers Parking Occupancy Analysis ALPR Read

Metadata stripped of any and all PII before being transferred to the goBerkeley program.

“Passport Parking Management System” means the servers and databases maintained by Passport Labs Incorporated, containing the database of the license plate numbers and other PII associated with Parking Permit Applications and Residential Parking Permits, and including historic parking citation data, to include Enforced Hits.

“PocketPEO” means a mobile device providing handheld ticket issuance and ALPR data reference capabilities.

“State Stolen ~~or Wanted~~ System” means information from the California Law Enforcement Telecommunications System's (CLETS) Department of Motor Vehicles (DMV) Stolen Vehicle System (SVS) database providing data regarding stolen vehicles.~~, and the Federal Bureau of Investigation's National Crime Information Center (NCIC) database of and wanted vehicles.~~

1302.3 AUTHORIZED AND PROHIBITED USES

Use of an ALPR is restricted to the purposes outlined below.

All data and images gathered by the ALPR are for official use by the Berkeley Police Department for Parking Enforcement Operations and may be retroactively queried in limited circumstances only as specified by this policy.

~~In addition, ALPR data may be used by the Finance, Information Technology (IT), Customer Service, and Public Works Departments only as specified herein this policy, and consistent with Parking Enforcement Operations and Parking Occupancy Analysis. Since such data may contain confidential information, it is notData that is considered confidential under recent state Supreme Court rulings is not open to public review, except as specified.~~

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Berkeley Police Department members or other Departments shall not use, or allow others to use the equipment or database records for any unauthorized purpose (Civil Code § 1798.90.51; Civil Code § 1798.90.53).

Anyone who engages in an impermissible use of the Genetec ALPR system or associated scan files or hot lists may be subject to administrative sanctions, up to and including termination, pursuant to and consistent with the relevant collective bargaining agreements and Department policies.

(a) An ALPR shall only be Deployed and used for Parking Enforcement Operations, and Parking Occupancy Analysis.

(b) ALPR data strictly obtained from Parking Enforcement Operations retained pursuant to this use policy, including data and metadata associated with ALPR Reads and Hits, may be used to support a specific criminal investigation only pursuant to a valid court order, subpoena, or a search warrant.

(c) The following uses of the Genetec ALPR System are specifically prohibited:

(1) Invasion of Privacy

~~Except when done pursuant to a court order, subpoena, or a search warrant, i~~It is a ~~violation of this Policy to utilize the ALPR to record license plates except those of vehicles that are exposed to public view (e.g., vehicles on a public road or street, or that are on private property but whose license plate(s) are visible from a public road, street, or a place to which members of the public have access, such as the parking lot of a shop or other business establishment).~~Existing laws prohibiting trespassing and unlawful search and seizure shall be followed.

(2) Harassment or Intimidation

It is a violation of this Policy to use the Genetec ALPR system to harass and/or intimidate any individual or group, pursuant to BPD General Order P-26.

(3) Use Based on a Protected Characteristic.

It is a violation of this Policy to use the ALPRs or associated scan files or hot lists solely because of a person's, or group's race, gender, religion, political affiliation, nationality, ethnicity, sexual orientation, disability, or other classification protected by state and federal law.

(4) Personal Use

It is a violation of this Policy to use the Genetec ALPR System or associated ALPR Read data or the State Stolen ~~or Wanted~~ System hot list~~s~~ for any personal purpose.

(5) First Amendment Rights

It is a violation of this Policy to use ALPRs or associated scan files or hot lists for the purpose or known effect of infringing upon First Amendment rights.

~~(6) Criminal Enforcement~~

~~It is a violation of this Policy to use or Deploy ALPRs to scan or canvass license plates in connection with any crime scene, patrol operation, or investigation.~~

~~(7) Use of Hot Lists~~

~~It is a violation of this Policy to use the Genetec ALPR System in conjunction with any hot list other than the State Stolen or Wanted System.~~

1302.4 DATA COLLECTION AND RETENTION

The Investigations Division Captain, or their designee, is responsible for ensuring proper collection and retention of ALPR data. Technical support and assistance shall be provided by the City of Berkeley's IT department and associated Genetec ALPR system providers/vendors as identified below.

IT's role will be limited to providing initial infrastructure set-up and accessing or viewing individual records or reports (potentially including PII or CLETS information as authorized by the Chief of Police), limited to the purposes ~~s~~ of testing the accuracy of the equipment. Genetec ALPR System data provided to Parking Control Officers may also contain confidential CLETS information and is not open to public review.

ALPR information gathered and retained by the Berkeley Police Department may only be used and shared with prosecutors or other law enforcement agencies pursuant to a valid court order, subpoena, or a search warrant and as limited by this policy.

(a) ALPR Read Images

ALPR Read Images ~~and Metadata~~ resulting from ALPR Reads stored locally on Parking Control Officer Vehicle laptops and PocketPEO shall be purged at least nightly.

In no case shall ALPR Read Images resulting from ALPR Reads be transmitted to or stored in the Genetec ALPR System.

(b) ALPR Reads Not Resulting in ALPR Hits

All ALPR Read Metadata from ALPR Reads transmitted and stored in the Genetec ALPR System shall be purged within five (5) days consistent with the City's 72-Hour Rule (BMC Section 14.36.050).

In no case shall ALPR Read Metadata in the form of license plate data or other PII be transmitted to or stored in the Passport Automatic Occupancy Data Collection System.

(c) ALPR Hits

All ALPR ~~Read Images,~~ Metadata~~,~~ and Hits resulting from ALPR Reads stored locally on Parking Control Officer Vehicle laptops and PocketPEO shall be purged at least nightly.

In no case shall data associated with ALPR Hits be transmitted to or stored in the Genetec ALPR System, nor shall license plate data or other PII included as part of ALPR Read Metadata be transmitted to or stored by the City for Parking Occupancy Analysis (goBerkeley)~~, to include the Passport Automatic Occupancy Data Collection System or as City Department records~~.

(d) Unenforced ALPR Hits

All erroneous and unenforced ALPR Hit data and Read Metadata shall be purged locally at least nightly.

(e) Enforced ALPR Hits

Only ALPR Read Images and Metadata associated with Enforced ALPR Hits shall be downloaded to the Passport Parking Management servers with a minimum retention period of one year ~~(Government Code § 34090.6)~~ and in accordance with the established records retention schedule. Thereafter, ALPR data should be purged unless it has become, or it is reasonable to believe it will become, evidence in a criminal action pursuant to a valid court order, subpoena, or a search warrant or civil action or is subject to a lawful action to produce records. In those circumstances the applicable data should be downloaded from the server onto portable media and booked into evidence.

1302.5 DATA ACCESS

(a) Only properly trained Parking Control Officers and information technology personnel are allowed access to the Genetec ALPR system or to collect ALPR information.

(b) No member of this department shall operate ALPR equipment or access ALPR data without first completing department-approved training, which shall include complying with this use policy.

(c) No ALPR operator may access California Law Enforcement Telecommunications System (CLETS) data unless otherwise authorized to do so pursuant to California Department of Justice's CLETS Policies, Practices, and Procedures Section 1.9.3 and Section 1.9.4

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(c~~d~~) If a Sworn officer is called to verify a stolen vehicle, i~~I~~f practicable, the officer should verify an ALPR response through the California Law Enforcement Telecommunications System (CLETS) before taking enforcement action that is based solely on an ALPR Hit.

~~(e) Police will not take any police action that restricts the freedom of any individual based solely on an ALPR Hit unless it has been validated as described above in (d).~~

~~(1) Police need to have reasonable suspicion and/or probable cause to make an enforcement stop of any vehicle. For example, if a vehicle is entered into the system because of its association with a wanted individual, Officers should attempt to visually match the driver to the description of the wanted subject prior to making the stop or should have another legal basis for making the stop.~~

~~(2) Prior to initiation of a stop of a vehicle or other intervention based on an ALPR Hit, Department members shall undertake the following:~~

~~(i) Verification of status on State Stolen or Wanted System.~~

~~An officer must receive confirmation from a Police Department Communications Dispatcher or other department computer device, that the license plate is still stolen, wanted, or otherwise of interest before proceeding (absent exigent circumstances).~~

~~(ii) Visual verification of license plate number.~~

(d) Sworn Officers shall visually verify that the license plate of interest matches identically with the ALPR Read Image of the license plate number captured (ALPR Read) by the ALPR, including both the alphanumeric characters of the license plate, state of issue, and vehicle descriptors before proceeding. Department members alerted to the fact that an observed motor vehicle's license plate is entered as an ALPR Hit in a specific State Stolen ~~or Wanted~~ System list are required to make a reasonable effort to confirm that a wanted person is actually in the vehicle and/or that a reasonable basis exists before a Department member would have a lawful basis to stop the vehicle.

1302.6 CIVIL LIBERTIES AND RIGHTS PROTECTION:

The Berkeley Police Department is dedicated to the most efficient utilization of its resources and services in its public safety endeavors. The Berkeley Police Department recognizes the need to protect its ownership and control over shared information and to protect the privacy and civil liberties of the public, in accordance with federal and state law. The procedures described within this policy (Data Access, Data Protection, Data Retention, Public Access and Third-~~-~~Party Data Sharing) protect against the unauthorized use of ALPR data. These policies ensure the data is not used in a way that would violate or infringe upon anyone's civil rights and/or liberties, including but not limited to impacts that may violate the First and Fourth Amendments and other potentially disparate or adverse impacts on any communities or groups.

The Berkeley Police Department does not permit the sharing of ALPR data gathered by the City or its contractors/subcontractors for the purpose of federal immigration enforcement, pursuant to the California Values Act (Government Code § 7282.5; Government Code § 7284.2 et seq) – these federal immigration agencies include Immigrations and Customs Enforcement (ICE) and Customs and Border Patrol (CPB).

1302.7 PUBLIC ACCESS

Non-law enforcement requests for information regarding a specific vehicle's license plate may be honored when the requester is the registered owner of the vehicle in question, and when providing such information will not invade the privacy of a third party. The requester in such cases must provide acceptable proof of his or her identity and of ownership of the vehicle in question.

1302.8 THIRD-PARTY DATA-SHARING

(a) Non-law enforcement requests for access to stored ALPR data related to parking management shall be processed according to this policy, and the Records Maintenance and Release Policy in accordance with applicable law.

(b) The ALPR data may be shared only with other law enforcement or prosecutorial agencies ~~for official law enforcement purposes or~~ as permitted by this policy and under

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no circumstances~~.~~ ~~ALPR data is subject to the provisions of BPD Policy 415, and hence may not~~ be shared with federal immigration enforcement officials.

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Requests for ALPR data by non-law enforcement or non-prosecutorial agencies will be processed as provided by this policy and ~~in~~ the Records Maintenance and Release Policy (Civil Code § 1798.90.55).

Aggregated ALPR data not related to specific criminal investigations authorized by a court order, subpoena, or search warrant shall not be released to any local, state or federal agency or entity without the express written consent of the City Manager and only in accordance with this Use Policy.

Third-party data-sharing shall be subject to non-privileged and non-confidential City Council notification pursuant to BMC 2.99.020 (2) (a).

1302.9 TRAINING AND ALPR ADMINISTRATOR

Training for the operation of ALPR technology shall be provided by BPD personnel. All BPD employees who utilize ALPR technology shall be provided a copy of this Surveillance Use Policy.

(1) The Investigations Division Captain shall be responsible for compliance with the requirements of Civil Code § 1798.90.5 et seq. This includes, but is not limited to (Civil Code § 1798.90.51; Civil Code § 1798.90.53):

(i) A description of the job title or other designation of the members and independent contractors who are authorized to use or access the Genetec ALPR system or to collect ALPR information.

(ii) Ensuring that training requirements are completed for authorized users. The Administrator shall ensure that members receive department-approved training for those authorized to use or access ALPRs (Civil Code § 1798.90.51; Civil Code § 1798.90.53).

(iii) A description of how the Genetec ALPR system will be monitored to ensure the security of the information and compliance with applicable privacy laws.

(iv) Procedures for system operators to maintain records of access in compliance with Civil Code§ 1798.90.52 and this Use Policy~~.~~

(v) The title and name of the current designee in overseeing the ALPR operation.

(vi) Ensuring this policy and related procedures are conspicuously posted on the City's website.

1302.10 AUDITING AND OVERSIGHT

Genetec ALPR System audits will be conducted by the Professional Standards Bureau's (PSD) Audit and Inspections Sergeant pursuant to ~~Municipal Code Section~~BMC 2.99.020 4. k. on a regular basis, at least biannually.

(1) Any unauthorized access or data breach shall be reported immediately to the City Manager.

(2) The audit shall be documented in the form of an internal department memorandum to the Chief of Police. The memorandum shall include any data errors found so that such errors can be corrected. After review by the Chief of Police, the memorandum and any associated documentation shall be placed into the annual report filed with the City Council pursuant to BMC Section 2.99.020 2. d. , published on the City of Berkeley website in an appropriate location, and retained by PSD.

1302.11 MAINTENANCE

Any installation and maintenance of ALPR equipment, as well as ALPR data retention and access, shall be managed by the Investigations Division Captain or his or her designee. The Investigations Division Captain will assign members under their command to administer the day-to-day operation of the ALPR equipment and data.

Kate Harrison
Councilmember District 4

REVISED AGENDA MATERIAL
for Supplemental Packet 2

Meeting Date: **November 30, 2021**

Item Number: **27**

Item Description: **Resolution Accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code**

Submitted by: **Councilmember Harrison**

The supplemental includes updates to the ALPR Use Policy as follows:

- Removes reference to Government Code Section 34090 consistent with SB 34 (providing for a local government to set ALPR retention limits).
- Clarifies that the definition of the State Stolen System includes the DMV's SVS database.
- Clarifies the type of data that is considered confidential pursuant to recent State Supreme Court rulings.
- Fixes inconsistency under the "Invasion of Privacy" section.
- Adds missing reference to state and federal law under "Use Based on a Protected Characteristic" section.
- Clarifies IT's role in maintaining accuracy and functionality of ALPR equipment.
- Further clarifies distinction between ALPR Read Images and ALPR Hits.
- Strikes extraneous language regarding Sworn Officer stolen vehicle verification procedures.
- Clarifies that ALPR data may only be shared with law enforcement or prosecutorial agencies as permitted by the Policy.
- Adds specific references to BMC sections under the auditing and oversight section.
- Adds other non-substantive changes.

2180 Milvia Street, Berkeley, CA 94704 Tel: 510.981.7140 TDD: 510.981.6903
E-Mail: *kharrison@CityofBerkeley.info*

Surveillance Use Policy – Automatic License Plate Readers

1302.1 PURPOSE

This Surveillance Use Policy is legally-enforceable pursuant to BMC 2.99.

The policy of the Berkeley Police Department is to utilize ALPR technology to capture and store digital license plate data and images for Parking Enforcement Operations and Parking Occupancy Analysis while recognizing the established privacy rights of the public.

1302.2 DEFINITIONS

“Alleged Parking Violation” means an alleged violation of time limits in parking areas designated by state and local law, or a violation of time limits and/or non-permit parking in the City’s RPP zones.

“ALPR Read Image” means images of license plates, vehicles, wheels or any other incidentally captured image.

“ALPR Read” means computer-readable data captured by an ALPR Reader, including ALPR Read Image and associated ALPR Read Metadata. ALPR Reads are transient means to create potential government records, to include Parking Occupancy Analysis data and Enforced Citations~~, and therefore shall not be considered a government record itself pursuant to Government Code § 34090.6~~.

“ALPR Hit” means an Alleged Parking Violation or State Stolen ~~or Wanted~~ System alert resulting from computer generated analysis of ALPR Reads by the Genetec ALPR System resulting in an apparent:

(1) match between an ALPR Read and ALPR Read Metadata stored in the Genetec ALPR System, to include the State Stolen ~~or Wanted~~ System; or

(2) incongruence between an ALPR Read and permit information stored in the Passport Parking Management System.

“ALPR Read Metadata” means any image-based or other metadata, including but not limited to, global positioning system coordinates, block face information, tire position information, digitized license plates in alphanumeric characters, and timestamps.

“Automated License Plate Reader” or “ALPR” means one or more Genetec AutoVu mobile cameras affixed to Parking Enforcement Scooters and combined with computer software and algorithms to read and convert images of license plates, the characters they contain, and associated ALPR Read Metadata related to Parking Enforcement Operations or Parking Occupancy Analysis into computer-readable data.

“Deploy” or “Deployment” means any operation or use of ALPR Readers affixed to Parking Enforcement Scooters.

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“Genetec ALPR System” means the computerized Genetec server and database that stores and pushes ALPR Read Metadata generated by ALPR Readers.

“Residential Parking Permits” or “RPP” means an annual, visitor, merchant or in-home care parking permit, typically represented by a vehicle’s license plate, and associated with the City’s Residential Parking Permit program across designated zones.

“Parking Enforcement Scooter” means the GO-4 three-wheeled parking enforcement vehicle.

“Parking Enforcement Officers” means employees of the City who work weekly rotations on Parking Enforcement Operations beats throughout the City and are properly trained to operate ALPRs and access the Genetec ALPR System.

“Parking Enforcement Operations” means Parking Enforcement Officer enforcement of parking regulations associated with local ordinances, the California Vehicle Code, and State Stolen ~~or Wanted~~ System enforcement through Parking Enforcement Scooter-based automated (ALPR) and non-automated means.

“Personally Identifiable Information” or “PII” means information:

(1) that directly identifies an individual (e.g., name, address, vehicle registration number, or other identifying number or code, telephone number, email address, etc.) or

(2) by which the City or other agency intends to identify specific individuals in conjunction with other data elements, i.e., indirect identification.

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“Parking Permit Application” means an application submitted to the City for RPP or other permit that may include but is not limited to PII such as names, address, photo identification, vehicle registration (license plate and vehicle identification number), phone number and email address.

“Passport Automatic Occupancy Data Collection System” means the server and database whereby the Passport Parking Management System vendor, on behalf of the City, downloads, stores and transfers Parking Occupancy Analysis ALPR Read

Metadata stripped of any and all PII before being transferred to the goBerkeley program.

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"PocketPEO" means a mobile device providing handheld ticket issuance and ALPR data reference capabilities.

"State Stolen ~~or Wanted~~ System" means information from the California Law Enforcement Telecommunications System's (CLETS) Department of Motor Vehicles (DMV) Stolen Vehicle System (SVS) database providing data regarding stolen vehicles.~~,~~ ~~and the Federal Bureau of Investigation's National Crime Information Center (NCIC) database of~~ and ~~wanted vehicles.~~

1302.3 AUTHORIZED AND PROHIBITED USES

Use of an ALPR is restricted to the purposes outlined below.

All data and images gathered by the ALPR are for official use by the Berkeley Police Department for Parking Enforcement Operations and may be retroactively queried in limited circumstances only as specified by this policy.

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Berkeley Police Department members or other Departments shall not use, or allow others to use the equipment or database records for any unauthorized purpose (Civil Code § 1798.90.51; Civil Code § 1798.90.53).

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(a) An ALPR shall only be Deployed and used for Parking Enforcement Operations, and Parking Occupancy Analysis.

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(1) Invasion of Privacy

~~Except when done pursuant to a court order, subpoena, or a search warrant, i~~It is a violation of this Policy to utilize the ALPR to record license plates except those of vehicles that are exposed to public view (e.g., vehicles on a public road or street, or that are on private property but whose license plate(s) are visible from a public road, street, or a place to which members of the public have access, such as the parking lot of a shop or other business establishment).

(2) Harassment or Intimidation

It is a violation of this Policy to use the Genetec ALPR system to harass and/or intimidate any individual or group.

(3) Use Based on a Protected Characteristic.

It is a violation of this Policy to use the ALPRs or associated scan files or hot lists solely because of a person's, or group's race, gender, religion, political affiliation, nationality, ethnicity, sexual orientation, disability, or other classification protected by state and federal law.

(4) Personal Use

It is a violation of this Policy to use the Genetec ALPR System or associated ALPR Read data or the State Stolen ~~or Wanted~~ System hot list~~s~~ for any personal purpose.

(5) First Amendment Rights

It is a violation of this Policy to use ALPRs or associated scan files or hot lists for the purpose or known effect of infringing upon First Amendment rights.

(6) Criminal Enforcement

It is a violation of this Policy to use or Deploy ALPRs to scan or canvass license plates in connection with any crime scene, patrol operation, or investigation.

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It is a violation of this Policy to use the Genetec ALPR System in conjunction with any hot list other than the State Stolen ~~or Wanted~~ System.

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The Investigations Division Captain, or their designee, is responsible for ensuring proper collection and retention of ALPR data. Technical support and assistance shall be provided by the City of Berkeley's IT department and associated Genetec ALPR system providers/vendors as identified below.

IT's role will be limited to providing initial infrastructure set-up and accessing or viewing individual records or reports (potentially including PII or CLETS information as authorized by the Chief of Police), limited to the purposes of testing the accuracy of the equipment. Genetec ALPR System data provided to Parking Control Officers may also contain confidential CLETS information and is not open to public review.

ALPR information gathered and retained by the Berkeley Police Department may only be used and shared with prosecutors or other law enforcement agencies pursuant to a valid court order, subpoena, or a search warrant and as limited by this policy.

(a) ALPR Read Images

ALPR Read Images ~~and Metadata~~ resulting from ALPR Reads stored locally on Parking Control Officer Vehicle laptops and PocketPEO shall be purged at least nightly.

In no case shall ALPR Read Images resulting from ALPR Reads be transmitted to or stored in the Genetec ALPR System.

(b) ALPR Reads Not Resulting in ALPR Hits

All ALPR Read Metadata from ALPR Reads transmitted and stored in the Genetec ALPR System shall be purged within five (5) days consistent with the City's 72-Hour Rule (BMC Section 14.36.050).

In no case shall ALPR Read Metadata in the form of license plate data or other PII be transmitted to or stored in the Passport Automatic Occupancy Data Collection System.

(c) ALPR Hits

All ALPR ~~Read Images,~~ Metadata~~,~~ and Hits resulting from ALPR Reads stored locally on Parking Control Officer Vehicle laptops and PocketPEO shall be purged at least nightly.

In no case shall data associated with ALPR Hits be transmitted to or stored in the Genetec ALPR System, nor shall license plate data or other PII included as part of ALPR Read Metadata be transmitted to or stored by the City for Parking Occupancy Analysis (goBerkeley)~~, to include the Passport Automatic Occupancy Data Collection System or as City Department records~~.

(d) Unenforced ALPR Hits

All erroneous and unenforced ALPR Hit data and Read Metadata shall be purged locally at least nightly.

(e) Enforced ALPR Hits

Only ALPR Read Images and Metadata associated with Enforced ALPR Hits shall be downloaded to the Passport Parking Management servers with a minimum retention period of one year ~~(Government Code § 34090.6)~~ and in accordance with the established records retention schedule. Thereafter, ALPR data should be purged unless it has become, or it is reasonable to believe it will become, evidence in a criminal action pursuant to a valid court order, subpoena, or a search warrant or civil action or is subject to a lawful action to produce records. In those circumstances the applicable data should be downloaded from the server onto portable media and booked into evidence.

1302.5 DATA ACCESS

(a) Only properly trained Parking Control Officers and information technology personnel are allowed access to the Genetec ALPR system or to collect ALPR information.

(b) No member of this department shall operate ALPR equipment or access ALPR data without first completing department-approved training, which shall include complying with this use policy.

(c) No ALPR operator may access California Law Enforcement Telecommunications System (CLETS) data unless otherwise authorized to do so.

(c~~d~~) If a Sworn officer is called to verify a stolen vehicle, i~~I~~f practicable, the officer should verify an ALPR response through the California Law Enforcement Telecommunications System (CLETS) before taking enforcement action that is based solely on an ALPR Hit.

~~(e) Police will not take any police action that restricts the freedom of any individual based solely on an ALPR Hit unless it has been validated as described above in (d).~~

~~(1) Police need to have reasonable suspicion and/or probable cause to make an enforcement stop of any vehicle. For example, if a vehicle is entered into the system because of its association with a wanted individual, Officers should attempt to visually match the driver to the description of the wanted subject prior to making the stop or should have another legal basis for making the stop.~~

~~(2) Prior to initiation of a stop of a vehicle or other intervention based on an ALPR Hit, Department members shall undertake the following:~~

~~(i) Verification of status on State Stolen or Wanted System.~~

~~An officer must receive confirmation from a Police Department Communications Dispatcher or other department computer device, that the license plate is still stolen, wanted, or otherwise of interest before proceeding (absent exigent circumstances).~~

~~(ii) Visual verification of license plate number.~~

(d) Sworn Officers shall visually verify that the license plate of interest matches identically with the ALPR Read Image of the license plate number captured (ALPR Read) by the ALPR, including both the alphanumeric characters of the license plate, state of issue, and vehicle descriptors before proceeding. Department members alerted to the fact that an observed motor vehicle's license plate is entered as an ALPR Hit in a specific State Stolen ~~or Wanted~~ System list are required to make a reasonable effort to confirm that a wanted person is actually in the vehicle and/or that a reasonable basis exists before a Department member would have a lawful basis to stop the vehicle.

1302.6 CIVIL LIBERTIES AND RIGHTS PROTECTION:

The Berkeley Police Department is dedicated to the most efficient utilization of its resources and services in its public safety endeavors. The Berkeley Police Department recognizes the need to protect its ownership and control over shared information and to protect the privacy and civil liberties of the public, in accordance with federal and state law. The procedures described within this policy (Data Access, Data Protection, Data Retention, Public Access and Third-~~-~~Party Data Sharing) protect against the unauthorized use of ALPR data. These policies ensure the data is not used in a way that would violate or infringe upon anyone's civil rights and/or liberties, including but not limited to impacts that may violate the First and Fourth Amendments and other potentially disparate or adverse impacts on any communities or groups.

The Berkeley Police Department does not permit the sharing of ALPR data gathered by the City or its contractors/subcontractors for the purpose of federal immigration enforcement, pursuant to the California Values Act (Government Code § 7282.5; Government Code § 7284.2 et seq) – these federal immigration agencies include Immigrations and Customs Enforcement (ICE) and Customs and Border Patrol (CPB).

1302.7 PUBLIC ACCESS

Non-law enforcement requests for information regarding a specific vehicle's license plate may be honored when the requester is the registered owner of the vehicle in question, and when providing such information will not invade the privacy of a third party. The requester in such cases must provide acceptable proof of his or her identity and of ownership of the vehicle in question.

1302.8 THIRD-PARTY DATA-SHARING

(a) Non-law enforcement requests for access to stored ALPR data related to parking management shall be processed according to this policy, and the Records Maintenance and Release Policy in accordance with applicable law.

(b) The ALPR data may be shared only with other law enforcement or prosecutorial agencies ~~for official law enforcement purposes or~~ as permitted by this policy and under no circumstances~~.~~ ~~ALPR data is subject to the provisions of BPD Policy 415, and hence may not~~ be shared with federal immigration enforcement officials.

Requests for ALPR data by non-law enforcement or non-prosecutorial agencies will be processed as provided by this policy and ~~in~~ the Records Maintenance and Release Policy (Civil Code § 1798.90.55).

Aggregated ALPR data not related to specific criminal investigations authorized by a court order, subpoena, or search warrant shall not be released to any local, state or federal agency or entity without the express written consent of the City Manager and only in accordance with this Use Policy.

Third-party data-sharing shall be subject to non-privileged and non-confidential City Council notification pursuant to BMC 2.99.020 (2) (a).

1302.9 TRAINING AND ALPR ADMINISTRATOR

Training for the operation of ALPR technology shall be provided by BPD personnel. All BPD employees who utilize ALPR technology shall be provided a copy of this Surveillance Use Policy.

(1) The Investigations Division Captain shall be responsible for compliance with the requirements of Civil Code § 1798.90.5 et seq. This includes, but is not limited to (Civil Code § 1798.90.51; Civil Code § 1798.90.53):

(i) A description of the job title or other designation of the members and independent contractors who are authorized to use or access the Genetec ALPR system or to collect ALPR information.

(ii) Ensuring that training requirements are completed for authorized users. The Administrator shall ensure that members receive department-approved training for those authorized to use or access ALPRs (Civil Code § 1798.90.51; Civil Code § 1798.90.53).

(iii) A description of how the Genetec ALPR system will be monitored to ensure the security of the information and compliance with applicable privacy laws.

(iv) Procedures for system operators to maintain records of access in compliance with Civil Code§ 1798.90.52 and this Use Policy~~.~~

(v) The title and name of the current designee in overseeing the ALPR operation.

(vi) Ensuring this policy and related procedures are conspicuously posted on the City's website.

1302.10 AUDITING AND OVERSIGHT

Genetec ALPR System audits will be conducted by the Professional Standards Bureau's (PSD) Audit and Inspections Sergeant pursuant to ~~Municipal Code Section~~BMC 2.99.020 4. k. on a regular basis, at least biannually.

(1) Any unauthorized access or data breach shall be reported immediately to the City Manager.

(2) The audit shall be documented in the form of an internal department memorandum to the Chief of Police. The memorandum shall include any data errors found so that such errors can be corrected. After review by the Chief of Police, the memorandum and

any associated documentation shall be placed into the annual report filed with the City Council pursuant to BMC Section 2.99.020 2. d., published on the City of Berkeley website in an appropriate location, and retained by PSD.

1302.11 MAINTENANCE

Any installation and maintenance of ALPR equipment, as well as ALPR data retention and access, shall be managed by the Investigations Division Captain. The Investigations Division Captain will assign members under their command to administer the day-to-day operation of the ALPR equipment and data.

Kate Harrison
Councilmember District 4

REVISED AGENDA MATERIAL
for Supplemental Packet 1

Meeting Date: **November 30, 2021**

Item Number: **27**

Item Description: **Resolution Accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code**

Submitted by: **Councilmembers Harrison and Hahn**

Amends Resolution to adopt a Surveillance Technology Use Policy for Automatic License Plate Readers as required by the Surveillance Technology Ordinance.

To date, Council deferred adoption of a Surveillance Use Policy pursuant to Sections 2.99.020 and 2.99.050 of the Ordinance for Automatic License Plate Readers, including in order to draft a policy with enhanced civil liberties protections. Berkeley Police Department Administrative Order #001-2016, prepared in 2016 before adoption of the Surveillance Ordinance, has served as a de facto ALPR policy, however Administrative Order #001-2016 is out of date and does not satisfy the specific requirements of the Surveillance Ordinance. Adoption of an earlier proposed update to the use policy for ALPRs was deferred by Council as it did not contain sufficient information about data retention and sharing and protection of civil liberties.

The attached Use Policy supersedes Administrative Order #001-2016 and satisfies the requirements of the Ordinance, including providing a legally-enforceable Surveillance Use Policy and enhanced civil liberties protections.

Use Policy Overview:

- Provides key definitions.
- Authorizes ALPR for Parking Enforcement Operations and Parking Occupancy Analysis.
- Enumerates specifically prohibited uses of ALPR that may impact civil liberties.
- Incorporates key provisions from BPD's previously proposed Policy 1302.

- Addresses the Police Review Commission's concerns, as expressed in their September 11, 2019 letter to Council pursuant to Section 2.99.030, about the previously proposed Use Policy 1302.
- Specifies appropriate data retention periods for ALPR reads and hits.
- Specifies that personally identifiable ALPR data will not be sent to goBerkeley (as confirmed by Transportation Division staff) as part of Parking Occupancy Analysis.
- Specifies that ALPR data obtained from Parking Enforcement Operations, including data and metadata associated with ALPR Reads and Hits, may be used to support a specific criminal investigation only pursuant to a valid court order, subpoena, or a search warrant.
- Restates the City's policy of not sharing of ALPR data gathered by the City or its contractors/subcontractors for purpose of federal immigration enforcement.
- Specifies that third-party data-sharing shall be subject to non-privileged and non-confidential City Council notification pursuant to BMC 2.99.020.

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

A RESOLUTION ACCEPTING THE ANNUAL SURVEILLANCE TECHNOLOGY REPORT FOR AUTOMATIC LICENSE PLATE READERS, GPS TRACKERS, BODY WORN CAMERAS, AND THE STREET LEVEL IMAGERY PROJECT AND ADOPTING A SURVEILLANCE TECHNOLOGY USE POLICY FOR AUTOMATIC LICENSE PLATE READERS

WHEREAS, on March 27, 2018, the City Council adopted Ordinance 7,592-N.S., which is known as the Surveillance Technology Use and Community Safety Ordinance ("Ordinance"); and

WHEREAS, Section 2.99.070 of the Ordinance requires that the City Manager must submit to the City Council a Surveillance Technology Report as defined by Section 2.99.020(2) of the Ordinance at the first regular City Council meeting in November; and

WHEREAS, the Surveillance Technology Reports satisfy the requirements of the Ordinance~~.~~; and

WHEREAS, Council deferred adoption of a Surveillance Use Policy pursuant to Sections 2.99.020 and 2.99.050 of the Ordinance for Automatic License Plate Readers in order to draft a policy with enhanced civil liberties protections, and heretofore Berkeley Police Department Administrative Order #001-2016, prepared in 2016 before passage of the Surveillance Ordinance, has served as a de facto ALPR policy; and

WHEREAS, the attached Use Policy supersedes Administrative Order #001-2016 and satisfies the requirements of the Ordinance, including providing a legally-enforceable Surveillance Use Policy and enhanced civil liberties protections.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the Council hereby accepts the Surveillance Technology Reports for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project and adopts a Surveillance Technology Use Policy for Automatic License Plate Readers.

Attachment
1. Surveillance Use Policy – Automatic License Plate Readers

Surveillance Use Policy – Automatic License Plate Readers

1302.1 PURPOSE

This Surveillance Use Policy is legally-enforceable pursuant to BMC 2.99.

The policy of the Berkeley Police Department is to utilize ALPR technology to capture and store digital license plate data and images for Parking Enforcement Operations and Parking Occupancy Analysis while recognizing the established privacy rights of the public.

1302.2 DEFINITIONS

"Alleged Parking Violation" means an alleged violation of time limits in parking areas designated by state and local law, or a violation of time limits and/or non-permit parking in the City's RPP zones.

"ALPR Read Image" means images of license plates, vehicles, wheels or any other incidentally captured image.

"ALPR Read" means computer-readable data captured by an ALPR Reader, including ALPR Read Image and associated ALPR Read Metadata. ALPR Reads are transient means to create potential government records, to include Parking Occupancy Analysis data and Enforced Citations, and therefore shall not be considered a government record itself pursuant to Government Code § 34090.6.

"ALPR Hit" means an Alleged Parking Violation or State Stolen or Wanted System alert resulting from computer generated analysis of ALPR Reads by the Genetec ALPR System resulting in an apparent:

(1) match between an ALPR Read and ALPR Read Metadata stored in the Genetec ALPR System, to include the State Stolen or Wanted System; or

(2) incongruence between an ALPR Read and permit information stored in the Passport Parking Management System.

"ALPR Read Metadata" means any image-based or other metadata, including but not limited to, global positioning system coordinates, block face information, tire position information, digitized license plates in alphanumeric characters, and timestamps.

"Automated License Plate Reader" or "ALPR" means one or more Genetec AutoVu mobile cameras affixed to Parking Enforcement Scooters and combined with computer software and algorithms to read and convert images of license plates, the characters they contain, and associated ALPR Read Metadata related to Parking Enforcement Operations or Parking Occupancy Analysis into computer-readable data.

"Deploy" or "Deployment" means any operation or use of ALPR Readers affixed to Parking Enforcement Scooters.

“Enforced ALPR Hit” means an Alleged Parking Violation confirmed by a Parking Enforcement Officer that results in the transmission of associated ALPR Read Image and ALPR Read Metadata to the Passport Parking Management System for storage in a database as a government record for the purpose of citation processing.

“Genetec ALPR System” means the computerized Genetec server and database that stores and pushes ALPR Read Metadata generated by ALPR Readers.

“Residential Parking Permits” or “RPP” means an annual, visitor, merchant or in-home care parking permit, typically represented by a vehicle’s license plate, and associated with the City’s Residential Parking Permit program across designated zones.

“Parking Enforcement Scooter” means the GO-4 three-wheeled parking enforcement vehicle.

“Parking Enforcement Officers” means employees of the City who work weekly rotations on Parking Enforcement Operations beats throughout the City and are properly trained to operate ALPRs and access the Genetec ALPR System.

“Parking Enforcement Operations” means Parking Enforcement Officer enforcement of parking regulations associated with local ordinances, the California Vehicle Code, and State Stolen or Wanted System enforcement through Parking Enforcement Scooter-based automated (ALPR) and non-automated means.

“Personally Identifiable Information” or “PII” means information:

(1) that directly identifies an individual (e.g., name, address, vehicle registration number, or other identifying number or code, telephone number, email address, etc.) or

(2) by which the City or other agency intends to identify specific individuals in conjunction with other data elements, i.e., indirect identification.

“Parking Occupancy Analysis” means ongoing computational or algorithmic analyses performed by Passport Parking Management System or the City of Berkeley on ALPR Read Metadata regarding the occupancy of total parking spaces across commercial districts as part of goBerkeley, the City's data-driven, demand-responsive parking management program. ALPR Read Metadata data associated with Parking Occupancy Analysis shall not include any license plate or other PII information.

“Parking Permit Application” means an application submitted to the City for RPP or other permit that may include but is not limited to PII such as names, address, photo identification, vehicle registration (license plate and vehicle identification number), phone number and email address.

“Passport Automatic Occupancy Data Collection System” means the server and database whereby the Passport Parking Management System vendor, on behalf of the City, downloads, stores and transfers Parking Occupancy Analysis ALPR Read

Metadata stripped of any and all PII before being transferred to the goBerkeley program.

“Passport Parking Management System” means the servers and databases maintained by Passport Labs Incorporated, containing the database of the license plate numbers and other PII associated with Parking Permit Applications and Residential Parking Permits, and including historic parking citation data, to include Enforced Hits.

“PocketPEO” means a mobile device providing handheld ticket issuance and ALPR data reference capabilities.

“State Stolen or Wanted System” means information from the California Law Enforcement Telecommunications System's (CLETS) Department of Motor Vehicles (DMV) Stolen Vehicle System (SVS) database providing data regarding stolen vehicles, and the Federal Bureau of Investigation's National Crime Information Center (NCIC) database of wanted vehicles.

1302.3 AUTHORIZED AND PROHIBITED USES

Use of an ALPR is restricted to the purposes outlined below.

All data and images gathered by the ALPR are for official use by the Berkeley Police Department for Parking Enforcement Operations and may be retroactively queried in limited circumstances only as specified by this policy.

In addition, ALPR data may be used by the Finance, Information Technology (IT), Customer Service, and Public Works Departments as specified herein and consistent with Parking Enforcement Operations and Parking Occupancy Analysis. Since such data may contain confidential information, it is not open to public review, except as specified.

Berkeley Police Department members or other Departments shall not use, or allow others to use the equipment or database records for any unauthorized purpose (Civil Code § 1798.90.51; Civil Code § 1798.90.53).

Anyone who engages in an impermissible use of the Genetec ALPR system or associated scan files or hot lists may be subject to administrative sanctions, up to and including termination, pursuant to and consistent with the relevant collective bargaining agreements and Department policies.

(a) An ALPR shall only be Deployed and used for Parking Enforcement Operations, and Parking Occupancy Analysis.

(b) ALPR data strictly obtained from Parking Enforcement Operations, including data and metadata associated with ALPR Reads and Hits, may be used to support a specific criminal investigation only pursuant to a valid court order, subpoena, or a search warrant.

(c) The following uses of the Genetec ALPR System are specifically prohibited:

(1) Invasion of Privacy

Except when done pursuant to a court order, subpoena, or a search warrant, it is a violation of this Policy to utilize the ALPR to record license plates except those of vehicles that are exposed to public view (e.g., vehicles on a public road or street, or that are on private property but whose license plate(s) are visible from a public road, street, or a place to which members of the public have access, such as the parking lot of a shop or other business establishment).

(2) Harassment or Intimidation

It is a violation of this Policy to use the Genetec ALPR system to harass and/or intimidate any individual or group.

(3) Use Based on a Protected Characteristic.

It is a violation of this Policy to use the ALPRs or associated scan files or hot lists solely because of a person's, or group's race, gender, religion, political affiliation, nationality, ethnicity, sexual orientation, disability, or other classification protected by

(4) Personal Use

It is a violation of this Policy to use the Genetec ALPR System or associated ALPR Read data or State Stolen or Wanted System lists for any personal purpose.

(5) First Amendment Rights

It is a violation of this Policy to use ALPRs or associated scan files or hot lists for the purpose or known effect of infringing upon First Amendment rights.

(6) Criminal Enforcement

It is a violation of this Policy to use or Deploy ALPRs to scan or canvass license plates in connection with any crime scene, patrol operation, or investigation.

(7) Use of Hot Lists

It is a violation of this Policy to use the Genetec ALPR System in conjunction with any hot list other than the State Stolen or Wanted System.

1302.4 DATA COLLECTION AND RETENTION

The Investigations Division Captain, or their designee, is responsible for ensuring proper collection and retention of ALPR data. Technical support and assistance shall be provided by the City of Berkeley's IT department and associated Genetec ALPR system providers/vendors as identified below.

IT staff will not have the ability to access or view individual records or reports, as they may contain PII information they are not authorized to receive. Genetec ALPR System data provided to Parking Control Officers may also contain confidential CLETS information and is not open to public review. IT's role will be limited to providing initial infrastructure set-up, unless particular IT staff members have been cleared by DOJ background checks and authorized by the Chief of Police to receive PII or CLETS information.

ALPR information gathered and retained by the Berkeley Police Department may only be used and shared with prosecutors or other law enforcement agencies pursuant to a valid court order, subpoena, or a search warrant and as limited by this policy.

(a) ALPR Reads

ALPR Read Images and Metadata resulting from ALPR Reads stored locally on Parking Control Officer Vehicle laptops and PocketPEO shall be purged at least nightly.

In no case shall ALPR Read Images resulting from ALPR Reads be transmitted to or stored in the Genetec ALPR System.

(b) ALPR Reads Not Resulting in ALPR Hits

All ALPR Read Metadata from ALPR Reads transmitted and stored in the Genetec ALPR System shall be purged within five (5) days consistent with the City's 72-Hour Rule (BMC Section 14.36.050).

In no case shall ALPR Read Metadata in the form of license plate data or other PII be transmitted to or stored in the Passport Automatic Occupancy Data Collection System.

(c) ALPR Hits

All ALPR Read Images, Metadata, and Hits resulting from ALPR Reads stored locally on Parking Control Officer Vehicle laptops and PocketPEO shall be purged at least nightly.

In no case shall data associated with ALPR Hits be transmitted to or stored in the Genetec ALPR System, or license plate data or other PII included as part of ALPR Read Metadata be transmitted to or stored by the City for Parking Occupancy Analysis, to include the Passport Automatic Occupancy Data Collection System or as City Department records.

(d) Unenforced ALPR Hits

All erroneous and unenforced ALPR Hit data and Read Metadata shall be purged locally at least nightly.

(e) Enforced ALPR Hits

Only ALPR Read Images and Metadata associated with Enforced ALPR Hits shall be downloaded to the Passport Parking Management servers with a minimum retention period of one year (Government Code § 34090.6) and in accordance with the established records retention schedule. Thereafter, ALPR data should be purged unless it has become, or it is reasonable to believe it will become, evidence in a criminal action pursuant to a valid court order, subpoena, or a search warrant or civil action or is subject to a lawful action to produce records. In those circumstances the applicable data should be downloaded from the server onto portable media and booked into evidence.

1302.5 DATA ACCESS

(a) Only properly trained parking control officers and information technology personnel are allowed access to the Genetec ALPR system or to collect ALPR information.

(b) No member of this department shall operate ALPR equipment or access ALPR data without first completing department-approved training.

(c) No ALPR operator may access California Law Enforcement Telecommunications System (CLETS) data unless otherwise authorized to do so.

(d) If practicable, the officer should verify an ALPR response through the California Law Enforcement Telecommunications System (CLETS) before taking enforcement action that is based solely on an ALPR Hit.

(e) Police will not take any police action that restricts the freedom of any individual based solely on an ALPR Hit unless it has been validated.

(1) Police need to have reasonable suspicion and/or probable cause to make an enforcement stop of any vehicle. For example, if a vehicle is entered into the system because of its association with a wanted individual, Officers should attempt to visually match the driver to the description of the wanted subject prior to making the stop or should have another legal basis for making the stop.

(2) Prior to initiation of a stop of a vehicle or other intervention based on an ALPR Hit, Department members shall undertake the following:

(i) Verification of status on State Stolen or Wanted System.

An officer must receive confirmation from a Police Department Communications Dispatcher or other department computer device, that the license plate is still stolen, wanted, or otherwise of interest before proceeding (absent exigent circumstances).

(ii) Visual verification of license plate number.

Officers shall visually verify that the license plate of interest matches identically with the ALPR Read Image of the license plate number captured (ALPR Read) by the ALPR, including both the alphanumeric characters of the license plate, state of issue, and vehicle descriptors before proceeding. Department members alerted to the fact that an observed motor vehicle's license plate is entered as an ALPR Hit in a specific State Stolen or Wanted System list are required to make a reasonable effort to confirm that a wanted person is actually in the vehicle and/or that a reasonable basis exists before a Department member would have a lawful basis to stop the vehicle.

1302.6 CIVIL LIBERTIES AND RIGHTS PROTECTION:

The Berkeley Police Department is dedicated to the most efficient utilization of its resources and services in its public safety endeavors. The Berkeley Police Department recognizes the need to protect its ownership and control over shared information and to protect the privacy and civil liberties of the public, in accordance with federal and state law. The procedures described within this policy (Data Access, Data Protection, Data Retention, Public Access and Third Party Data Sharing) protect against the unauthorized use of ALPR data. These policies ensure the data is not used in a way that would violate or infringe upon anyone's civil rights and/or liberties, including but not limited to impacts that may violate the First and Fourth Amendments and other potentially disparate or adverse impacts on any communities or groups.

The Berkeley Police Department does not permit the sharing of ALPR data gathered by the City or its contractors/subcontractors for purpose of federal immigration enforcement, pursuant to the California Values Act (Government Code § 7282.5; Government Code § 7284.2 et seq) – these federal immigration agencies include Immigrations and Customs Enforcement (ICE) and Customs and Border Patrol (CPB).

1302.7 PUBLIC ACCESS

(a) Non-law enforcement requests for access to stored ALPR data shall be processed according to the Records Maintenance and Release Policy in accordance with applicable law.

(b) Non-law enforcement requests for information regarding a specific vehicle's license plate may be honored when the requester is the registered owner of the vehicle in question, and when providing such information will not invade the privacy of a third party. The requester in such cases must provide acceptable proof of his or her identity and of ownership of the vehicle in question.

1302.8 THIRD-PARTY DATA-SHARING

The ALPR data may be shared only with other law enforcement or prosecutorial agencies for official law enforcement purposes or as permitted by this policy. ALPR data is subject to the provisions of BPD Policy 415, and hence may not be shared with federal immigration enforcement officials.

Requests for ALPR data by non-law enforcement or non-prosecutorial agencies will be processed as provided in the Records Maintenance and Release Policy (Civil Code § 1798.90.55).

Aggregated ALPR data not related to specific criminal investigations authorized by a court order, subpoena, or search warrant shall not be released to any local, state or federal agency or entity without the express written consent of the City Manager.

Third-party data-sharing shall be subject to non-privileged and non-confidential City Council notification pursuant to BMC 2.99.020 (2) (a).

1302.9 TRAINING AND ALPR ADMINISTRATOR

Training for the operation of ALPR technology shall be provided by BPD personnel. All BPD employees who utilize ALPR technology shall be provided a copy of this Surveillance Use Policy.

(1) The Investigations Division Captain shall be responsible for compliance with the requirements of Civil Code § 1798.90.5 et seq. This includes, but is not limited to (Civil Code § 1798.90.51; Civil Code § 1798.90.53):

(i) A description of the job title or other designation of the members and independent contractors who are authorized to use or access the Genetec ALPR system or to collect ALPR information.

(ii) Ensuring that training requirements are completed for authorized users. The Administrator shall ensure that members receive department-approved training for those authorized to use or access ALPRs (Civil Code § 1798.90.51; Civil Code § 1798.90.53).

(iii) A description of how the Genetec ALPR system will be monitored to ensure the security of the information and compliance with applicable privacy laws.

(iv) Procedures for system operators to maintain records of access in compliance with Civil Code§ 1798.90.52.

(v) The title and name of the current designee in overseeing the ALPR operation.

(vi) Ensuring this policy and related procedures are conspicuously posted on the City's website.

1302.10 AUDITING AND OVERSIGHT

Genetec ALPR System audits will be conducted by the Professional Standards Bureau's Audit and Inspections Sergeant pursuant to Municipal Code Section 2.99 on a regular basis, at least biannually.

(1) Any unauthorized access or data breach shall be reported immediately to the City Manager.

(2) The audit shall be documented in the form of an internal department memorandum to the Chief of Police. The memorandum shall include any data errors found so that such errors can be corrected. After review by the Chief of Police, the memorandum and any associated documentation shall be placed into the annual report filed with the City Council pursuant to Section 2.99, published on the City of Berkeley website in an appropriate location, and retained by PSD.

1302.11 MAINTENANCE

Any installation and maintenance of ALPR equipment, as well as ALPR data retention and access, shall be managed by the Investigations Division Captain. The Investigations Division Captain will assign members under their command to administer the day-to-day operation of the ALPR equipment and data.

Office of the City Manager

ACTION CALENDAR
March 22, 2022
(Continued from January 25, 2022)

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Jennifer Louis, Interim Chief of Police
LaTanya Bellow, Interim Deputy City Manager

Subject: Resolution Accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code

RECOMMENDATION

Adopt a Resolution accepting the Surveillance Technology Report for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project Pursuant to Chapter 2.99 of the Berkeley Municipal Code.

FISCAL IMPACTS OF RECOMMENDATION

There are no fiscal impacts associated with adopting the attached resolution.

CURRENT SITUATION AND ITS EFFECTS

On March 27, 2018, the City Council adopted Ordinance 7,592-N.S., adding Chapter 2.99 to the Berkeley Municipal Code, which is also known as the Surveillance Technology Use and Community Safety Ordinance (“Ordinance”). The purpose of the Ordinance is to provide transparency surrounding the use of surveillance technology, as defined by Section 2.99.020 in the Ordinance, and to ensure that decisions surrounding the acquisition and use of surveillance technology consider the impacts that such technology may have on civil rights and civil liberties. Further, the Ordinance requires that the City evaluate all costs associated with the acquisition of surveillance technology and regularly report on their use.

The Ordinance imposes various reporting requirements on the City Manager and staff. The purpose of this staff report and attached resolution is to satisfy the annual reporting requirement as outlined in Section 2.99.070.

One of the reporting categories of the surveillance technology use is whether complaints have been received by the community about the various technologies. To date Berkeley Police Department Internal Affairs Bureau (IAB) has not received any external personnel complaints surrounding the use of Automatic License Plate Readers, GPS Trackers, or Body Worn Cameras. External complaints from community members can be made in writing, via email, in person or via telephone. Complaints can be received with direct communication to Internal Affairs from the complainant and/or be received by any member of the Department and then forwarded through the chain of command. If a community member initiates a complaint against a subject employee and during the investigation it is determined the subject employee violated policy regarding the misuse of technology, an additional complaint is initiated by the Chief of Police.

Community members also have the right to initiate complaints against employees of BPD by reporting directly to the Police Accountability Board (PAB). The Director of Police Accountability notifies the Chief of Police when an investigation into a complaint is initiated by the PAB, which would prompt a parallel IAB investigation.

Attached to this staff report are Surveillance Technology Reports for Automatic License Plater Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project.

BACKGROUND

On March 27, 2018, the City Council adopted Ordinance 7,592-N.S., adding Chapter 2.99 to the Berkeley Municipal Code, which is also known as the Surveillance Technology Use and Community Safety Ordinance. Section 2.99.070 of the Ordinance requires that the City Manager must submit to the City Council a Surveillance Technology Report as defined by Section 2.99.020(2) of the Ordinance at the first regular City Council meeting in November.

For each of the four technologies, the Surveillance Technology Reports were prepared to satisfy the specific, section-by-section requirements of the Ordinance, and are attached to this report.

The Surveillance Technology Use Policy for ALPR technology is still outstanding due Council questions about policy language, scheduling and directed focus during COVID-19. This item will be returned to the Council agenda in early 2022.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable environmental effects or opportunities associated with the content of this report.

RATIONALE FOR RECOMMENDATION

City Council is being requested to adopt the attached resolution for the City to be in compliance with the Ordinance.

ALTERNATIVE ACTIONS CONSIDERED

City Council could decide not to adopt the resolution.

CONTACT PERSON

LaTanya Bellow, Interim Director of Information Technology (510) 981-6541
Jennifer Louis, Acting Chief of Police, (510) 981-5700
LaTanya Bellow, Interim Deputy City Manager, (510) 981-7012

ATTACHMENTS

1. Resolution

2. Body Worn Cameras
   a) Surveillance Technology Report: Body Worn Cameras
   b) Retention Schedule

3. Global Positioning System (GPS) Tracking Devices
   Surveillance Technology Report

4. Automated License Plate Readers
   Surveillance Technology Report: Automated License Plate Readers

5. Street Level Imagery Project
   Surveillance Technology Report: Street Level Imagery Project

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

A RESOLUTION ACCEPTING THE SURVEILLANCE TECHNOLOGY REPORT FOR AUTOMATIC LICENSE PLATE READERS, GPS TRACKERS, BODY WORN CAMERAS, AND THE STREET LEVEL IMAGERY PROJECT

WHEREAS, on March 27, 2018, the City Council adopted Ordinance 7,592-N.S., which is known as the Surveillance Technology Use and Community Safety Ordinance ("Ordinance"); and

WHEREAS, Section 2.99.070 of the Ordinance requires that the City Manager must submit to the City Council a Surveillance Technology Report as defined by Section 2.99.020(2) of the Ordinance at the first regular City Council meeting in November; and

WHEREAS, the Surveillance Technology Reports satisfy the requirements of the Ordinance.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the Council hereby accepts the Surveillance Technology Reports for Automatic License Plate Readers, GPS Trackers, Body Worn Cameras, and the Street Level Imagery Project.

Surveillance Technology Report: Body Worn Cameras

October 1, 2020 – Sept. 30, 2021

Description	A description of all non-privileged and non-confidential information about use of the Surveillance Technology, including but not limited to the quantity of data gathered and sharing of data, if any, with outside entities. If sharing has occurred, the report shall include general, non-privileged and non-confidential information about recipient entities, including the names of the entities and purposes for such sharing. Body Worn Cameras are used to capture video recordings of contacts between department personnel and the public, to provide an objective record of these events. These recording are used in support of criminal prosecutions, to limit civil liability, increase transparency and enhance professionalism and accountability in the delivery of police services to the community. Body Worn Camera (BWC) files are shared with the Alameda County District Attorney's office in support of prosecution for crime, and may be shared with other law enforcement agencies to support criminal investigations. **Policy regarding activation of the Body Worn Camera BPD Policy 425.7** Members shall activate the BWC as required by this policy in (a)-(f) below, and may activate the BWC at any time the member believes it would be appropriate or valuable to record an incident within the limits of privacy described herein. The BWC shall be activated in any of the following situations: (a) All in-person enforcement and investigative contacts including pedestrian stops and field interview (FI) situations. (b) Traffic stops including, but not limited to, traffic violations, stranded motorist assistance and all crime interdiction stops. (c) Self-initiated field contacts in which a member would normally notify the Communications Center. (d) Any search activity, including the service of search or arrest warrants; probation, parole, or consent searches where the member is seeking evidence of an offense, or conducting a safety sweep or community caretaking sweep of the premises. Once a location has been secured and the member is not interacting with detainees or arrestees, the member may mute their BWC when conducting a search for evidence. (e) Any other contact that the member determines has become adversarial after the initial contact in a situation where the member would not otherwise activate BWC recording. (f) Transporting any detained or arrested person and where a member facilitates entry into or out of a vehicle, or any time the member expects to have physical contact with that person. **What data is captured by this technology:** BWC use is limited to enforcement and investigative activities involving members of the public. The BWC recordings will capture video and audio evidence for use in criminal investigations, administrative reviews, training, civil litigation, and other proceedings protected by confidentiality laws and department policy. Improper use or release of BWC

	recordings may compromise ongoing criminal and administrative investigations or violate the privacy rights of those recorded and is prohibited. **How the data is stored:** BWC videos are stored on a secure server. All BWC data will be uploaded and stored on Axon Cloud Services, Evidence.com. Axon complies with the EU-U.S. Privacy Shield Framework and the Swiss-U.S. Privacy Shield Framework as set forth by the U.S. Department of Commerce regarding the collection, use, and retention of personal information transferred from the European Union and Switzerland to the United States (collectively, "Privacy Shield"). Axon has certified to the U.S. Department of Commerce that it adheres to the Privacy Shield Principles. **Retention period of data:** See attached retention schedule. Summary of Body Worn Camera Videos Uploaded Oct. 1, 2020 to Sept. 30, 2021: Total Number of Videos 62,283 Total Hours of Videos 16,310 Total GB of BWC Videos 29,017 Summary of Digital Evidence Uploaded, Oct. 1, 2020 to Sept. 30, 2021: Type / File Count / Size (GBs) Audio 1,150 11.72 Document 737 2.38 Image 67,672 331.36 Other 1,292 157.71 Video* 67,865 30,086.75 **Total** **138,716** **30,589.92** * Includes all uploaded BWC videos and all other videos booked into the evidence management system. Other videos include iPhone videos uploaded, security camera video, copies of BWC videos (for redaction, etc.), and any other videos.
Geographic Deployment	Where applicable, non-privileged and non-confidential information about where the surveillance technology was deployed geographically. Body Worn Cameras are worn by all BPD uniformed officers city-wide at all times; BWCs are not deployed based on geographic considerations.
Complaints	A summary of each complaint, if any, received by the City about the Surveillance Technology. There have been no complaints about the deployment and use of Body Worn Cameras.
Audits and Violations	The results of any non-privileged internal audits, any information about violations or potential violations of the Surveillance Use Policy, and any actions taken in response.

	File meta-data are routinely reviewed by our BWC manager, to ensure required metadata fields are completed. There have been no complaints with regards to violations of the Surveillance Use Policy.
Data Breaches	Non-privileged and non-confidential information about any data breaches or other unauthorized access to the data collected by the surveillance technology, including information about the scope of the breach and the actions taken in response. There have been no known data breaches or other unauthorized access to BWC data.
Effectiveness	Information that helps the community assess whether the Surveillance Technology has been effective in achieving its identified outcomes. Body Worn Cameras have proven effective in supporting criminal prosecutions, as video footage is available for all criminal prosecutions. Body Worn Cameras have been effective for training purposes, as footage can be reviewed in incident de-briefs. Body Worn Cameras have been extremely effective in support of Internal Affairs investigations and Use of Force Review.
Costs	Total annual costs for the Surveillance Technology, including personnel and other ongoing costs. The annual cost for the Body Worn Cameras, including cameras, replacement cameras, software, and Axon's secure digital evidence management system is approximately $204,000 per year over a five-year, $1,218,000 contract. There is one full-time employee assigned to the BWC program, an Applications Programmer Analyst II, at a cost of $168,940 per year, including benefits.

NAME	RETENTION DURATION
Uncategorized	Until manually deleted
187 / Felony Sex Assault	Until manually deleted
Civil / City / Non-Evidence	1 year
Collision	2 years
Consent / Aid	108 weeks
Detention / Warrant Only	108 weeks
Felony Evidence	5 years
Litigation	Until manually deleted
Misdemeanor Evidence	2 years
Officer Injury	Until manually deleted
OIS / Critical Incident	Until manually deleted
Pending Review	Until manually deleted
Personnel / VSA	3 years
Personnel Complaint	Until manually deleted
Traffic Stop	108 weeks
Training	60 days
Use of Force	108 weeks
z_Saved	Until manually deleted

ATTACHMENT 3
Page 1

Surveillance Technology Report: Global Positioning System Tracking Devices

October 1, 2019 – Sept. 30, 2020

Description	A description of all non-privileged and non-confidential information about use of the Surveillance Technology, including but not limited to the quantity of data gathered and sharing of data, if any, with outside entities. If sharing has occurred, the report shall include general, non-privileged and non-confidential information about recipient entities, including the names of the entities and purposes for such sharing. Global Positioning System Trackers are used to track the movements of vehicles, bicycles, other items, and/or individuals. **What data is captured by this technology:** A GPS Tracker data record consists of date, time, latitude, longitude, map address, and tracker identification label. The data does not contain any images, names of subjects, vehicle information or other identifying information on individuals. **How the data is stored:** The data from the GPS tracker is encrypted by the vendor. The data is only accessible through a secure website to BPD personnel who have been granted security access. **Retention period of data:** Tracker data received from the vendor shall be kept in accordance with applicable laws, BPD policies that do not conflict with applicable law or court order, and/or as specified in a search warrant. For the date range of 10-01-19 through 09-30-20 the Global Positioning System (GPS) “Electronic Stake Out” (ESO) devices were deployed on “bait” bicycles 52 times, resulting in 34 arrests, 4 eluded capture, 1 person was detained and not arrested, and in 13 deployments the bicycle was not stolen. This program was suspended in mid-March due to the COVID-19 pandemic. GPS “Slap-N-Track” (SNT) devices were used in three separate investigations during this reporting period: (1) An investigation of an individual for Sexual Exploitation, Child Pornography, and Distribution of Child Pornography. This suspect currently has a Federal warrant. (2) An investigation of a serial kidnap rape suspect. The suspect was arrested and charged. (3) An investigation into multiple suspects involved in a “Rolex” robbery series that involved the cities of Berkeley, Piedmont, and Orinda. Two devices were used on two different suspect vehicles during this investigation. Four suspects from the above cases were arrested and charged for their involvement in these robberies.

	Data may be shared with the District Attorney's Office for use as evidence to aid in prosecution, in accordance with laws governing evidence; other law enforcement personnel as a part of an active criminal investigation; and other third parties, pursuant to a court order.
Geographic Deployment	Where applicable, non-privileged and non-confidential information about where the surveillance technology was deployed geographically. GPS ESO-equipped bikes were deployed primarily in commercial districts across the city where bikes are frequently stolen. GPS SNT devices are deployed with judicial pre-approval, based on suspect location, rather than geographical consideration.
Complaints	A summary of each complaint, if any, received by the City about the Surveillance Technology. There were no complaints made regarding GPS Trackers.
Audits and Violations	The results of any non-privileged internal audits, any information about violations or potential violations of the Surveillance Use Policy, and any actions taken in response. There were no audits and no known violations relating to GPS Trackers.
Data Breaches	Non-privileged and non-confidential information about any data breaches or other unauthorized access to the data collected by the surveillance technology, including information about the scope of the breach and the actions taken in response. There were no known data breaches relating to GPS Trackers.
Effectiveness	Information that helps the community assess whether the Surveillance Technology has been effective in achieving its identified outcomes. GPS Trackers continue to be very effective in apprehending bicycle thieves, many of whom are repeat offenders who've committed not only bike thefts, but other crimes as well, such as burglaries, auto burglaries, and vehicle thefts. SNT trackers are effective in that they provide invaluable information on suspect vehicle location during the investigation of complex cases where suspects may be moving around the Bay Area and beyond. GPS Trackers greatly reduce costs associated with surveillance operations. A bike may be left for days. Surveillance operations generally involve four or more officers for the entire duration of an operation. A moving surveillance is extremely resource-intensive, requiring multiple officers in multiple vehicles for extended periods of time. Using both types of GPS trackers eliminates the need for officers' immediate presence until officers are ready to apprehend the suspect(s). The program was suspended in mid-March due to the COVID-19 pandemic. This program will likely resume once the pre-COVID bail schedule is re-established.
Costs	Total annual costs for the Surveillance Technology, including personnel and other ongoing costs.

	The annual cost for the GPS Trackers' data service is $1,920. Further information regarding costs is contained in Policy 1301a, the Surveillance Acquisition Report. There are staff time costs associated with preparing and placing SNT trackers. The investigator must prepare a search warrant and obtain a judge's approval, and a small number of officers must place the tracker on the suspect's car. The total number of hours is a fraction of the time it would take to do a full surveillance operation involving numerous officers. There are staff time costs associated with preparing ESO trackers and placing ESO tracker-equipped bikes for bait bike operations. These are on the order of two-four hours per operation. The total number of hours is extremely small, given the large number of operations, and resulting arrests.

Surveillance Technology Report: Automated License Plate Readers

October 1, 2019 – Sept. 30, 2020

Description

A description of all non-privileged and non-confidential information about use of the Surveillance Technology, including but not limited to the quantity of data gathered and sharing of data, if any, with outside entities. If sharing has occurred, the report shall include general, non-privileged and non-confidential information about recipient entities, including the names of the entities and purposes for such sharing.

Automated License Plate Readers (ALPRs) are used by Parking Enforcement Bureau vehicles for time zone parking and scofflaw enforcement. The City's Transportation Division uses anonymized information for purposes of supporting the City's Go Berkeley parking management program. ALPR use replaced the practice of physically "chalking" tires, which is no longer allowed by the courts.

What data is captured by this technology:
ALPR technology functions by automatically capturing an image of a vehicle's license plate, transforming that image into alphanumeric characters using optical character recognition software, and storing that information, along with relevant metadata (e.g. geo-location and temporal information, as well as data about the ALPR).

How the data is stored:
The data is stored on a secure server by the vendor.

Retention period of data:
Collected images and metadata of hits arestored no more than 365 days. Metadata of reads arenot stored more than 30 days.

Summary of ALPR Time Zone Enforcement Data

Read Data
There was an average of 12,059 "Reads" per working day
(Based on one month's data: 9/1/20/-9/30/20)

Hit Data
There were 44,068 "Hits"
14, 945 "Enforced Hits" resulted in citation issuance.
2,569 "Not Enforced" valid, enforceable hits resulted in no citation issued, based on PEO discretion.
26,554 Hits were not acted upon for a variety to reasons including but not limited to:

1) Customer comes out to move a vehicle. PEO's are directed not to issue that citation.
2) Officer gets to the dashboard and sees a permit not visible from a previous location.
3) Officer does a vehicle evaluation and confirms that the vehicle moved from the hit location (e.g. across the street within GPS range).
4) Stolen car.
5) Similar Plates.
6) 600-700 GIG cars- 100 revel scooters.

	7) Officers leave their LPR "on" collecting time zone enforcement data, but leave the area being enforced to drive to another location on another assignment, such as a traffic post at a collision scene. These hits are not enforced. Genetec is the vendor for the ALPR Time Zone enforcement system. A "read" indicates the ALPR system successfully read a license plate. The information that is generated when a plate is viewed by the ALPR camera is the license plate number, state and geographical (GPS) location it was viewed. A "hit" indicates the ALPR system detected a possible violation, which prompts the Parking Enforcement Officer to further assess the vehicle. At "hit" is when the "read" information is recognized as a license plate that matches, or does not match an entry in a list such as permit list or the stolen vehicle "hot list". In many cases, hits are "rejected" or "not enforced", meaning no enforcement action is taken, because the Parking Enforcement Officer determines the vehicle has an appropriate placard or permit, or there is other information or assignment which precludes citation. **Summary of ALPR Booting Scofflaw Enforcement Data** 0 vehicles booted from 10/1/19-9/23/20. The Berkeley Police Department no longer maintains the ALPR Booting Scofflaw Enforcement Program. The contract to provide this service became cost prohibitive and the city opted not to renew the contract with the vendor. The city returned to having each PEO working a beat again become responsible for recognizing when a license plate has accumulated five or more unpaid parking tickets. All BPD ALPR data may only be shared with other law enforcement or prosecutorial agencies for official law enforcement purposes, or as otherwise permitted by law. All ALPR data is subject to the provisions of BPD Policy 415 - Immigration Law, and therefore may not be shared with federal immigration enforcement officials.
Geographic Deployment	Where applicable, non-privileged and non-confidential information about where the surveillance technology was deployed geographically. Only Parking Enforcement Vehicles are equipped with ALPRs. ALPRs are deployed based on areas where there are parking time restrictions. ALPRs are not deployed based on geographic considerations not related to parking and scofflaw enforcement.
Complaints	A summary of each complaint, if any, received by the City about the Surveillance Technology. There have been no complaints about to the deployment and use of Automated License Plate Readers.
Audits and Violations	The results of any non-privileged internal audits, any information about violations or potential violations of the Surveillance Use Policy, and any actions taken in response. There have been no complaints of violations of the ALPR Surveillance Use Policy.

Data Breaches	Non-privileged and non-confidential information about any data breaches or other unauthorized access to the data collected by the surveillance technology, including information about the scope of the breach and the actions taken in response. There have been no known data breaches or other unauthorized access to Automated License Plate Reader data.
Effectiveness	Information that helps the community assess whether the Surveillance Technology has been effective in achieving its identified outcomes. ALPRs have proven effective in parking enforcement for time zone enforcement; the prior utilization of manually chalking car tires for time zone enforcement has been disallowed by court decision. ALPRs have proven effective in supporting enforcement upon vehicles which have five or more unpaid citations. The ALPR's ability to read and check license plates while being driven greatly increases efficiency, allowing an operator to cover larger areas more quickly without having to stop except to confirm a hit.
Costs	Total annual costs for the Surveillance Technology, including personnel and other ongoing costs. The annual system maintenance cost for Genetec is $47,000. This cost is borne by the Transportation Division, which also purchased the ALPR units used in Time Zone Enforcement. Two new Genetec ALPR units were purchased during the period covered by this report. The two new units were purchased in order to equip the final two parking vehicles that did not have ALPR units attached to them. Genetec ALPR units are installed on 23 Parking Enforcement vehicles. Parking Enforcement personnel perform a variety of parking enforcement activities, and are not limited solely to time zone enforcement. Therefore, personnel costs specifically attributable to time zone enforcement are not tracked.

Surveillance Technology Report:

Street Level Imagery Project

Description	**A description of all non-privileged and non-confidential information about the use of the Surveillance Technology, including but not limited to the quantity of data gathered and sharing of data, if any, with outside entities. If sharing has occurred, the report will include general, non-privileged and non-confidential information about recipient entities, including the names of the entities and purposes for such sharing.** Street level imagery will be utilized exclusively by authorized City staff for infrastructure asset management and planning activities. The street level imagery of City infrastructure assets in the Public Right of Way that is provided to the City will not consist of information that is capable of being associated with any individual or group.
Geographic Deployment	**Where applicable, non-privileged and non-confidential information about where the surveillance technology was deployed geographically.** Street level imagery was collected by driving through the entire community over a three week period. It is accessible to the City through a proprietary third-party application, Street SmartTM.
Complaints	**A summary of each complaint, if any, received by the City about the Surveillance Technology.** There have been no complaints about the deployment and use of Street SmartTM.
Audits and Violations	**The results of any non-privileged internal audits, any information about violations or potential violations of the Surveillance Use Policy, and any actions taken in response.** There have been no complaints with regards to violations of the Surveillance Use Policy.
Data Breaches	**Non-privileged and non-confidential information about any data breaches or other unauthorized access to the data collected by the surveillance technology, including information about the scope of the breach and the actions taken in response.** There have been no known data breaches or other unauthorized access to Cyclomedia Street Level Imagery data.

Effectiveness	**Information that helps the community assess whether the Surveillance Technology has been effective in achieving its identified outcomes.** Staff considered hiring contractors to use GPS in the field to create and update the infrastructure asset GIS data. This method is costly and time consuming. Cyclomedia's unique and patented processing techniques allow positionally-accurate GIS data to be collected in a cost-effective way and over a shorter period of time than a "boots on the ground" GPS field survey. The Imagery is being used to extract the following Citywide Infrastructure assets to create accurate and current Geographic Information Systems (GIS) data inventories: • Bus pads / stops • Maintenance Access Holes • Pavement Striping • Curb paint color • Parking meters • Pedestrian Signal • Pavement marking • Storm drains • Signs • Street trees • Traffic lights The street level imagery captured is also being used to: Create a street sign GIS layer with condition assessment to support compliance with the Manual on Uniform Traffic Control Devices Code and provide an accurate inventory of City signs. The existing sign inventory is contained in a spreadsheet that does not have accurate location data. Create a curb color layer with condition assessment to indicate where there are red, yellow, blue, white and green colors. This is critical to support Public Safety. Create pavement striping and paint symbol layers to support Transportation Planning and Vision Zero. ***<u>Benefits Projected:</u>*** The data from the street level imagery is being integrated into the City's work order and asset management system for planning activities and to document repair and maintenance. Planners can use the street level imagery provided to the City to take measurements remotely, such as sidewalk width and public right of way impacts at proposed development locations. City staff can use the street level imagery to plan the location of road markings for pedestrian crossings, bike lanes or other striping.

	City staff can remotely take accurate measurements of infrastructure assets to adequately plan for repair and replacement. City staff can use the street level imagery to enhance community engagement. The street level imagery can be used to identify and depict the impact of development such as an intersection restriping plan in order to article before and after conditions.
Costs	**Total annual costs for the Surveillance Technology, including personnel and other ongoing costs.** The total cost of the system is $232,401 and is itemized below.

Year No.	Description	Cost	Notes
1	Licenses	$48,000	Resolution No: 69,482-N.S. 30JUN20
1	Professional Services for asset extraction	$139,401	Resolution No: 69,482-N.S. 30JUN20
2	Licenses and Support – One-Time	$45,000	Pending Council approval after imagery and data extraction work is completed Licensing Costs included in IT Cost allocation
3	License and Support – Ongoing Annual Costs	$3,000	Pending Council approval after imagery and data extraction work is completed Licensing Costs included in IT Cost allocation
Total Year 1-3		**$235,401**	

Office of the City Manager

41

INFORMATION CALENDAR
MARCH 22, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Henry Oyekanmi, Director, Finance Department

Subject: FY 2022 First Quarter Investment Report: Ended September 30, 2021

SUMMARY

The City's investment policy requires that a quarterly investment report be submitted to the City Council on the status of the investment portfolio. The report includes all investments managed by the City of Berkeley and provides information on the types, values (par, book, and market), term, and yield of each security.

- The return on pooled investments for the quarter ended September 30, 2021 was .99%, 77 basis points more than the .22% earned by the State Local Agency Investment Fund (State LAIF), which is the benchmark for investment performance used by the City. The return on pooled investments of .99% for the quarter ended September 30, 2021 was 19 basis points less than the rate of .80% earned in the quarter ended June 30, 2021.

- The average return on all Retiree Medical Trust Fund investments was 3.37% for the quarter ended September 30, 2021.

CURRENT SITUATION AND ITS EFFECTS

Attached is a summary of quarterly reports for the fiscal year 2022 First quarter ending September 30, 2021 representing the status of the City's investment portfolio. The report includes all investments managed by the City of Berkeley and provides information on the values (par, book, and market), term, and yield of each security.

Summary information by type of security and detailed information on each security is provided on Exhibit 2-A. An evaluation of portfolio performance for this accounting period compared to the previous three accounting periods is also included in Attachment 1.

A. Portfolio Results

As a result of the differences in the investment policies of different cities, including responsible investing policies, maturity restrictions, investment restrictions, etc., it was difficult for the City of Berkeley to come up with a reasonable performance measure for pooled cash investments. In order to provide some measure of the relative performance of the City's investment returns, many years ago the City established the State Local Agency Investment Fund (LAIF) as the performance measure to be reported in the quarterly investment reports, since many local governments invested significant portions of their investment portfolios in LAIF.

LAIF was intended to be a reference point to compare the City's investment performance against, rather than a true performance measure, since most cities typically earn a yield higher than LAIF in normal interest rate environments, and because LAIF's average maturity of its investments is generally shorter than most cities. As a result, past City Councilmembers requested that information about the rates earned by other California cities be included in the quarterly investment reports for comparison purposes, despite the differences in the investment policies of the various cities.

1. Liquidity of Portfolio:
   The average investment in the pooled portfolio matures in 1,304 days as of September 30, 2021. This is 13 days less than the 1,317 maturity days as of June 30, 2021.

2. Comparison of Results to Performance Measures – Pooled investments: Quarter Ended September 30, 2021
   The City's yield on investments for the quarter ended September 30, 2021 was .99%, an increase of 19 basis points (.19%) from the .80% earned during the quarter ended June 30, 2021. The average yield on a 90-day Treasury bill at the end of the quarter ended September 30, 2021 was .033%, a decrease of .8 basis points (.008%) from the .041% at the end of the previous quarter.

   As summarized in Table 1, staff's overall results were above the performance measure for the quarter. Staff's performance was above the performance measure in July by approximately 68 basis points (+.68%); over the performance measure in August by approximately 79 basis points (+.79%); and, was over the performance measure in September by approximately 86 basis points (+.86%). The performance measure for the return on investments is compared to the rate of return of the State LAIF.

Table 1

For Quarter Ending September 30, 2021			
Period	**City**	**State LAIF**	**Difference**
July-21	.90%	.22%	+0.68%
Aug-21	1.01%	.22%	+0.79%
Sept-21	1.07%	.21%	+0.86%
July 1-Sept 30	.99%	.22%	0.77%

3. Investment Results-Retiree Health Insurance Funds:

   Average interest rates earned on the retiree health insurance trust funds for the quarter ended June 30, 2021 compared to the quarter ended September 30 2021, were as follows:

Table 2

EARNED INTEREST RATES		
For Quarter Ended 9/30/2021 Compared To 6/30/2021		
Trust Fund	**4th Qtr 6/30/21**	**1st Qtr 9/30/21**
Retiree Medical Trust Fund (Misc Employees)	4.561%	3.984%
Fire Retiree Medical Trust Fund	3.688%	3.235%
Police Retiree Medical Trust Fund	4.187%	2.887%

The rates earned on these plans are expected to be higher in the future, as staff plans to use the investment authority granted by Council to purchase Bond and Stock Mutual Funds or Index Funds recommended by the professional money managers who manage the City's Section 115 Trust funds.

Details related to retiree health trust fund investments are in Attachment 3, Exhibits 3-A, 3-B, and 3-C of this report.

B. Discussion of Interest Rate Environment and Outlook

In its September 22, 2021 statement, the Federal Open Market Committee indicated that "the Federal Reserve is committed to use its full range of tools to support the U.S. economy in this challenging time, thereby promoting its maximum employment and price stability goals.

With progress on vaccinations and strong policy support, indicators of economic activity and employment have continued to strengthened. The sectors most adversely affected by the pandemic have improved in recent months. Inflation is elevated, largely reflecting transitory factors. Overall financial conditions remain accommodative, in part reflecting policy measures to support the economy and the flow of credit to U.S. households and businesses.

The path of the economy will depend significantly on the course of the virus. Progress on vaccinations will likely continue to reduce the effects of the public health crisis on the economy, but risks to the economic outlook remain.

<u>Yield Trend</u>

The Committee seeks to achieve maximum employment and inflation at the rate of 2 percent over the longer run. With inflation having run persistently below this longer-run goal, the Committee will aim to achieve inflation moderately above 2 percent for some time so that inflation averages 2 percent over time and longer-term inflation expectations remain well anchored at 2 percent. The Committee expects to maintain an accommodative stance of monetary policy until these outcomes are achieved. The Committee decided to keep the target range for the federal funds rate at 0 to .25% and expects it will be appropriate to maintain this target range until labor market conditions have reached levels consistent with the Committee's assessments of maximum employment and inflation has risen to 2 percent and is on track to moderately exceed 2 percent for some time. Last December, the Committee indicated that it would continue to increase its holdings of Treasury securities by at least $80 billion per month and of Agency mortgage-backed securities by at least $40 billion per month until substantial further progress has been made toward the Committee's maximum employment and price stability goals. Since then, the economy has made progress toward these goals. If progress continues broadly as expected, the Committee might decide that a moderation in the pace of asset purchases may soon be warranted. These asset purchases help foster smooth market functioning and accommodative financial conditions, thereby supporting the flow of credit to households and businesses. In assessing the appropriate stance of monetary policy, the Committee will continue to monitor the implications of incoming information for the economic outlook. The Committee would be prepared to adjust the stance of monetary policy as appropriate if risks emerge that could impede the attainment of the Committee's goals.

At its latest meeting on January 25-26, 2022, the Fed announced its intention to start raising the Federal Funds rate at its next meeting on March 15-16, 2022 to combat the high inflation the U.S. is experiencing now; and, the Fed indicated that multiple increases would occur after that date. As a result of these moves by the Fed, staff expects returns during the remainder of FY 2022 to increase from the returns earned in FY 2021 and so far in FY 2022.

A January 12-19, 2022 Reuters poll expects the Fed to raise the Federal Funds rate three times in FY 2022, starting in March, and an additional three times in 2023, bringing the rate to 1.50% to 1.75% by the end of 2023.

At the same time, the City's overnight Fidelity money market fund continues to pay a rate of only .01%.

Therefore, until short-term and long-term rates return to more normal levels, staff's strategy will be to (1) keep the short-term money in the Fidelity money market fund to a minimum, to increase short-term yields earned; and, (2) restrict investment maturities to three years until after the Fed starts raising rates in March 2022: Specifically, staff will:

- Hold less money in the Fidelity money market fund, and invest in more Commercial Paper and other short-term securities for the short-term portfolio, since Fidelity's rate is still .01%. Commercial Paper is a money-market security issued by large corporations to obtain funds to meet short-term obligations, and is backed by the company's promise to pay the face amount, plus interest, on the maturity date. Interest rates paid on Commercial Paper currently range between .30% and .70% (for four to nine month periods);
- Continue the policy of not locking in any Agency or Medium-Term corporate note securities with a maturity beyond three years, even though rates for maturities for Agencies from one to five-year maturities have increased from a range of .11%-1.15% to a range of .80%-1.60%, as indicated in Table 3:

Table 3 **Agency Bullets**

Description	1 Year	2 years	3 years	4 years	5 years
Previous Range	.11%	.40%	.73%	.97%	1.15%
Current Range	.80%	1.19%	1.38%	1.56%	1.56%

Also, the City's earned rate is expected to be above the City's benchmark (State LAIF) and the City's return is expected to be comparable to rates earned by most other cities in California. A sample of rates earned by Northern and Southern California cities is reflected in table 3 below (previously only Northern California cities were included):

Table 4

Other California Cities Earned Interest Rates	
For the Quarter Ending September 30, 2021	
City	**Rates Earned**
Palo Alto	1.61%
Los Angeles	1.24%
Sacramento	1.03%
Berkeley	**.99%**
San Jose	.92%
Torrance	.87%
San Diego	.72%
Santa Monica	.54%
San Francisco	.48%
Oakland	N/A

BACKGROUND

- Pooled Investments

  Short-term cash is invested primarily in government sponsored enterprises (referred to as Federal Agency) notes and medium-term corporate notes for periods of one to five years. Additional cash is invested in a money market fund or overnight securities to meet the liquidity needs of the City.

  In some cases, the City may have investments with a current market value that is greater or less than the recorded cost. These changes in market value are due to fluctuations in the market and have no effect on yield, as the City does not intend to sell securities prior to maturity.

- Retiree Health Trust Fund Investments

  The City agreed to provide retiree Health insurance coverage for fire, police and miscellaneous employees under certain terms and conditions. An actuarial study commissioned by the City many years ago determined that, in addition to City Contributions, an average rate of return of 7% on miscellaneous employees trust fund assets invested must be achieved to fund the retiree health benefit at the desired 70% level. Primarily as a result of the Federal Reserve Board's decision to keep short-term rates near zero for the last 14 years, the average rate currently earned is significantly below that 7% level. City Finance Department staff manages these investment portfolios.

ENVIRONMENTAL SUSTAINABILITY
There are no identifiable environmental effects or opportunities associated with the subject of this report.

CONTACT PERSON
Henry Oyekanmi, Director, Finance Department, 981-7326

ATTACHMENTS

1. Portfolio Evaluation FY 2022 First Quarter

2. Investment Report Analysis FY 2022 First Quarter
   a. Exhibit 2-A: Pooled Cash and Investments
   b. Exhibit 2-B.1 Interest Earnings July 1, 2021 – July 31, 2021
   c. Exhibit 2-B.2 Interest Earnings August 1, 2021 – August 31, 2021
   d. Exhibit 2-B.3 Interest Earnings September 1, 2021 – September 30, 2021
   e. Exhibit 2-C: Book Value By Investment Type
   f. Exhibit 2-D: Current Holdings vs. Policy Limits
   g. Exhibit 2-E: Investment Portfolio Trend

3. Summary of Pooled and Cash Investments FY 2022 First Quarter –Trust Funds
   a. Exhibit 3-A: Retiree Medical Trust Funds –Misc.
   b. Exhibit 3-B: Retiree Medical Trust Funds –Fire
   c. Exhibit 3-C: Retiree Medical Trust Funds –Police

Attachment 1

Portfolio Evaluation
Quarter Ended September 30, 2021

	Quarter Ending				
	September 2021	June 2021	March 2021	December 2020	September 2020
Total Portfolio					
Pooled Cash and Investments (COB)	$ 526,986,435	$ 607,813,880	$ 485,079,936	$ 502,205,525	$ 458,510,489
Pooled Cash and Investments (Trust)	52,247,171	52,703,230	51,878,656	52,295,664	51,162,127
Total Cash and Investments	$ 579,233,606	$ 660,517,110	$ 536,958,592	$ 554,501,189	$ 509,672,616
Average Life of Investment Portfolio					
Pooled Investments (CoB)	1,304	1,317	1,158	1,205	1,184
Trust Investments	1.961 years	2.584 years	2.745 years	2.368 years	2.620 years
Weighted Yield					
Pooled Investments (CoB)	0.992%	0.804%	0.868%	1.081%	1.145%
Trust Investments	3.369%	4.145%	4.319%	4.357%	4.085%
Prime Rate	3.250%	3.250%	3.250%	3.250%	3.250%
91-day Treasury Bill Rate	0.033%	0.041%	0.015%	0.058%	0.092%
2-year Treasury Note Rate	0.276%	0.249%	0.160%	0.121%	0.127%

Cash and Investments Maturity	September 2021	%	June 2021	%	March 2021	%	December 2020	%	September 2020	%
Within one year	$ 164,472,381	28.39%	$ 304,569,674	46.11%	$ 384,540,339	71.61%	$ 404,368,543	70.95%	$ 331,894,784	65.12%
Between 1 to 3 years	43,663,650	7.54%	54,151,565	8.20%	54,215,103	10.10%	53,336,175	10.29%	50,549,828	9.92%
Between 3 to 5 years	333,855,324	57.64%	205,214,052	31.07%	76,708,237	14.29%	68,834,300	14.67%	77,306,662	15.17%
Between 5 to 10 years	37,242,254	6.43%	96,581,820	14.62%	21,494,913	4.00%	27,962,170	4.08%	49,921,343	9.79%
Over 10 years	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%
Total	$ 579,233,609	100.00%	$ 660,517,111	100.00%	$ 536,958,592	100.00%	$ 554,501,189	100.00%	$ 509,672,616	100.00%

Attachment 2

Investment Report Analysis
As of September 30, 2021

Investments	Pooled Investments	Pension and OPEB Trust Investments	Total
Portfolio	$ 491,279,714	$ 27,990,030	$ 519,269,744
Unrecognized gain/(loss)	6,132,587	2,110,736	8,243,323
Total Investments	497,412,301	30,100,766	527,513,067

Cash	Pooled Cash	Pension and OPEB Trust Cash	Total
Cash with Fiscal Agents	2,205,051	-	2,205,051
Cash Deposits in Banks	49,515,488	-	49,515,488
Pooled Cash Adjustment	(22,146,405)	22,146,405	-
Total Cash	29,574,134	22,146,405	51,720,539
Adjusted Grand Total (All Cash and Investments)	**$ 526,986,435**	**$ 52,247,171**	**$ 579,233,606**

Pooled Cash Portfolio Breakdown As of September 30, 2021	Book Value	Market Value
Investments	$ 491,141,989	$ 497,274,576
Fidelity Money Market (TRANS)	-	-
Fidelity Money Market	137,725	137,725
	$ 491,279,714	**$ 497,412,301**

Note: Pooled cash for General Fund includes Rent Board cash of $5,847,531.07

City of Berkeley
Pooled Cash and Investments
As of September 30, 2021

CUSIP	Investment #	Issuer	Book Value	Par Value	Market Value	Current Rate	YTM/C 365	Maturity Date	Days To Maturity	Moody's Rating
Certificates of Deposits										
254673RD0	14539	Discover Bank	250,000.00	250,000.00	263,212.50	3.300	3.300	07/05/2023	642	N/A
795450T47	14540	Sallie Mae Bank	250,000.00	250,000.00	263,177.50	3.300	3.300	07/03/2023	640	N/A
		Subtotal and Average	**500,000.00**	**500,000.00**	**526,390.00**		**3.300**		**641**	
Medium Term Notes										
008252AM0	14582	Affiliated Managers Group	1,043,767.95	1,000,000.00	1,081,810.00	4.250	2.300	02/15/2024	867	A3
037833AK6	14536	Apple Inc	4,939,768.55	5,000,000.00	5,161,900.00	2.400	3.225	05/03/2023	579	AA1
04685A2L4	14590	Athene Global Funding	5,983,043.75	5,950,000.00	6,184,846.50	2.500	2.320	01/14/2025	1,201	N/A
04685A2L4	14602	Athene Global Funding	4,886,573.68	5,000,000.00	5,197,350.00	2.500	3.250	01/14/2025	1,201	N/A
084670BJ6	14542	Berkshire Hathaway	4,990,538.14	5,000,000.00	5,182,300.00	3.000	3.150	02/11/2023	498	AA2
15654VAK4	14641 T-1	Century Housing Corp	4,000,000.00	4,000,000.00	3,998,840.00	0.300	0.300	07/15/2022	287	N/A
20030NBN0	14563	Comcast Corp	5,047,972.92	5,000,000.00	5,416,500.00	3.375	3.100	08/15/2025	1,414	A3
233851CU6	14571	Daimler Finance	5,060,309.63	5,000,000.00	5,484,550.00	3.450	3.190	01/06/2027	1,923	A3
233851CU6	14574	Daimler Finance	3,803,436.58	3,725,000.00	4,085,989.75	3.450	3.000	01/06/2027	1,923	A3
233851DN1	14586	Daimler Finance	5,008,058.99	5,000,000.00	5,015,100.00	3.750	2.000	11/05/2021	35	A3
24422EUM9	14554	John Deere Cap	5,032,559.06	5,000,000.00	5,331,450.00	3.650	3.300	10/12/2023	741	A2
375558BF9	14570	Gilead Sciences	5,105,153.96	5,000,000.00	5,480,000.00	3.650	3.118	03/01/2026	1,612	A3
49327M2X1	14560	Key Bank NA	5,003,159.72	5,000,000.00	5,050,550.00	3.300	3.100	02/01/2022	123	A3
53944VAS8	14580	Lloyds Bank Plc	5,002,080.92	5,000,000.00	5,087,600.00	2.250	2.200	08/14/2022	317	A1
540424AQ1	14555	Loews Corporation	4,945,634.01	5,000,000.00	5,153,850.00	2.625	3.350	05/15/2023	591	A3
589331AT4	14545	Merck & Co Inc	4,971,874.00	5,000,000.00	5,078,450.00	2.400	3.030	09/15/2022	349	A1
68389XAS4	14548	Oracle Corp	5,018,452.87	5,000,000.00	5,284,850.00	3.625	3.388	07/15/2023	652	BAA2
747525AT0	14564	Qualcomm Inc	4,981,772.68	5,000,000.00	5,284,450.00	2.900	3.050	05/20/2024	962	A2
747525AU7	14587	Qualcomm Inc	6,212,139.71	5,963,000.00	6,540,814.70	3.250	2.435	05/20/2027	2,057	A2
828807CS4	14606	Simon Property Group	4,996,478.16	5,000,000.00	5,351,250.00	3.375	3.353	10/01/2024	1,096	A3
07330MAA5	14588	Truist Bank	5,334,788.79	5,000,000.00	5,571,800.00	3.800	2.365	10/30/2026	1,855	A2
		Subtotal and Average	**101,367,564.07**	**100,638,000.00**	**106,024,250.95**		**2.817**		**984**	
Commercial Paper Disc - Amortizing										
06742XJX6	14635 T-1	Barclays Bank PLC	9,996,311.11	10,000,000.00	9,997,500.00	0.160	0.162	12/23/2021	83	N/A
2254EBAU5	14614	Credit Suisse New York	9,991,736.11	10,000,000.00	9,996,000.00	0.250	0.258	01/28/2022	119	N/A
44890MXV9	14637 T-1	Hyundai Capital America	9,998,366.67	10,000,000.00	9,999,200.00	0.210	0.213	10/29/2021	28	N/A
53948BB73	14626	Lloyds Bk Corporate Mkts	9,992,833.33	10,000,000.00	9,995,300.00	0.200	0.206	02/07/2022	129	N/A
05970UBA5	14621	Banco Santander	9,992,300.00	10,000,000.00	9,995,200.00	0.210	0.217	02/10/2022	132	N/A
83368YFY8	14625	Societe Generale	9,993,827.78	10,000,000.00	9,996,600.00	0.220	0.227	01/10/2022	101	N/A
83369BZV1	14636 T-1	Societe Generale	9,996,538.89	10,000,000.00	9,997,300.00	0.140	0.144	12/29/2021	89	N/A
		Subtotal and Average	**69,961,913.89**	**70,000,000.00**	**69,977,100.00**		**0.204**		**97**	

City of Berkeley
Pooled Cash and Investments
As of September 30, 2021

CUSIP	Investment #	Issuer	Book Value	Par Value	Market Value	Current Rate	YTM/C 365	Maturity Date	Days To Maturity	Moody's Rating
Medium-Term Notes - Callable										
05531FBF9	14561	BB&T Corporation	5,074,441.27	5,000,000.00	5,340,850.00	3.750	3.012	12/06/2023	796	A3
05531FBG7	14585	BB&T Corporation	5,035,479.28	5,000,000.00	5,089,800.00	3.050	2.000	06/20/2022	262	A3
693475AV7	14557	PNC Financial Services	5,013,541.90	5,000,000.00	5,315,800.00	3.500	3.425	01/23/2024	844	A3
751212AC5	14566	Ralph Lauren	5,113,087.84	5,000,000.00	5,479,650.00	3.750	3.106	09/15/2025	1,445	A3
91159HHU7	14562	US Bancorp	5,174,580.14	5,000,000.00	5,571,650.00	3.950	2.848	11/17/2025	1,508	A2
		Subtotal and Average	**25,411,130.43**	**25,000,000.00**	**26,797,750.00**		**2.878**		**975**	
Federal Agency Continuously Callable										
31422XJW3	14638	Farmer Mac	10,000,000.00	10,000,000.00	10,010,200.00	0.300	0.300	07/20/2026	1,753	N/A
3130AMAV4	14611	Federal Home Loan Banks	5,600,000.00	5,600,000.00	5,588,800.00	0.500	0.500	04/29/2027	2,036	AAA
3130ALZA5	14612	Federal Home Loan Banks	9,000,000.00	9,000,000.00	8,994,150.00	0.500	0.500	04/29/2026	1,671	AAA
3130AMEX6	14613	Federal Home Loan Banks	15,000,000.00	15,000,000.00	14,978,550.00	0.500	0.500	05/27/2026	1,699	AAA
3130AMF72	14615	Federal Home Loan Banks	15,000,000.00	15,000,000.00	14,967,750.00	0.650	0.650	05/27/2026	1,699	AAA
3130AMFQ0	14616	Federal Home Loan Banks	15,000,000.00	15,000,000.00	14,999,850.00	0.500	0.500	05/26/2026	1,698	AAA
3130AMFT4	14617	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,971,400.00	0.625	0.625	05/27/2026	1,699	AAA
3130AMG22	14618	Federal Home Loan Banks	20,000,000.00	20,000,000.00	19,946,400.00	0.500	0.500	05/27/2026	1,699	AAA
3130AMGG1	14619	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,976,700.00	0.600	0.600	05/26/2026	1,698	AAA
3130AMFN7	14620	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,976,700.00	0.500	0.500	05/26/2026	1,698	AAA
3130AMG55	14622	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,970,300.00	0.750	0.750	05/27/2027	2,064	AAA
3130AMG22	14624	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,973,200.00	0.500	0.500	05/27/2026	1,699	AAA
3130AMLS9	14627	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,982,700.00	0.500	0.500	06/17/2026	1,720	AAA
3130AMN24	14628	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,998,700.00	0.375	0.375	06/03/2026	1,706	AAA
3130AMN57	14629	Federal Home Loan Banks	20,000,000.00	20,000,000.00	19,997,200.00	0.250	1.013	06/03/2026	1,706	AAA
3130AMP71	14630	Federal Home Loan Banks	20,000,000.00	20,000,000.00	20,003,000.00	0.400	1.077	06/18/2026	1,721	AAA
3130AMPL0	14631	Federal Home Loan Banks	15,000,000.00	15,000,000.00	14,996,100.00	0.375	0.375	06/08/2026	1,711	AAA
3130AMMW9	14632	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,990,200.00	0.500	0.500	06/10/2026	1,713	AAA
3130AN2A7	14633	Federal Home Loan Banks	10,000,000.00	10,000,000.00	10,067,000.00	0.250	0.962	07/13/2026	1,746	AAA
3130AMWM0	14634	Federal Home Loan Banks	4,250,000.00	4,250,000.00	4,242,435.00	0.500	0.500	06/30/2026	1,733	AAA
3130AN5U0	14642	Federal Home Loan Banks	10,000,000.00	10,000,000.00	9,982,800.00	0.500	0.500	07/29/2026	1,762	AAA
3130ANJY7	14643	Federal Home Loan Banks	40,000,000.00	40,000,000.00	39,875,200.00	0.400	0.400	08/26/2026	1,790	AAA
		Subtotal and Average	**288,850,000.00**	**288,850,000.00**	**288,489,335.00**		**0.584**		**1,740**	

City of Berkeley
Pooled Cash and Investments
As of September 30, 2021

CUSIP	Investment #	Issuer	Book Value	Par Value	Market Value	Current Rate	YTM/C 365	Maturity Date	Days To Maturity	Moody's Rating
Municipal Bonds										
13063DGB8	14559	General Obligation Unlimited	5,051,380.57	5,000,000.00	5,459,750.00	3.375	3.087	04/01/2025	1,278	AA2
		Subtotal and Average	**5,051,380.57**	**5,000,000.00**	**5,459,750.00**		**3.087**		**1,278**	
Money Market										
SYS14190	14190	Fidelity Money Market	-	-	-	0.000	0.000		1	N/A
SYS14265	14265	Fidelity Money Market	137,724.97	137,724.97	137,724.97	0.003	0.003		1	N/A
		Subtotal and Average	**137,724.97**	**137,724.97**	**137,724.97**		**0.003**		**1**	
	Total Investments and Average		**491,279,713.93**	**490,125,724.97**	**497,412,300.92**		**1.138**			

Total Investments (Book Value)	**491,279,713.93**
Cash	**29,574,134.00**
Total Investments (Book Value) and Cash	**520,853,847.93**
Increase / (Decrease) in Market Value of Securities	**6,132,586.99**
Total Investments (Market Value) and Cash	**526,986,434.92**

CITY OF BERKELEY

Exhibit 2-B.1

Pooled Investments Selected Funds
Interest Earnings
Sorted by Fund - Fund
July 1, 2021 - July 31, 2021
Yield on Average Book Value

CUSIP	Investment #	Fund	Security Type	Ending Par Value	Beginning Book Value	Average Book Value	Maturity Date	Current Rate	Annualized Yield	Adjusted Interest Earnings: Interest Earned	Adjusted Interest Earnings: Amortization/ Accretion	Adjusted Interest Earnings: Adjusted Interest Earnings
Fund: Pooled Investment - Long Term												
3130AMWM0	14634	010	MC5	4,250,000.00	4,250,000.00	4,250,000.00	06/30/2026	0.500	0.491	1,770.83	0.00	1,770.83
3130AMPL0	14631	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	06/08/2026	0.375	0.368	4,687.50	0.00	4,687.50
3130AMMW9	14632	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/10/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMN57	14629	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	06/03/2026	0.250	0.245	4,166.67	0.00	4,166.67
3130AMP71	14630	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	06/18/2026	0.400	0.392	6,666.67	0.00	6,666.67
3130AN5U0	14642	010	MC5	10,000,000.00	0.00	967,741.94	07/29/2026	0.500	0.338	277.78	0.00	277.78
3130AN2A7	14633	010	MC5	10,000,000.00	0.00	6,129,032.26	07/13/2026	0.250	0.240	1,250.00	0.00	1,250.00
3130AMN24	14628	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/03/2026	0.375	0.368	3,125.00	0.00	3,125.00
3130AMG22	14624	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMLS9	14627	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/17/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMFQ0	14616	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/26/2026	0.500	0.491	6,250.00	0.00	6,250.00
3130AMF72	14615	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/27/2026	0.650	0.638	8,125.00	0.00	8,125.00
3130AMEX6	14613	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/27/2026	0.500	0.491	6,250.00	0.00	6,250.00
3130AMAV4	14611	010	MC5	5,600,000.00	5,600,000.00	5,600,000.00	04/29/2027	0.500	0.491	2,333.33	0.00	2,333.33
3130ALZA5	14612	010	MC5	9,000,000.00	9,000,000.00	9,000,000.00	04/29/2026	0.500	0.491	3,750.00	0.00	3,750.00
3130AMFT4	14617	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2026	0.625	0.613	5,208.33	0.00	5,208.33
3130AMFN7	14620	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/26/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMG55	14622	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2027	0.750	0.736	6,250.00	0.00	6,250.00
3130AMGG1	14619	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/26/2026	0.600	0.589	5,000.00	0.00	5,000.00
3130AMG22	14618	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	05/27/2026	0.500	0.491	8,333.33	0.00	8,333.33
53944VAS8	14580	010	MTN	5,000,000.00	5,002,679.27	5,002,573.11	08/14/2022	2.250	2.160	9,375.00	-199.45	9,175.55
06742XJX6	14635 T-1	010	ACP	10,000,000.00	9,992,222.22	9,992,933.33	12/23/2021	0.160	0.162	0.00	1,377.78	1,377.78
037833AK6	14536	010	MTN	5,000,000.00	4,930,291.58	4,931,972.98	05/03/2023	2.400	3.141	10,000.00	3,158.99	13,158.99
254673RD0	14539	010	SCD	250,000.00	250,000.00	250,000.00	07/05/2023	3.300	3.300	700.68	0.00	700.68
06406HBY4	14538	010	MC3	3,542,000.00	3,545,641.21	3,544,932.16	09/23/2021	3.550	3.038	10,478.42	-1,332.15	9,146.27
795450T47	14540	010	SCD	250,000.00	250,000.00	250,000.00	07/03/2023	3.300	3.300	700.68	0.00	700.68
084670BJ6	14542	010	MTN	5,000,000.00	4,988,800.24	4,989,108.58	02/11/2023	3.000	3.087	12,500.00	579.30	13,079.30
31422XJW3	14638	010	MC5	10,000,000.00	0.00	3,870,967.74	07/20/2026	0.300	0.279	916.67	0.00	916.67
589331AT4	14545	010	MTN	5,000,000.00	4,964,515.46	4,965,821.01	09/15/2022	2.400	2.953	10,000.00	2,452.85	12,452.85
68389XAS4	14548	010	MTN	5,000,000.00	5,021,031.69	5,020,574.16	07/15/2023	3.625	3.341	15,104.17	-859.61	14,244.56

Pooled Investments Selected Funds
Interest Earnings
July 1, 2021 - July 31, 2021

Exhibit 2-B.1

CUSIP	Investment #	Fund	Security Type	Ending Par Value	Beginning Book Value	Average Book Value	Maturity Date	Current Rate	Annualized Yield	Adjusted Interest Earnings: Interest Earned	Adjusted Interest Earnings: Amortization/ Accretion	Adjusted Interest Earnings: Adjusted Interest Earnings
Fund: Pooled Investment - Long Term												
24422EUM9	14554	010	MTN	5,000,000.00	5,036,567.70	5,035,856.49	10/12/2023	3.650	3.243	15,208.33	-1,336.21	13,872.12
540424AQ1	14555	010	MTN	5,000,000.00	4,937,255.69	4,938,742.17	05/15/2023	2.625	3.273	10,937.50	2,792.78	13,730.28
693475AV7	14557	010	MC3	5,000,000.00	5,015,006.77	5,014,746.87	01/23/2024	3.500	3.309	14,583.33	-488.29	14,095.04
13063DGB8	14559	010	MUN	5,000,000.00	5,055,050.61	5,054,399.47	04/01/2025	3.375	2.991	14,062.50	-1,223.35	12,839.15
49327M2X1	14560	010	MTN	5,000,000.00	5,005,529.51	5,005,109.06	02/01/2022	3.300	3.049	13,750.00	-789.93	12,960.07
05531FBF9	14561	010	MC3	5,000,000.00	5,082,975.94	5,081,461.72	12/06/2023	3.750	2.961	15,625.00	-2,844.89	12,780.11
05531FBG7	14585	010	MC3	5,000,000.00	5,047,807.99	5,045,620.64	06/20/2022	3.050	2.007	12,708.33	-4,109.57	8,598.76
91159HHU7	14562	010	MC3	5,000,000.00	5,185,153.63	5,183,277.69	11/17/2025	3.950	2.938	16,458.33	-3,524.50	12,933.83
20030NBN0	14563	010	MTN	5,000,000.00	5,051,070.17	5,050,520.66	08/15/2025	3.375	3.038	14,062.50	-1,032.41	13,030.09
747525AT0	14564	010	MTN	5,000,000.00	4,980,044.06	4,980,350.75	05/20/2024	2.900	2.993	12,083.33	576.21	12,659.54
747525AU7	14587	010	MTN	5,963,000.00	6,223,190.76	6,221,230.09	05/20/2027	3.250	2.359	16,149.79	-3,683.69	12,466.10
751212AC5	14566	010	MC3	5,000,000.00	5,120,235.25	5,118,967.16	09/15/2025	3.750	3.046	15,625.00	-2,382.47	13,242.53
375558BF9	14570	010	MTN	5,000,000.00	5,111,106.07	5,110,050.05	03/01/2026	3.650	3.047	15,208.33	-1,984.04	13,224.29
233851CU6	14574	010	MTN	3,725,000.00	3,807,161.80	3,806,500.87	01/06/2027	3.450	2.929	10,709.38	-1,241.74	9,467.64
233851CU6	14571	010	MTN	5,000,000.00	5,063,173.94	5,062,665.75	01/06/2027	3.450	3.121	14,375.00	-954.77	13,420.23
233851DN1	14586	010	MTN	5,000,000.00	5,029,391.60	5,025,606.78	11/05/2021	3.750	1.995	15,625.00	-7,110.87	8,514.13
008252AM0	14582	010	MTN	1,000,000.00	1,048,380.50	1,047,562.15	02/15/2024	4.250	2.253	3,541.67	-1,537.52	2,004.15
07330MAA5	14588	010	MTN	5,000,000.00	5,351,262.82	5,348,345.91	10/30/2026	3.800	2.277	15,833.33	-5,491.34	10,341.99
04685A2L4	14590	010	MTN	5,950,000.00	5,985,557.65	5,985,111.63	01/14/2025	2.500	2.274	12,395.83	-837.97	11,557.86
04685A2L4	14602	010	MTN	5,000,000.00	4,877,944.46	4,879,475.45	01/14/2025	2.500	3.208	10,416.67	2,876.41	13,293.08
828807CS4	14606	010	MTN	5,000,000.00	4,996,184.67	4,996,236.74	10/01/2024	3.375	3.337	14,062.50	97.83	14,160.33
2254EBAU5	14614	010	ACP	10,000,000.00	9,985,347.22	9,986,458.33	01/28/2022	0.250	0.254	0.00	2,152.78	2,152.78
05970UBA5	14621	010	ACP	10,000,000.00	9,986,933.33	9,987,866.67	02/10/2022	0.210	0.213	0.00	1,808.34	1,808.34
83368YFY8	14625	010	ACP	10,000,000.00	9,988,205.56	9,989,183.33	01/10/2022	0.220	0.223	0.00	1,894.44	1,894.44
83369BZV1	14636 T-1	010	ACP	10,000,000.00	9,992,961.11	9,993,583.33	12/29/2021	0.140	0.142	0.00	1,205.55	1,205.55
53948BB73	14626	010	ACP	10,000,000.00	9,987,722.22	9,988,611.11	02/07/2022	0.200	0.203	0.00	1,722.22	1,722.22
44890MXV9	14637 T-1	010	ACP	10,000,000.00	9,993,000.00	9,993,933.34	10/29/2021	0.210	0.213	0.00	1,808.34	1,808.34
15654VAK4	14641 T-1	010	MTN	4,000,000.00	0.00	2,193,548.39	07/15/2022	0.300	0.286	533.33	0.00	533.33
			Subtotal	**453,530,000.00**	**420,739,402.70**	**433,890,679.87**			**1.154**	**443,841.72**	**-18,460.95**	**425,380.77**
Fund: Fidelity MM - Trans												
SYS14190	14190	030	RRP	0.00	42,406,280.50	35,566,557.84		0.002	0.002	71.72	0.00	71.72
			Subtotal	**0.00**	**42,406,280.50**	**35,566,557.84**			**0.002**	**71.72**	**0.00**	**71.72**
Fund: Fidelity MM - Regular												
SYS14265	14265	040	RRP	59,210,324.96	116,802,959.86	91,771,749.77		0.003	0.014	1,084.60	0.00	1,084.60

Pooled Investments Selected Funds
Interest Earnings
July 1, 2021 - July 31, 2021

Exhibit 2-B.1

CUSIP	Investment #	Fund	Security Type	Ending Par Value	Beginning Book Value	Average Book Value	Maturity Date	Current Rate	Annualized Yield	Adjusted Interest Earnings: Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
			Subtotal	59,210,324.96	116,802,959.86	91,771,749.77			0.014	1,084.60	0.00	1,084.60
			Total	512,740,324.96	579,948,643.06	561,228,987.48			0.895	444,998.04	-18,460.95	426,537.09

Exhibit 2-B.2

Pooled Investments Selected Funds
Interest Earnings
Sorted by Fund - Fund
August 1, 2021 - August 31, 2021
Yield on Average Book Value

Fund: Pooled Investment - Long Term

CUSIP	Investment #	Fund	Security Type	Ending Par Value	Beginning Book Value	Average Book Value	Maturity Date	Current Rate	Annualized Yield	Adjusted Interest Earnings: Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
3130AMWM0	14634	010	MC5	4,250,000.00	4,250,000.00	4,250,000.00	06/30/2026	0.500	0.491	1,770.83	0.00	1,770.83
3130AMPL0	14631	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	06/08/2026	0.375	0.368	4,687.50	0.00	4,687.50
3130AMMW9	14632	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/10/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMN57	14629	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	06/03/2026	0.250	0.245	4,166.67	0.00	4,166.67
3130AMP71	14630	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	06/18/2026	0.400	0.392	6,666.67	0.00	6,666.67
3130AN5U0	14642	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	07/29/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130ANJY7	14643	010	MC5	40,000,000.00	0.00	7,741,935.48	08/26/2026	0.400	0.338	2,222.22	0.00	2,222.22
3130AN2A7	14633	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	07/13/2026	0.250	0.245	2,083.33	0.00	2,083.33
3130AMN24	14628	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/03/2026	0.375	0.368	3,125.00	0.00	3,125.00
3130AMG22	14624	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMLS9	14627	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/17/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMFQ0	14616	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/26/2026	0.500	0.491	6,250.00	0.00	6,250.00
3130AMF72	14615	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/27/2026	0.650	0.638	8,125.00	0.00	8,125.00
3130AMEX6	14613	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/27/2026	0.500	0.491	6,250.00	0.00	6,250.00
3130AMAV4	14611	010	MC5	5,600,000.00	5,600,000.00	5,600,000.00	04/29/2027	0.500	0.491	2,333.33	0.00	2,333.33
3130ALZA5	14612	010	MC5	9,000,000.00	9,000,000.00	9,000,000.00	04/29/2026	0.500	0.491	3,750.00	0.00	3,750.00
3130AMFT4	14617	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2026	0.625	0.613	5,208.33	0.00	5,208.33
3130AMFN7	14620	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/26/2026	0.500	0.491	4,166.67	0.00	4,166.67
3130AMG55	14622	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2027	0.750	0.736	6,250.00	0.00	6,250.00
3130AMGG1	14619	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/26/2026	0.600	0.589	5,000.00	0.00	5,000.00
3130AMG22	14618	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	05/27/2026	0.500	0.491	8,333.33	0.00	8,333.33
53944VAS8	14580	010	MTN	5,000,000.00	5,002,479.82	5,002,373.66	08/14/2022	2.250	2.160	9,375.00	-199.45	9,175.55
06742XJX6	14635 T-1	010	ACP	10,000,000.00	9,993,600.00	9,994,311.11	12/23/2021	0.160	0.162	0.00	1,377.78	1,377.78
037833AK6	14536	010	MTN	5,000,000.00	4,933,450.57	4,935,131.97	05/03/2023	2.400	3.139	10,000.00	3,158.99	13,158.99
254673RD0	14539	010	SCD	250,000.00	250,000.00	250,000.00	07/05/2023	3.300	3.300	700.68	0.00	700.68
06406HBY4	14538	010	MC3	0.00	3,544,309.06	2,514,953.70	09/23/2021	3.550	3.140	7,684.17	-976.91	6,707.26
795450T47	14540	010	SCD	250,000.00	250,000.00	250,000.00	07/03/2023	3.300	3.300	700.68	0.00	700.68
084670BJ6	14542	010	MTN	5,000,000.00	4,989,379.54	4,989,687.88	02/11/2023	3.000	3.086	12,500.00	579.30	13,079.30
31422XJW3	14638	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	07/20/2026	0.300	0.294	2,500.00	0.00	2,500.00
589331AT4	14545	010	MTN	5,000,000.00	4,966,968.31	4,968,273.86	09/15/2022	2.400	2.951	10,000.00	2,452.85	12,452.85

Pooled Investments Selected Funds
Interest Earnings
August 1, 2021 - August 31, 2021

Exhibit 2-B.2

CUSIP	Investment #	Fund	Security Type	Ending Par Value	Beginning Book Value	Average Book Value	Maturity Date	Current Rate	Annualized Yield	Adjusted Interest Earnings: Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
Fund: Pooled Investment - Long Term												
68389XAS4	14548	010	MTN	5,000,000.00	5,020,172.08	5,019,714.55	07/15/2023	3.625	3.341	15,104.17	-859.60	14,244.57
24422EUM9	14554	010	MTN	5,000,000.00	5,035,231.49	5,034,520.28	10/12/2023	3.650	3.244	15,208.33	-1,336.21	13,872.12
540424AQ1	14555	010	MTN	5,000,000.00	4,940,048.47	4,941,534.94	05/15/2023	2.625	3.272	10,937.50	2,792.77	13,730.27
693475AV7	14557	010	MC3	5,000,000.00	5,014,518.48	5,014,258.58	01/23/2024	3.500	3.310	14,583.33	-488.29	14,095.04
13063DGB8	14559	010	MUN	5,000,000.00	5,053,827.26	5,053,176.12	04/01/2025	3.375	2.992	14,062.50	-1,223.35	12,839.15
49327M2X1	14560	010	MTN	5,000,000.00	5,004,739.58	5,004,319.13	02/01/2022	3.300	3.049	13,750.00	-789.93	12,960.07
05531FBF9	14561	010	MC3	5,000,000.00	5,080,131.05	5,078,616.84	12/06/2023	3.750	2.963	15,625.00	-2,844.89	12,780.11
05531FBG7	14585	010	MC3	5,000,000.00	5,043,698.42	5,041,511.07	06/20/2022	3.050	2.008	12,708.33	-4,109.57	8,598.76
91159HHU7	14562	010	MC3	5,000,000.00	5,181,629.13	5,179,753.19	11/17/2025	3.950	2.940	16,458.33	-3,524.50	12,933.83
20030NBN0	14563	010	MTN	5,000,000.00	5,050,037.76	5,049,488.24	08/15/2025	3.375	3.038	14,062.50	-1,032.42	13,030.08
747525AT0	14564	010	MTN	5,000,000.00	4,980,620.27	4,980,926.96	05/20/2024	2.900	2.993	12,083.33	576.20	12,659.53
747525AU7	14587	010	MTN	5,963,000.00	6,219,507.07	6,217,546.40	05/20/2027	3.250	2.361	16,149.79	-3,683.68	12,466.11
751212AC5	14566	010	MC3	5,000,000.00	5,117,852.78	5,116,584.69	09/15/2025	3.750	3.047	15,625.00	-2,382.47	13,242.53
375558BF9	14570	010	MTN	5,000,000.00	5,109,122.03	5,108,066.01	03/01/2026	3.650	3.048	15,208.33	-1,984.03	13,224.30
233851CU6	14574	010	MTN	3,725,000.00	3,805,920.06	3,805,259.13	01/06/2027	3.450	2.929	10,709.38	-1,241.74	9,467.64
233851CU6	14571	010	MTN	5,000,000.00	5,062,219.17	5,061,710.98	01/06/2027	3.450	3.122	14,375.00	-954.77	13,420.23
233851DN1	14586	010	MTN	5,000,000.00	5,022,280.73	5,018,495.91	11/05/2021	3.750	1.998	15,625.00	-7,110.87	8,514.13
008252AM0	14582	010	MTN	1,000,000.00	1,046,842.98	1,046,024.63	02/15/2024	4.250	2.256	3,541.67	-1,537.51	2,004.16
07330MAA5	14588	010	MTN	5,000,000.00	5,345,771.48	5,342,854.57	10/30/2026	3.800	2.279	15,833.33	-5,491.34	10,341.99
04685A2L4	14590	010	MTN	5,950,000.00	5,984,719.68	5,984,273.67	01/14/2025	2.500	2.274	12,395.83	-837.96	11,557.87
04685A2L4	14602	010	MTN	5,000,000.00	4,880,820.87	4,882,351.86	01/14/2025	2.500	3.206	10,416.67	2,876.41	13,293.08
828807CS4	14606	010	MTN	5,000,000.00	4,996,282.50	4,996,334.57	10/01/2024	3.375	3.337	14,062.50	97.83	14,160.33
2254EBAU5	14614	010	ACP	10,000,000.00	9,987,500.00	9,988,611.11	01/28/2022	0.250	0.254	0.00	2,152.78	2,152.78
05970UBA5	14621	010	ACP	10,000,000.00	9,988,741.67	9,989,675.00	02/10/2022	0.210	0.213	0.00	1,808.33	1,808.33
83368YFY8	14625	010	ACP	10,000,000.00	9,990,100.00	9,991,077.78	01/10/2022	0.220	0.223	0.00	1,894.45	1,894.45
83369BZV1	14636 T-1	010	ACP	10,000,000.00	9,994,166.66	9,994,788.89	12/29/2021	0.140	0.142	0.00	1,205.56	1,205.56
53948BB73	14626	010	ACP	10,000,000.00	9,989,444.44	9,990,333.33	02/07/2022	0.200	0.203	0.00	1,722.23	1,722.23
44890MXV9	14637 T-1	010	ACP	10,000,000.00	9,994,808.34	9,995,741.67	10/29/2021	0.210	0.213	0.00	1,808.33	1,808.33
15654VAK4	14641 T-1	010	MTN	4,000,000.00	4,000,000.00	4,000,000.00	07/15/2022	0.300	0.294	1,000.00	0.00	1,000.00
			Subtotal	**489,988,000.00**	**454,720,941.75**	**461,424,217.78**			**1.102**	**450,041.91**	**-18,105.68**	**431,936.23**
Fund: Fidelity MM - Regular												
SYS14265	14265	040	RRP	4,737,694.85	59,210,324.96	43,547,820.76		0.003	0.010	369.89	0.00	369.89
			Subtotal	**4,737,694.85**	**59,210,324.96**	**43,547,820.76**			**0.010**	**369.89**	**0.00**	**369.89**
			Total	**494,725,694.85**	**513,931,266.71**	**504,972,038.54**			**1.008**	**450,411.80**	**-18,105.68**	**432,306.12**

Exhibit 2-B.3

Pooled Investments Selected Funds
Interest Earnings
Sorted by Fund - Fund
September 1, 2021 - September 30, 2021
Yield on Average Book Value

CUSIP	Investment #	Fund	Security Type	Ending Par Value	Beginning Book Value	Average Book Value	Maturity Date	Current Rate	Annualized Yield	Adjusted Interest Earnings: Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
Fund: Pooled Investment - Long Term												
3130AMWM0	14634	010	MC5	4,250,000.00	4,250,000.00	4,250,000.00	06/30/2026	0.500	0.507	1,770.83	0.00	1,770.83
3130AMPL0	14631	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	06/08/2026	0.375	0.380	4,687.50	0.00	4,687.50
3130AMMW9	14632	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/10/2026	0.500	0.507	4,166.67	0.00	4,166.67
3130AMN57	14629	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	06/03/2026	0.250	0.253	4,166.67	0.00	4,166.67
3130AMP71	14630	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	06/18/2026	0.400	0.406	6,666.67	0.00	6,666.67
3130AN5U0	14642	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	07/29/2026	0.500	0.507	4,166.67	0.00	4,166.67
3130ANJY7	14643	010	MC5	40,000,000.00	40,000,000.00	40,000,000.00	08/26/2026	0.400	0.406	13,333.33	0.00	13,333.33
3130AN2A7	14633	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	07/13/2026	0.250	0.253	2,083.33	0.00	2,083.33
3130AMN24	14628	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/03/2026	0.375	0.380	3,125.00	0.00	3,125.00
3130AMG22	14624	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2026	0.500	0.507	4,166.67	0.00	4,166.67
3130AMLS9	14627	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	06/17/2026	0.500	0.507	4,166.67	0.00	4,166.67
3130AMFQ0	14616	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/26/2026	0.500	0.507	6,250.00	0.00	6,250.00
3130AMF72	14615	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/27/2026	0.650	0.659	8,125.00	0.00	8,125.00
3130AMEX6	14613	010	MC5	15,000,000.00	15,000,000.00	15,000,000.00	05/27/2026	0.500	0.507	6,250.00	0.00	6,250.00
3130AMAV4	14611	010	MC5	5,600,000.00	5,600,000.00	5,600,000.00	04/29/2027	0.500	0.507	2,333.33	0.00	2,333.33
3130ALZA5	14612	010	MC5	9,000,000.00	9,000,000.00	9,000,000.00	04/29/2026	0.500	0.507	3,750.00	0.00	3,750.00
3130AMFT4	14617	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2026	0.625	0.634	5,208.33	0.00	5,208.33
3130AMFN7	14620	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/26/2026	0.500	0.507	4,166.67	0.00	4,166.67
3130AMG55	14622	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/27/2027	0.750	0.760	6,250.00	0.00	6,250.00
3130AMGG1	14619	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	05/26/2026	0.600	0.608	5,000.00	0.00	5,000.00
3130AMG22	14618	010	MC5	20,000,000.00	20,000,000.00	20,000,000.00	05/27/2026	0.500	0.507	8,333.33	0.00	8,333.33
53944VAS8	14580	010	MTN	5,000,000.00	5,002,280.37	5,002,177.32	08/14/2022	2.250	2.232	9,375.00	-199.45	9,175.55
06742XJX6	14635 T-1	010	ACP	10,000,000.00	9,994,977.78	9,995,666.67	12/23/2021	0.160	0.162	0.00	1,333.33	1,333.33
037833AK6	14536	010	MTN	5,000,000.00	4,936,609.56	4,938,241.71	05/03/2023	2.400	3.242	10,000.00	3,158.99	13,158.99
254673RD0	14539	010	SCD	250,000.00	250,000.00	250,000.00	07/05/2023	3.300	3.300	678.08	0.00	678.08
795450T47	14540	010	SCD	250,000.00	250,000.00	250,000.00	07/03/2023	3.300	3.300	678.08	0.00	678.08
084670BJ6	14542	010	MTN	5,000,000.00	4,989,958.84	4,990,258.15	02/11/2023	3.000	3.189	12,500.00	579.30	13,079.30
31422XJW3	14638	010	MC5	10,000,000.00	10,000,000.00	10,000,000.00	07/20/2026	0.300	0.304	2,500.00	0.00	2,500.00
589331AT4	14545	010	MTN	5,000,000.00	4,969,421.16	4,970,688.46	09/15/2022	2.400	3.048	10,000.00	2,452.84	12,452.84
68389XAS4	14548	010	MTN	5,000,000.00	5,019,312.48	5,018,868.35	07/15/2023	3.625	3.453	15,104.17	-859.61	14,244.56

Pooled Investments Selected Funds
Interest Earnings
September 1, 2021 - September 30, 2021

Exhibit 2-B.3

CUSIP	Investment #	Fund	Security Type	Ending Par Value	Beginning Book Value	Average Book Value	Maturity Date	Current Rate	Annualized Yield	Adjusted Interest Earnings: Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
Fund: Pooled Investment - Long Term												
24422EUM9	14554	010	MTN	5,000,000.00	5,033,895.28	5,033,204.90	10/12/2023	3.650	3.353	15,208.33	-1,336.22	13,872.11
540424AQ1	14555	010	MTN	5,000,000.00	4,942,841.24	4,944,284.17	05/15/2023	2.625	3.379	10,937.50	2,792.77	13,730.27
693475AV7	14557	010	MC3	5,000,000.00	5,014,030.19	5,013,777.91	01/23/2024	3.500	3.420	14,583.33	-488.29	14,095.04
13063DGB8	14559	010	MUN	5,000,000.00	5,052,603.91	5,051,971.85	04/01/2025	3.375	3.092	14,062.50	-1,223.34	12,839.16
49327M2X1	14560	010	MTN	5,000,000.00	5,003,949.65	5,003,541.52	02/01/2022	3.300	3.151	13,750.00	-789.93	12,960.07
05531FBF9	14561	010	MC3	5,000,000.00	5,077,286.16	5,075,816.30	12/06/2023	3.750	3.063	15,625.00	-2,844.89	12,780.11
05531FBG7	14585	010	MC3	5,000,000.00	5,039,588.85	5,037,465.57	06/20/2022	3.050	2.077	12,708.33	-4,109.57	8,598.76
91159HHU7	14562	010	MC3	5,000,000.00	5,178,104.63	5,176,283.64	11/17/2025	3.950	3.040	16,458.33	-3,524.49	12,933.84
20030NBN0	14563	010	MTN	5,000,000.00	5,049,005.34	5,048,471.93	08/15/2025	3.375	3.140	14,062.50	-1,032.42	13,030.08
747525AT0	14564	010	MTN	5,000,000.00	4,981,196.47	4,981,494.18	05/20/2024	2.900	3.092	12,083.33	576.21	12,659.54
747525AU7	14587	010	MTN	5,963,000.00	6,215,823.39	6,213,920.16	05/20/2027	3.250	2.441	16,149.79	-3,683.68	12,466.11
751212AC5	14566	010	MC3	5,000,000.00	5,115,470.31	5,114,239.37	09/15/2025	3.750	3.150	15,625.00	-2,382.47	13,242.53
375558BF9	14570	010	MTN	5,000,000.00	5,107,138.00	5,106,112.91	03/01/2026	3.650	3.151	15,208.33	-1,984.04	13,224.29
233851CU6	14574	010	MTN	3,725,000.00	3,804,678.32	3,804,036.76	01/06/2027	3.450	3.028	10,709.38	-1,241.74	9,467.64
233851CU6	14571	010	MTN	5,000,000.00	5,061,264.40	5,060,771.10	01/06/2027	3.450	3.226	14,375.00	-954.77	13,420.23
233851DN1	14586	010	MTN	5,000,000.00	5,015,169.86	5,011,495.91	11/05/2021	3.750	2.067	15,625.00	-7,110.87	8,514.13
008252AM0	14582	010	MTN	1,000,000.00	1,045,305.47	1,044,511.09	02/15/2024	4.250	2.334	3,541.67	-1,537.52	2,004.15
07330MAA5	14588	010	MTN	5,000,000.00	5,340,280.14	5,337,442.94	10/30/2026	3.800	2.357	15,833.33	-5,491.35	10,341.98
04685A2L4	14590	010	MTN	5,950,000.00	5,983,881.72	5,983,448.77	01/14/2025	2.500	2.350	12,395.83	-837.97	11,557.86
04685A2L4	14602	010	MTN	5,000,000.00	4,883,697.28	4,885,183.42	01/14/2025	2.500	3.311	10,416.67	2,876.40	13,293.07
828807CS4	14606	010	MTN	5,000,000.00	4,996,380.33	4,996,430.88	10/01/2024	3.375	3.448	14,062.50	97.83	14,160.33
2254EBAU5	14614	010	ACP	10,000,000.00	9,989,652.78	9,990,729.16	01/28/2022	0.250	0.254	0.00	2,083.33	2,083.33
05970UBA5	14621	010	ACP	10,000,000.00	9,990,550.00	9,991,454.17	02/10/2022	0.210	0.213	0.00	1,750.00	1,750.00
83368YFY8	14625	010	ACP	10,000,000.00	9,991,994.45	9,992,941.67	01/10/2022	0.220	0.223	0.00	1,833.33	1,833.33
83369BZV1	14636 T-1	010	ACP	10,000,000.00	9,995,372.22	9,995,975.00	12/29/2021	0.140	0.142	0.00	1,166.67	1,166.67
53948BB73	14626	010	ACP	10,000,000.00	9,991,166.67	9,992,027.78	02/07/2022	0.200	0.203	0.00	1,666.66	1,666.66
44890MXV9	14637 T-1	010	ACP	10,000,000.00	9,996,616.67	9,997,520.83	10/29/2021	0.210	0.213	0.00	1,750.00	1,750.00
15654VAK4	14641 T-1	010	MTN	4,000,000.00	4,000,000.00	4,000,000.00	07/15/2022	0.300	0.304	1,000.00	0.00	1,000.00
			Subtotal	**489,988,000.00**	**491,159,503.92**	**491,150,454.52**			**1.080**	**453,423.65**	**-17,514.96**	**435,908.69**
Fund: Fidelity MM - Regular												
SYS14265	14265	040	RRP	137,724.97	4,737,694.85	3,664,362.52		0.003	0.010	30.12	0.00	30.12
			Subtotal	**137,724.97**	**4,737,694.85**	**3,664,362.52**			**0.010**	**30.12**	**0.00**	**30.12**
			Total	**490,125,724.97**	**495,897,198.77**	**494,814,817.04**			**1.072**	**453,453.77**	**-17,514.96**	**435,938.81**

Exhibit 2-C

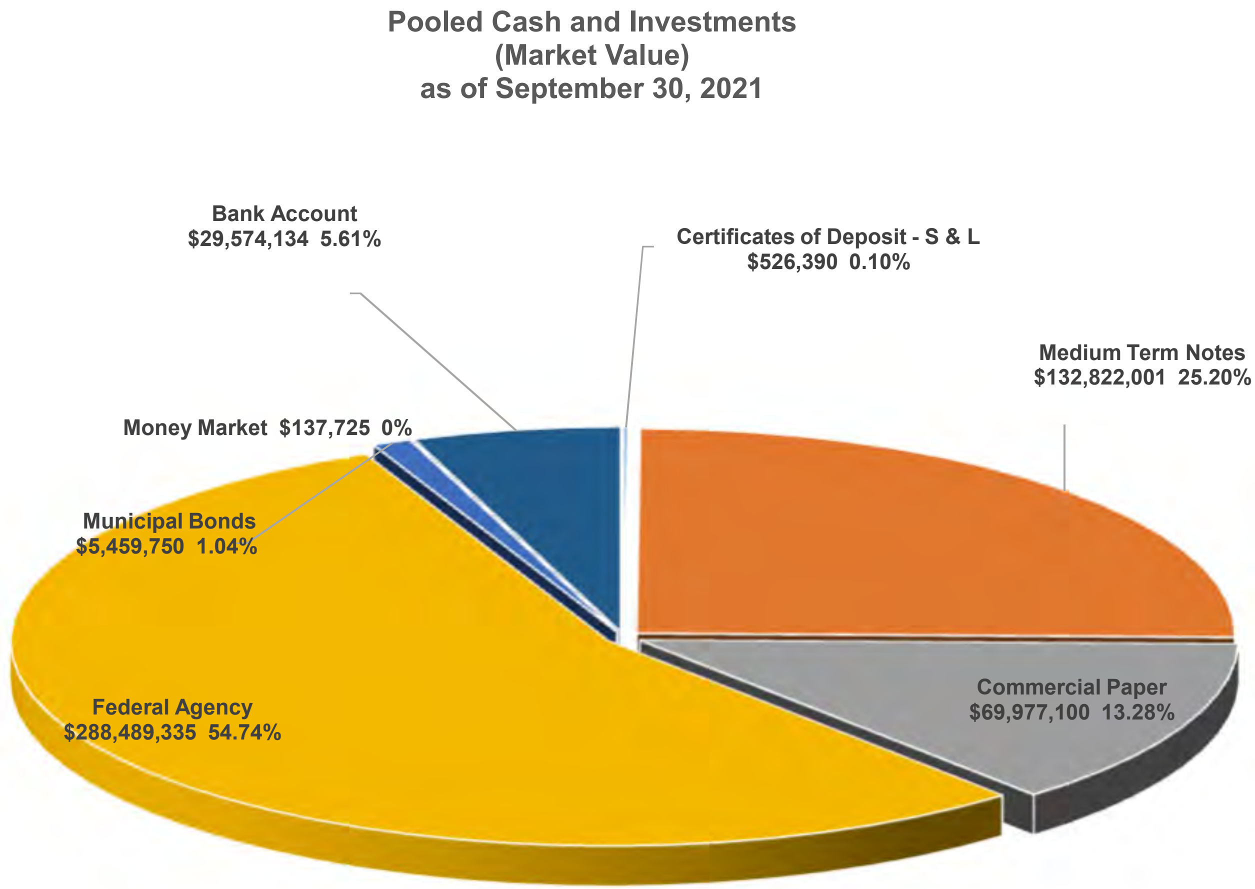

Pooled Cash and Investments
(Market Value)
as of September 30, 2021
Bank Account
$29,574,134 5.61%
Certificates of Deposit - S & L
$526,390 0.10%
Medium Term Notes
$132,822,001 25.20%
Money Market $137,725 0%
Municipal Bonds
$5,459,750 1.04%
Commercial Paper
$69,977,100 13.28%
Federal Agency
$288,489,335 54.74%

Exhibit 2-D

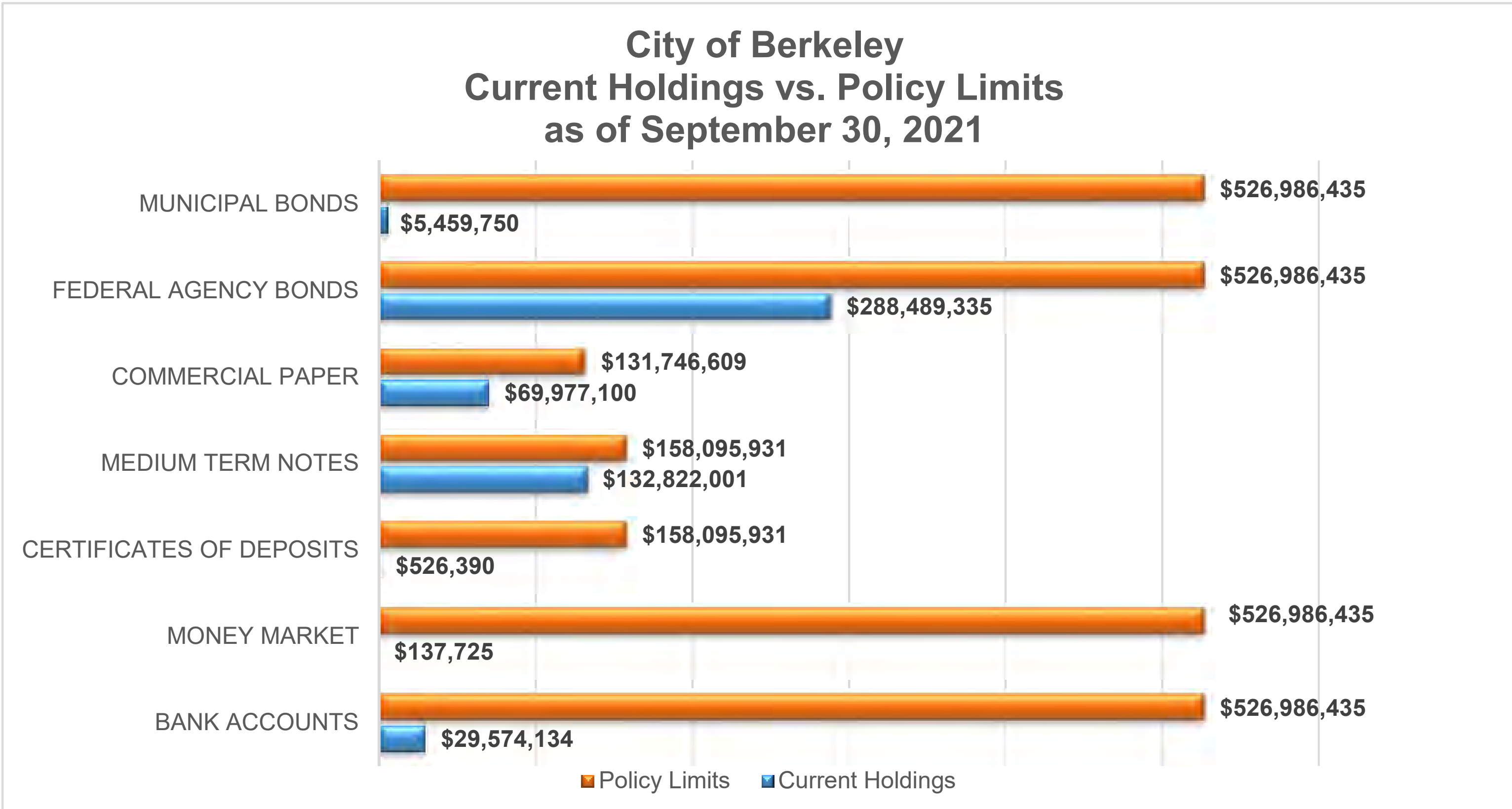
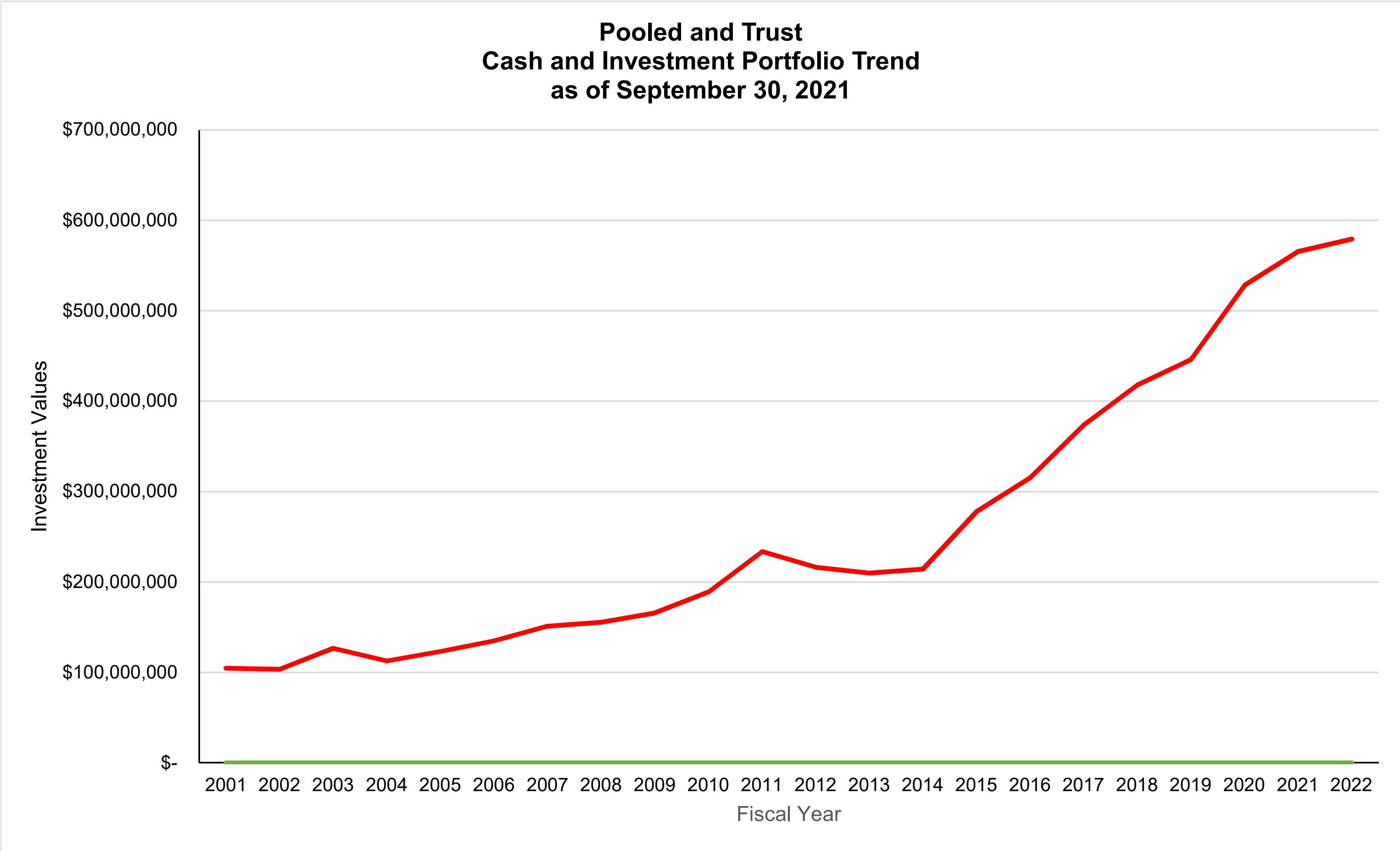

City of Berkeley
Current Holdings vs. Policy Limits
as of September 30, 2021
MUNICIPAL BONDS
$526,986,435
$5,459,750
FEDERAL AGENCY BONDS
$526,986,435
$288,489,335
COMMERCIAL PAPER
$131,746,609
$69,977,100
MEDIUM TERM NOTES
$158,095,931
$132,822,001
CERTIFICATES OF DEPOSITS
$158,095,931
$526,390
MONEY MARKET
$526,986,435
$137,725
BANK ACCOUNTS
$526,986,435
$29,574,134
Policy Limits
Current Holdings

Exhibit 2-E

2022	579,233,606	579,233,606



Attachment 3

Summary of Pooled Cash and Investments - Trust Funds
(Market Value)
As of September 30, 2021

		Pooled Cash	Investments (Book Value)	Gain/Loss on Investments	Pooled Cash & Investments (Market Value)
Retiree Medical Trust Fund					
Fund No.					
721	BHA	$ 369,261	$ 220,310	$ 14,392	$ 603,963
722	M1=IBEW	(17,938)	112,302	9,096	103,460
723	M2=Local 1	4,580,466	5,231,939	391,508	10,203,913
724	MUI=Z1	727,124	1,150,436	93,158	1,970,718
725	MUI=Z2 to Z6	1,067,046	1,545,665	121,064	2,733,775
726	M535= Local 535	4,178,253	5,099,552	400,444	9,678,249
727	M3=Local 790	2,954,676	3,276,493	233,795	6,464,964
Total Retiree Medical Trust Fund		**13,858,888**	**16,636,697**	**1,263,457**	**31,759,042**
Fire Medical Trust Fund					
736	Fire Medical Trust Fund	5,160,515	6,858,668	538,489	12,557,672
Total Fire Medical Trust Fund		**5,160,515**	**6,858,668**	**538,489**	**12,557,672**
Police Medical Trust Fund					
731	Police EE Retiree HLT Assistance Plan	667,935	1,641,696	101,415	2,411,046
701	Safety Members Pension Fund	32,390	-	-	32,390
706	Police Medical Trust Fund	2,426,677	2,852,969	207,375	5,487,021
Total Police Medical Trust Fund		**3,127,002**	**4,494,665**	**308,790**	**7,930,457**
Total Trust Funds		**$ 22,146,405**	**$ 27,990,030**	**$ 2,110,736**	**$ 52,247,171**

Exhibit 3-A

Retiree Medical Trust Fund
Fund 721 - 727
Interest Earnings
July 1 to September 30, 2021

			Investments As of September 30, 2021						Interest Earnings July 1 to September 30, 2021				
											Adjusted Interest Earnings		
CUSIP	Investment #	Issuer	Par Value	Beginning Book Value	Ending Book Value	Market Value	Maturity Date	Moody's Rating	Current Rate	Annualized Yield	Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
Federal Agency Coupon Securities													
3133EFQT7	14361	Fed Farm Credit Bank	2,600,000.00	2,608,458.71	2,607,549.17	2,796,586.00	11/25/2025	AAA	2.700	2.601	17,550.00	(454.77)	17,095.23
Municipal Bonds													
672319CC2	14283	OAKGEN	2,750,000.00	2,746,465.07	2,748,970.14	2,768,672.50	12/15/2021	AA2	3.800	3.997	26,125.00	1,252.53	27,377.53
786091AG3	14316	SACGEN	5,000,000.00	5,234,153.54	5,207,135.83	5,988,850.00	08/01/2025	A3	7.250	5.917	90,625.00	(13,508.86)	77,116.14
Savo Island Loan													
SYS10988	10988	EMPMED	193,000.00	233,000.00	193,000.00	193,000.00	09/01/2025	N/A	8.000	8.000	4,412.10	-	4,412.10
Preferred Securities													
00206R706	14591	AT&T Inc.	1,680,033.60	1,680,033.60	1,680,033.60	1,758,035.16	N/A	N/A	4.596	2.792	11,823.82	-	11,823.82
00206R706	14596	AT&T Inc.	1,680,008.40	1,680,008.40	1,680,008.40	1,758,008.79	N/A	N/A	4.640	2.792	11,823.65	-	11,823.65
00206R706	14597	AT&T Inc.	2,520,000.00	2,520,000.00	2,520,000.00	2,637,000.00	N/A	N/A	4.643	2.792	17,735.39	-	17,735.39
		Total	**$ 16,423,042.00**	**$ 16,702,119.32**	**$ 16,636,697.14**	**$ 17,900,152.45**				**3.984**	**$ 180,094.96**	**$ (12,711.10)**	**$ 167,383.86**

Total Investments (Book Value)	**$ 16,636,697.14**
Gain/Loss on Investments	**1,263,455.31**
Total Investments (Market Value)	**17,900,152.45**
Temporarily Invested with Pooled Cash & Investments	**13,858,888.00**
Total Pooled Cash and Investments	**$ 31,759,040.45**

Exhibit 3-B

Fire Retiree Medical
Fund 736
Interest Earnings
July 1 to September 30, 2021

			Investments As of September 30, 2021						Interest Earnings July 1 to September 30, 2021				
											Adjusted Interest Earnings		
CUSIP	Investment #	Issuer	Par Value	Beginning Book Value	Ending Book Value	Market Value	Maturity Date	Moody's Rating	Current Rate	Annualized Yield	Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
Medium Term Notes													
6174467X1	14318	Morgan Stanley DW DTC#0015	2,000,000.00	2,035,875.22	2,032,015.36	2,286,280.00	11/24/2025	BAA1	5.000	4.502	25,000.00	(1,929.93)	23,070.07
Federal Agency Coupon Securities													
3133EFQT7	14362	Fed Farm Credit Bank	2,300,000.00	2,307,482.71	2,306,678.11	2,473,903.00	11/25/2025	AAA	2.700	2.601	15,525.00	(402.30)	15,122.70
Preferred Securities													
00206R706	14592	AT&T Inc.	1,679,983.20	1,679,983.20	1,679,983.20	1,757,982.42	N/A	N/A	4.596	2.792	11,823.48	-	11,823.48
00206R706	14594	AT&T Inc.	839,991.60	839,991.60	839,991.60	878,991.21	N/A	N/A	4.640	2.792	5,911.73	-	5,911.73
		Total	**$ 6,819,974.80**	**$ 6,863,332.73**	**$ 6,858,668.27**	**$ 7,397,156.63**				**3.235**	**$ 58,260.21**	**$ (2,332.23)**	**$ 55,927.98**

Total Investments (Book Value)	**$ 6,858,668.27**
Gain/Loss on Investments	**538,488.36**
Total Investments (Market Value)	**7,397,156.63**
Temporarily Invested with Pooled Cash & Investments	**5,160,515.00**
Total Pooled Cash and Investments	**$ 12,557,671.63**

Exhibit 3-C

CITY OF BERKELEY

Police Retiree Medical
Fund 731 and 706
Interest Earnings
July 1 to September 30, 2021

CUSIP	Investment #	Issuer	Par Value	Beginning Book Value	Ending Book Value	Market Value	Maturity Date	Moody's Rating	Current Rate	Annualized Yield	Interest Earned	Amortization/ Accretion	Adjusted Interest Earnings
			Investments As of September 30, 2021						Interest Earnings July 1 to September 30, 2021		Adjusted Interest Earnings		
Medium Term Notes													
6174467X1	14319	Morgan Stanley DW DTC#0015	500,000.00	508,164.67	508,003.84	571,570.00	11/24/25	BAA1	5.000	4.502	6,250.00	(482.48)	5,767.52
Federal Agency Coupon Securities													
3133EFQT7	14363	Fed. Farm Credit Banks	2,300,000.00	2,306,812.21	2,306,678.11	2,473,903.00	11/25/25	AAA	2.700	2.601	15,525.00	(402.30)	15,122.70
Preferred Securities													
00206R706	14593	AT&T Inc.	1,679,983.20	1,679,983.20	1,679,983.20	1,757,982.42	N/A	N/A	4.596	2.792	11,823.48	-	11,823.48
		Total	**$ 4,479,983.20**	**$ 4,494,960.08**	**$ 4,494,665.15**	**$ 4,803,455.42**				**2.887**	**$ 33,598.48**	**$ (884.78)**	**$ 32,713.70**

Total Investments (Book Value)	**$ 4,494,665.15**
Gain/Loss on Investments	**308,790.27**
Total Investments (Market Value)	**4,803,455.42**
Temporarily Invested with Pooled Cash & Investments	**3,127,002.00**
Total Pooled Cash and Investments	**$ 7,930,457.42**

Communications

All communications submitted to the City Council are public record. Communications are not published directly to the City's website. Copies of individual communications are available for viewing at the City Clerk Department and through Records Online.

City Clerk Department
2180 Milvia Street
Berkeley, CA 94704
(510) 981-6900

Records Online
http://www.cityofberkeley.info/recordsonline

To search for communications associated with a particular City Council meeting using Records Online:

1. Select Search Type = “Public – Communication Query (Keywords)”
2. From Date: Enter the date of the Council meeting
3. To Date: Enter the date of the Council meeting (this may match the From Date field)
4. Click the “Search” button
5. Communication packets matching the entered criteria will be returned
6. Click the desired file in the Results column to view the document as a PDF