

AGENDA



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:

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

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. 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
- 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
- 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
- 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

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

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

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

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 O2X 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
- 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
- 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
- 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

Consent Calendar

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

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

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

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

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 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.

- 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 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.

Action Calendar – Public Hearings

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.

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

Information Reports

19. **Update on Berkeley’s Redistricting Process for City Council Districts**

From: City Manager

Contact: Mark Numainville, City Clerk, (510) 981-6900

20. **Healthy Checkout Ordinance Protocols**

From: City Manager

Contact: Lisa Warhuus, Health, Housing, and Community Services, (510) 981-5400

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.

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 January 27, 2022.

A handwritten signature in black ink, appearing to read "Mark Numainville".

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](#).

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

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. 7,796-N.S.

ENACTING BERKELEY MUNICIPAL CODE CHAPTER 3.82 CREATING THE ENVIRONMENT AND CLIMATE COMMISSION

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

Section 1. That Berkeley Municipal Code Chapter 3.82 is enacted to read as follows:

ENVIRONMENT AND CLIMATE COMMISSION

Sections:

- 3.82.010 Established--Membership--Appointment.
- 3.82.020 Council representatives – Functions.
- 3.82.030 Organization, meetings, rules and procedures.
- 3.82.040 Functions.

3.82.010 Established--Membership--Appointment.

A. An Environment and Climate Commission is established. The commission shall consist of nine members. Appointments to the commission shall be made, and vacancies on the commission shall be filled, in accordance with the provisions of Sections 2.04.030 through 2.04.130. City Council shall appoint representatives with appropriate expertise and demonstrated commitment to the areas outlined in the functions section 3.04.40.

B. For purposes of determining term limits under Section 3.02.040, a commissioner’s service on the Energy Commission or the Community Environmental Advisory Commission shall be counted toward their service upon their appointment to the Environment and Climate Commission.

3.82.020 Council representative as commission liaison.

The City Council may appoint one of its members to act as a non-voting, uncompensated liaison representative to the Environment and Climate Commission.

The functions of such liaison representatives are:

- A. To attend meetings of said commission;
- B. To advise the Council of the background, reasons and rationale behind decisions and recommendations of said commission; and

C. On request of any member of said commission, to advise the commission of policies, procedures and decisions of the council that may bear on matters under discussion by the commission.

3.82.030 Organization, meetings, rules and procedures.

A. The commission annually shall elect one of its members as the chairperson and one of its members as the vice-chairperson. One or more officers or employees of the City designated by the City Manager shall serve as secretary of the commission.

B. The commission shall establish a regular place and time for meeting. All meetings shall be noticed as required by law and shall be scheduled in a way to allow for maximum input from the public. The frequency of commission meetings shall be as determined by City Council Resolution. The scheduling of special meetings in addition to those established by City Council resolution, except special meetings that take the place of cancelled regular meetings, shall be subject to approval by the City Council. A request for a special meeting shall include the reason for the proposed meeting and should be expedited on the City Council's agenda, or in the alternative, placed before the Agenda Committee for approval.

C. The commission may make and alter rules governing its organization and procedures which are consistent with this Chapter or any other applicable ordinance of the City.

D. A majority of the members appointed to the commission shall constitute a quorum and the affirmative vote of a majority of the members appointed is required to take any action.

E. The commission shall keep an accurate record of its proceedings and transactions.

3.82.040 Functions.

The Environment and Climate Commission shall be an advisory board and shall review and advise the City Council on matters related to emerging issues, policies, projects, programs, planning efforts, activities, and funding of environmental sustainability and climate change mitigation, adaptation and resilience. Its scope will include work to advance the goals of advancing green buildings and resource efficiency;

decarbonizing buildings and transportation; engaging and educating the community; addressing the impacts and welfare of all species, including animals, insects, and plants; reducing greenhouse gas emissions; reducing toxics and preventing pollution; and supporting environmental justice.

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 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 January 18, 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.

ORDINANCE NO. 7,797-N.S.

AMENDMENTS TO THE ACCESSORY DWELLING UNIT (ADU) ORDINANCE (BMC 23.306) AND DEFINED TERMS (BMC 23.502.020) RELATING TO ADUS

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

Section 1. That Berkeley Municipal Code 23.306 is amended to read as follows:

23.306 Accessory Dwelling Units

Sections:

- 23.102.010– Purposes.
- 23.102.020– Applicability.
- 23.102.030– Permit Procedures.
- 23.306.040– Development Standards.
- 23.306.050– Deed Restrictions.
- 23.306.060– Neighborhood Noticing.

23.102.010 – Purposes

The purposes of this Chapter are to:

- A. Implement California Government Code Section 65852.2 and 65852.22.
- B. Increase overall supply and range of housing options in Berkeley.
- C. Expedite small-scale infill development.
- D. Support Housing Element goals of facilitating construction of accessory dwelling units and increasing the number of housing units that are more affordable to Berkeley residents.
- E. Encourage development of accessory dwelling units in zoning districts with compatible land uses and infrastructure.
- F. Reduce potential impacts of new development in high fire severity areas and the Hillside Overlay District due to unique conditions and hazards within these areas that require additional restrictions on ADUs and JADUs because of impacts of traffic flow and public safety, consistent with Government Code 65852.2, subdivision (a)(1)(A), which allows local agencies to regulate ADUs based on "adequacy of water and sewer service, and the impacts of traffic flow and public safety."

23.102.020 – Applicability.

A. The provisions of this chapter apply to zoning districts where residential uses are permitted, on lots that have at least one existing or proposed Dwelling Unit or Group Living Accommodation that is not a Fraternity House, Sorority House or Dormitory.

1. Exceptions. The provisions of this chapter that permit ADUs and JADUs do not apply to lots in the R-1H (Single-Family Residential—Hillside Overlay), R-2H (Restricted Two-Family Residential—Hillside Overlay), or R-2AH (Restricted Multiple-Family Residential—Hillside Overlay) Districts. In such districts, ADUs and JADUs shall only be permitted to the extent required by subdivision (e)(1) of Government Code Section 65852.2.

B. Number of ADUs and JADUs Permitted Per Lot.

1. Lot with one Single Family Dwelling: One ADU and/or one JADU.
2. Lot with more than one Single Family Dwelling: One ADU.
3. Lot with a Duplex or Multi-Family Dwelling, either:
 - a. Up to two detached ADUs; or
 - b. At least one ADU converted from non-habitable portions of the existing Main Building that are not within the living space of a Dwelling Unit (e.g. basement, attic, garages, storage room). The maximum number of ADUs converted from portions of the existing Main Building that are not within the living space of a Dwelling Unit shall not exceed 25% of the total number of existing Dwelling Units on the lot.
4. Lot with a Group Living Accommodation that is not a Fraternity House, Sorority House or Dormitory: One ADU.

23.102.030 – Permit Procedures.

A. Zoning Certificate. An application for an ADU or JADU shall be allowed with a Zoning Certificate. Review must be completed within 60 days of submission of a completed application. A completed application must include evidence of compliance with this Chapter, including Development Standards, Deed Restrictions, and Neighborhood Noticing.

1. If an application to create an ADU or JADU is submitted as part of a project that requires discretionary review, a Zoning Certificate for a Building Permit shall not be issued for the ADU or JADU until the discretionary approval(s) has/have been granted and any applicable appeal periods have expired.
2. Issuance of a Zoning Certificate shall not be denied for the construction or conversion of an ADU or JADU that complies with the requirements of Government Code Section 65852.2(e)(1).

3. Issuance of a Zoning Certificate for the construction or conversion of an ADU or JADU shall not be denied based on the failure of an applicant to correct a nonconforming zoning condition.

23.306.040 Development Standards.

A. Basic Standards. See Table 23.306-1: ADU and JADU Development Standards.

TABLE 23.306-1 ADU AND JADU DEVELOPMENT STANDARDS

	ADU¹	JADU
Maximum Size ²		500 sf
Studio or 1 bedroom	850 sf	N/A
2 + bedrooms	1000 sf	
Maximum Height	20 ft.	
Front Yard Setback	Same as underlying district	
Rear Setback	4 ft ³	
Side Setback	4 ft ³	
Required Off-Street Parking	None ⁴	
<p>[1] An ADU converted from an Accessory Building or Accessory Structure legally established at least three years prior to submission of an ADU application, that does not comply with the Maximum Height, Size, and/or Rear and Side Setback requirements, is allowed to maintain non-conformity to the same dimensions of the existing Accessory Building or Accessory Structure. Any physical additions to the existing Accessory Building or Accessory Structure shall comply with the development standards in this table.</p> <p>[2] An ADU created entirely through conversion, with no modifications to the existing building envelope that exceeds the development standards for Maximum Size in this table is allowed a physical addition of no more than 150 square feet. The addition must comply with Maximum Height and Setback requirements in this table.</p> <p>[3] If there is a lesser setback allowed for a comparable Accessory Building or Accessory Structure in the underlying zoning district, that setback shall apply.</p> <p>[4] Replacement parking is not required. Replacement of off-street parking for the Main Building is allowed and does not need to comply with Parking Maximums (BMC 23.322.070) nor Parking Layout and Design (BMC 23.322.080).</p>		

B. Projections. Architectural features (Chimneys, Water Heater Enclosures, Flues, Heating and Cooling Equipment, Eaves, Cornices, Canopies, Awnings) may project two feet into the required setbacks, so long as there remains at least a two-foot setback from property lines. Bay windows and balconies may not project into a setback.

23.306.050 - Deed Restrictions.

A. The property owner shall file a deed restriction with the Alameda County Recorder which states:

1. The JADU shall not be sold separately from the Main Building;

2. The ADU shall not be sold separately from the Main Building unless the conditions of BMC 23.306.050 B are met;
3. The ADU and/or JADU shall not be rented for a term that is shorter than 30 days; and
4. If the property includes a JADU, the JADU, or the Single Family Dwelling in which the JADU is located, shall be owner-occupied.

B. ADUs Developed by a Qualified Nonprofit Developer. An ADU built or developed by a “qualified nonprofit corporation” may be sold or conveyed separately from the Main Building to a “qualified buyer,” as such terms are defined in subdivision (b) of Section 65852.26 of the California Government Code. The ADU must be held pursuant to a recorded tenancy in common agreement recorded on or after December 31, 2021 that includes the following elements:

1. Delineation of all areas of the property that are for the exclusive use of a cotenant;
2. Delineation of each cotenant’s responsibility for the costs of taxes, insurance, utilities, general maintenance and repair, and improvements associated with the property;
3. Procedures for dispute resolution among cotenants before resorting to legal action;
4. Allocates to each qualified buyer an undivided, unequal interest in the property based on the size of the dwelling each qualified buyer occupies;
5. A repurchase option that requires the qualified buyer to first offer the qualified nonprofit corporation to buy the ADU or primary dwelling if the buyer desires to sell or convey the property;
6. A requirement that the qualified buyer occupy the ADU or primary dwelling as the buyer’s principal residence; and
7. Affordability restrictions on the sale and conveyance of the ADU or primary dwelling that ensure the ADU and primary dwelling will be preserved for low-income housing for 45 years for owner-occupied housing units and will be sold or resold to a qualified buyer.
8. If requested by a utility providing service to the primary residence, the ADU shall have a separate water, sewer, or electrical connection to that utility.

23.306.060 – Neighbor Noticing.

A. Scope and Timing of Notice. Notice of an ADU application shall be mailed to owners and tenants of the subject, adjacent, confronting and abutting properties within ten working days of submission to the Planning Department.

B. Content of Notice. Notice shall provide the address of the project, allowable hours of construction, and a link to the City’s ADU webpage and information for tenants of the subject property on how to contact a Rent Board Housing Counselor by e-mail or phone and any other resource information deemed relevant.

C. Mailing Fees. The applicant shall be responsible for the cost of materials, postage and staff time necessary to process and mail notices.

Section 2. That the definition of Accessory Dwelling Unit in Berkeley Municipal Code Chapter 23.502.020.A.4 is amended to read as follows:

23.502.020.A.4

Accessory Dwelling Unit. A secondary dwelling unit that is located on a lot in a zoning district where residential uses are permitted with a proposed or existing Single Family Dwelling, Duplex, Multi-Family Dwelling Use or Group Living Accommodation. An Accessory Dwelling Unit must comply with local building, housing, safety and other code requirements, except as expressly modified in Chapter 23.306, and provide the following features independent of other dwelling units on the lot: 1) exterior or independent access to the Accessory Dwelling Unit; 2) living and sleeping quarters; 3) a full kitchen; and 4) a full bathroom. An Accessory Dwelling Unit also includes the following:

- a. An efficiency unit, as defined in Section 17958.1 of the Health and Safety Code.
- b. A manufactured home, as defined in Section 18007 of the Health and Safety Code.

Section 3. That the definition of Primary Dwelling Unit in Berkeley Municipal Code Chapter 23.502.020.P.16 is rescinded.

23.502.020.P.16

Section 4. That the definition of Efficiency Kitchen is adopted in Berkeley Municipal Code Chapter 23.502.020.E.1 as follows:

23.502.020.E.1

Efficiency Kitchen: A kitchen that includes a sink, a cooking facility with appliances (e.g. microwave, toaster, oven, hot plate), and food preparation counter space and cabinets.

Section 5. That the definition of Junior Accessory Dwelling Unit (JADU) is adopted in Berkeley Municipal Code Chapter 23.502.020.J.1 as follows:

23.502.020.J.1

Junior Accessory Dwelling Unit (JADU): A unit that is contained entirely within the walls of a Single Family Dwelling. A JADU must include a separate exterior entrance and an Efficiency Kitchen with a working refrigerator. A JADU may include separate sanitation facilities or may share sanitary facilities with a Single Family Dwelling. The property-owner must reside in either the Single Family Dwelling or the JADU.

Section 6. 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.

At a regular meeting of the Council of the City of Berkeley held on January 18, 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.

ORDINANCE NO.7,799-N.S.

AMENDMENTS TO THE ACCESSORY DWELLING UNIT (ADU) ORDINANCE (BMC 23.306) AND ADOPTION OF A WILDFIRE HAZARD EVACUATION RISK MITIGATION ORDINANCE (BMC 12.99)

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

Section 1. Berkeley Municipal Code Chapter 23.306 is amended to read as follows

23.306 Accessory Dwelling Units

Sections:

- 23.306.010 Purposes.
- 23.306.020 Applicability and Definitions.
- 23.306.030 Permit Procedures.
- 23.306.040 Development Standards.
- 23.306.050 Deed Restrictions.
- 23.306.060 Neighborhood Noticing.
- 23.306.070 Rooftop Decks and Balconies.

23.306.010 Purposes.

The purposes of this Chapter are to:

- A. Implement California Government Code Section 65852.2 and 65852.22.
- B. Increase overall supply and range of housing options in Berkeley.
- C. Expedite small-scale infill development.
- D. Support Housing Element goals of facilitating construction of accessory dwelling units and increasing the number of housing units that are more affordable to Berkeley residents.
- E. Encourage development of accessory dwelling units in zoning districts with compatible land uses and infrastructure.
- F. Reduce potential impacts of new development in Very-High Fire Hazard Severity Zones and Wildland-Urban Interface Fire Areas as designated in the BMC Chapter 19.48 and as may be amended from time to time, and the Hillside Overlay District (HOD) due to unique conditions and hazards within these areas that require additional restrictions on ADUs and JADUs because of impacts of traffic flow and public safety consistent with Government Code 65852.2, subdivision (a)(1)(A), which allows local agencies to regulate ADUs based on "adequacy of water and sewer service, and the impacts of traffic flow and public safety."

23.306.020 Applicability and Definitions.

- A. The provisions of this chapter apply to zoning districts where residential uses are permitted, on lots that have at least one existing or proposed Dwelling Unit or Group Living Accommodation that is not a Fraternity House, Sorority House or Dormitory.
- B. For purposes of this Chapter the Hillside Overlay District (HOD) includes all lots within Berkeley's designated Very-High Fire Hazard Severity Zones and Wildland-Urban Interface Fire Areas that are zoned R-1H (Single-Family Residential—Hillside Overlay), R-2H (Restricted Two-Family Residential—Hillside Overlay), R-2AH (Restricted Multiple-Family Residential—Hillside Overlay), or ES-R (Environmental Safety-Residential).
- C. **Number of ADUs and JADUs Permitted Per Lot.** Except as expressly modified by Chapter 12.99, the following number of ADUs and JADUs shall be the maximum number of accessory units permitted on lots subject to this Chapter.
 - 1. Lot with one Single Family Dwelling: One ADU and/or one JADU.
 - 2. Lot with more than one Single Family Dwelling: One ADU.
 - 3. Lot with a Duplex or Multiple-Family Dwelling, either:
 - a. Up to two detached ADUs; or
 - b. At least one ADU converted from non-habitable portions of the existing Main Building that are not within the living space of a Dwelling Unit (e.g. basement, attic, garages storage room). The maximum number of ADUs converted from portions of the existing Main Building that are not within the living space of a Dwelling Unit shall not exceed 25% of the total number of existing Dwelling Units on the lot.
 - 4. Lot with a Group Living Accommodation that is not a Fraternity House, Sorority House or Dormitory: One ADU.

23.102.010 – Permit Procedures.

- A. Zoning Certificate. An application for an ADU or JADU shall be allowed with a Zoning Certificate. Review must be completed within 60 days of submission of a completed application. A completed application must include evidence of compliance with this Chapter, including Development Standards, Deed Restrictions, and Neighborhood Noticing.
 - 1. If an application to create an ADU or JADU is submitted as part of a project that requires discretionary review, a Zoning Certificate for a Building Permit

shall not be issued for the ADU or JADU until the discretionary approval(s) has/have been granted and any applicable appeal periods have expired.

2. Issuance of a Zoning Certificate shall not be denied for the construction or conversion of an ADU or JADU that complies with the requirements of Government Code Section 65852.2(e)(1).
3. Issuance of a Zoning Certificate for the construction or conversion of an ADU or JADU shall not be denied based on the failure of an applicant to correct a nonconforming zoning condition.

23.306.040 Development Standards.

A. **Basic Standards.** See Table 23.306-1: ADU and JADU Development Standards.

TABLE 23.306-1 ADU AND JADU DEVELOPMENT STANDARDS

	ADU ¹	JADU
Maximum Size Outside of HOD ²		500 sf
Studio or 1 bedroom	850 sf	N/A
2 + bedrooms	1000 sf	
Maximum Size Within HOD	800 sf	500 sf
Maximum Height Outside of HOD	20 ft.	N/A
Maximum Height Within HOD	16 ft.	
Front Yard Setback	Same as underlying district	
Rear Setback	4 ft ³	
Side Setback	4 ft ³	
Required Off-Street Parking Outside of HOD	None ⁴	
Required Off-Street Parking Within HOD	The lesser of 1 space per bedroom or ADU ^{6,7}	None ⁶
<p>[1] An ADU converted from an Accessory Building or Accessory Structure legally established at least three years prior to submission of an ADU application that does not comply with the Maximum Height, Size, and/or Rear and Side Setback requirements is allowed to maintain non-conformity to the same dimensions of the existing Accessory Building or Accessory Structure, provided that the existing side and rear setbacks are sufficient for fire and safety as set forth in California Building Standards Code adopted in BMC Title 19. Any physical additions to the existing Accessory Building or Accessory Structure shall comply with the development standards in this table.</p> <p>[2] An ADU created entirely through conversion with no modifications to the existing building envelope that exceeds the development standards for Maximum Size in this table is allowed a physical addition of no more than 150 square feet. The addition must comply with Maximum Height and Setback requirements in this table.</p>		

[3] If there is a lesser setback allowed for a comparable Accessory Building or Accessory Structure in the underlying zoning district, that setback shall apply.

[4] Replacement parking is not required. Replacement of off-street parking for the Main Building is allowed and does not need to comply with Parking Maximums (BMC 23.322.070) nor Parking Layout and Design (BMC 23.322.080).

[5] No off-street parking shall be required for ADUs that satisfy the criteria defined in subdivision (d) of California Government Code section 65852.2 or any successor provision thereto.

[6] If an applicant provides off-street parking for an ADU or a JADU in the HOD, parking shall be allowed in any configuration on the lot, including within the front yard setback.

B. Projections.

1. Except as limited by Paragraph B.2 of this Section, architectural features (Chimneys, Water Heater Enclosures, Flues, Heating and Cooling Equipment, Eaves, Cornices, Canopies, Awnings) may project two feet into the required setbacks, so long as there remains at least a two-foot setback from property lines. Bay windows may not project into a setback. Bay windows shall not project into a setback.
2. No projections shall be allowed within the required setbacks on lots that are within the Hillside Overlay District.

23.306.050 - Deed Restrictions.

A. The property owner shall file a deed restriction with the Alameda County Recorder which states:

1. The JADU shall not be sold separately from the Main Building;
2. The ADU shall not be sold separately from the Main Building unless the conditions of BMC 23.306.050 B are met;
3. The ADU and/or JADU shall not be rented for a term that is shorter than 30 days; and
4. If the property includes a JADU, the JADU, or the Single Family Dwelling in which the JADU is located, shall be owner-occupied.

B. ADUs Developed by a Qualified Nonprofit Developer. An ADU built or developed by a “qualified nonprofit corporation” may be sold or conveyed separately from the Main Building to a “qualified buyer,” as such terms are defined in subdivision (b) of Section 65852.26 of the California Government Code. The ADU must be held pursuant to a recorded tenancy in common agreement recorded on or after December 31, 2021 that includes the following elements:

1. Delineation of all areas of the property that are for the exclusive use of a cotenant;
2. Delineation of each cotenant's responsibility for the costs of taxes, insurance, utilities, general maintenance and repair, and improvements associated with the property;
3. Procedures for dispute resolution among cotenants before resorting to legal action;
4. Allocates to each qualified buyer an undivided, unequal interest in the property based on the size of the dwelling each qualified buyer occupies;
5. A repurchase option that requires the qualified buyer to first offer the qualified nonprofit corporation to buy the ADU or primary dwelling if the buyer desires to sell or convey the property;
6. A requirement that the qualified buyer occupy the ADU or primary dwelling as the buyer's principal residence; and
7. Affordability restrictions on the sale and conveyance of the ADU or primary dwelling that ensure the ADU and primary dwelling will be preserved for low-income housing for 45 years for owner-occupied housing units and will be sold or resold to a qualified buyer.
8. If requested by a utility providing service to the primary residence, the ADU shall have a separate water, sewer, or electrical connection to that utility.

23.306.060 – Neighbor Noticing.

A. Scope and Timing of Notice. Notice of an ADU application shall be mailed to owners and tenants of the subject, adjacent, confronting and abutting properties within ten working days of submission to the Planning Department.

B. Content of Notice. Notice shall provide the address of the project, allowable hours of construction, a link to the City's ADU webpage, and information for tenants of the subject property on how to contact a Rent Board Housing Counselor by e-mail or phone and any other resource information deemed relevant.

C. Mailing Fees. The applicant shall be responsible for the cost of materials, postage and staff time necessary to process and mail notices.

23.306.070 Rooftop Decks and Balconies.

A. Notwithstanding any provisions of this Title to the contrary, roofs on lots within the Hillside Overlay District may not be designed, converted or used as Usable Open Space.

Section 2. Berkeley Municipal Code Chapter 12.99 is adopted to read as follows:

12.99 Wildfire Hazard Evacuation Risk Mitigation Ordinance

Sections

- 12.99.010 Title and Purposes
- 12.99.020 Applicability
- 12.99.030 Total Number of Units Permitted

12.99.010 Title and Purposes

- A. This Chapter may be referred to as the “Wildfire Hazard Evacuation Risk Mitigation Ordinance.”
- B. The purposes of this chapter are to permit and promote the construction of accessory dwelling units and junior accessory dwelling units while protecting human life and health, promoting the public health, safety, and general welfare, and minimizing public and private losses due to dangerous conditions in specific areas.
- C. Government Code 65852.2, subdivision (a)(1)(A) allows local agencies to regulate ADUs based on "adequacy of water and sewer service, and the impacts of traffic flow and public safety."
- D. The Hillside Overlay District, as defined in BMC 23.306.020B, has unique conditions and hazards that require additional restrictions on ADUs and JADUs because of impacts of traffic flow and public safety:
 - 1. Wildfires, earthquakes and landslides put residents of the Hillside Overlay District at significant risk.
 - 2. The Hayward fault bisects the Hillside Overlay District.
 - 3. Due to the maze of narrow, steep, and winding streets, the Hillside Overlay District has extremely poor emergency access egress and evacuation conditions. Safety is compromised by a substandard street infrastructure that has limited accessibility for emergency responders as well as inadequate capacity for fast and reliable escape. A majority of street widths in the Hillside Overlay District have substandard widths, and difficulty of navigation in most areas is exacerbated by one or more conditions including steep slopes, sharp curves and acute-angled corners.
 - 4. A study published by UC Berkeley researchers concluded that in the best-case scenario, if each household evacuated from the Berkeley hills with one vehicle, estimated evacuation time would be two hours and 245 vehicles would be exposed to immediate fire danger. However, if each household evacuated with 1.7 vehicles, evacuation time would increase to three hours and 782 vehicles

would be exposed to immediate fire danger. Doubling the number of households in these areas through the addition of just one ADU or JADU, assuming only one evacuation vehicle per household, would likely produce similar outcomes to the 1.7 vehicle-per-household evacuation scenario, likely with a larger total number of residents at risk.

5. Berkeley's Hillside Overlay District is comprised of the most difficult-to-access and evacuate areas in Berkeley's Very-High Fire Hazard Severity Zones and Wildland-Urban Interface Fire Areas. In addition, the Hayward Fault traverses the full length of these zones, with violent (Level 9 of 10) shaking predicted in the US Geologic Services Hayward Fault earthquake scenario (HayWired). Scientists at UC Berkeley's Seismology Lab have determined that the Hayward Fault is probably California's most dangerous, with a 31.7% chance of a 6.7 magnitude or greater earthquake in the next 26 years.
6. The City's Hazard Mitigation Plan, adopted December 10, 2019, identifies Earthquake and Wildland-Urban Interface Fire as "Likely" and "Catastrophic" events. Increasing density and intensity by permitting both one ADU and one JADU (2 total) in addition to the primary home, on every parcel in the Hillside Overlay District, representing a 200% increase in units allowed on most parcels, will seriously exacerbate the very extremely hazardous conditions that currently exist with respect to traffic flow and public safety in the likely event of a catastrophic wildfire or earthquake, necessitating reasonable limitations that reduce exposure to hazardous conditions

12.99.020 Applicability

- A. Lots within the Hillside Overlay District (HOD), as defined in BMC 23.306.020 B, shall be subject to the provisions of this Chapter.

12.99.030 Total Number of Units Permitted

- A. Notwithstanding any provisions of Chapter 23.306 to the contrary, no more than one ADU or JADU shall be permitted per lot that is subject to this Chapter.

Section 3. Severability. If any provision or clause of this Ordinance or the application thereof to any person or circumstance is held to be unconstitutional or to be otherwise invalid by any court of competent jurisdiction, such invalidity shall not affect other provisions or clauses, and to this end the provisions and applications of this Ordinance are severable.

Section 4. 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.

At a regular meeting of the Council of the City of Berkeley held on January 25, 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.

ORDINANCE NO. 7,798-N.S.

LEASE AGREEMENT WITH BAY AREA RAPID TRANSIT (BART) FOR BIKE STATION RETAIL SPACE AT 2023 CENTER STREET

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

Section 1. The City Manager, or designee, is hereby authorized to execute a lease agreement with BART to use City property at 2023 Center Street for a 15-year lease term, commencing February 1, 2021, and expiring January 31, 2036, with an option to extend for one additional five-year term. The lease shall be substantially in the form attached hereto as Exhibit "A".

Section 2. All revenue from said lease shall be deposited in the Off-Street Parking Fund 627 in a specific revenue account to be established for leases at the Center Street Garage location.

Section 3. Copies of this bill shall be posted for two days prior to adoption in the display case located near the walkway in front of Old City Hall, 2134 Martin Luther King Jr. Way. Within fifteen calendar 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 January 25, 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.



Office of the City Attorney

CONSENT CALENDAR
February 8, 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, and December 14, 2021.

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, and December 14, 2021. If reviewed and ratified on February 8, 2022, the Council will need to again review and ratify the proclamation by April 9, 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, and December 14, 2021.

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; 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, and December 14, 2021, 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 Attorney

CONSENT CALENDAR
February 8, 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, and January 10, 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 February 8, 2022, the Council will need to review and ratify the resolution by March 10, 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.

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 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.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Not applicable.

RATIONALE FOR RECOMMENDATION

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.

ALTERNATIVE ACTIONS CONSIDERED

None.

CONTACT PERSON

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, and January 10, 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 March 10, 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.



Office of the City Manager

07

CONSENT CALENDAR
February 8, 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 February 8, 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 **\$4,468,611**.

<u>PROJECT</u>	<u>Fund</u>	<u>Source</u>	<u>Amount</u>
Resident Camp Food Services	125	Playground Camp	\$4,468,611
Total:			\$4,468,611

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.

Formal Bid Solicitations and Request for Proposals
Scheduled for Possible Issuance After Council
Approval on February 8, 2022

CONSENT CALENDAR
February 8, 2022

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 February 8, 2022

- a) Resident Camps Food Services

Note: Original of this attachment with live signature of authorizing personnel is on file in General Services.

DATE SUBMITTED: February 8, 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
22-11492-C	Resident Camps Food Service	2/9/2022	2/23/2022	Food Service Items for Berkeley Echo Lake Camp and Berkeley Tuolumne Camp, including food, food service supplies & food service equipment.	<p>Combined Total for both Camps: \$4,468,611</p> <p>Echo Lake Camp: FY 22: \$68,111.64 FY23: \$208,782.83 FY24: \$216,090.23 FY25: \$223,653.39 FY26: \$231,481.26 FY27: \$158,687.83</p> <p>Echo Subtotal: \$1,106,807.18</p> <p>Tuolumne Camp: FY22: \$142,503.52 FY23: \$518,721.49 FY24: \$703,168.77 FY25: \$727,779.68 FY26: \$753,251.96 FY27: \$516,378.40</p> <p>Tuolumne Subtotal: \$3,361,803.82</p>	<p>Echo Budget Code: 125-52-543-582-0000-000-461-644110-</p> <p>Tuolumne Budget Code: 125-52-543-583-0000-000-461-644110-</p>	PRW/ Recreation	Denise Brown 981-6707
Dept TOTAL					\$4,468,611			
DEPT. TOTAL					\$4,468,611			



Office of the City Manager

CONSENT CALENDAR
February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Dee Williams-Ridley, City Manager
 Submitted by: Abraham Roman, Fire Chief
 Subject: Contract - O2X for Public Safety Wellness Programming

RECOMMENDATION

Adopt a Resolution authorizing the City Manager to execute a contract and any amendments with O2X 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.

FISCAL IMPACTS OF RECOMMENDATION

The base term of this contract is from February 9, 2022 to February 8, 2026 in the amount of \$2,712,145. There is an option to extend for three additional two (2) year terms for a total term of ten (10) years with cost escalations of 2.5% annually. Funding for the employee wellness program is already budgeted annually in the Fire Department budget: 147-72-742-835-0000-000-422-612410

CURRENT SITUATION AND ITS EFFECTS

The Departments currently have internal wellness programs that are provided by firefighters and police officers that endeavor to conduct employee wellness activities during work and non-work hours. While an essential component of a wellness program, peer-based programs do not provide adequate resources for the magnitude of the challenge that exists within the first responder community.

BACKGROUND

First responders higher rates of chronic medical and psychological injury and illness than the general population. These issues are often 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 public safety work. Establishing and maintaining a complete annual physical and wellness program is critical in reducing lost time, mental illness, substance abuse and prevention 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 to early detection and better health outcomes. 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.

Wellness programs have reduced healthcare and workers compensation costs associated with injuries and illness. Additionally, responders that are healthy (medically and psychiatrically) are more resilient, make better decisions and are more likely to be at work. The Contractor will provide services that include but are not limited to, one-on-one consultations, managing wellness/fitness initiatives, coordinating awareness and motivational campaigns, mental and health related training, long-term data collection and analysis, and educational seminars. All of these services increase job performance, support healthy lifestyles and increase the resilience of our emergency responders.

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 City conducted a competitive bid process and 02X Human Performance LLC successfully met the bid requirements and ranked highest among all bidders. The pricing is deemed to be fair and reasonable.

The contract with 02X Human Performance LLC will benefit the City by affording a long-term relationship with a vendor that is committed to providing high quality physical and mental wellness programming that has been proven to prevent acute and chronic conditions that may otherwise go unidentified by internal peer-based programs or vendors that have less specialized experience with fire, police and emergency services personnel. 02X Human Performance LLC provides wellness services to a wide variety of emergency services providers across the United States. 02X Human Performance LLC will also be providing all of these services within the City of Berkeley so responders will not have to leave the City.

ALTERNATIVE ACTIONS CONSIDERED

None.

CONTACT PERSONS

Abraham Roman, Interim Fire Chief, (510) 981-3473

Attachments:

1. Resolution
2. Community Oriented Policing Services, U. D. (n.d.). Building and Sustaining an Officer Wellness Program.
3. 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*.
4. Lynn Hancock, M. (2017). *Law Enforcement Fitness Policies in Relation to Job*. Walden Dissertations and Doctoral Studies.
5. Nord, e. a. (2011). Accuracy of peak VO2 assessments in career. *Journal of Occupational Medicine and Toxicology*.
6. Pinnacle. (2018). Evidence that Wellness Programs Reduce Worker's Compensation Costs for Police Departments.
7. Poplin, e. a. (2013). The Association of Aerobic Fitness With Injuries in the Fire Service. *American Journal of Epidemiology*.
8. Smith, e. a. (2011). Firefighter Fitness: Improving Performance. *Current Sports Medicine Reports*.

9. Smith, e. a. (2016). Cardiovascular Strain of Firefighting and the Risk of. *Exercise and Sport Sciences Reviews*.
10. Sritharan, e. a. (2017). Prostate cancer in firefighting and police. *Environmental Health*.
11. Tsai, e. a. (2016). Risk of Cancer Among Firefighters in California, 1988–2007. *Am J Ind Med*.

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

Contract: 02X Human Performance LLC for physical and mental wellness program for the Berkeley Fire & Police Departments.

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, shift work has been associated with higher rates of certain types of cancer, 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, 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, wellness programs 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 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.

Building and Sustaining an Officer Wellness Program

Lessons from the San Diego Police Department



COPS
Community Oriented Policing Services
U.S. Department of Justice



POLICE EXECUTIVE
RESEARCH FORUM

This project was supported, in whole or in part, by cooperative agreement number 2016-CK-WXK-030 awarded by the U.S. Department of Justice, Office of Community Oriented Policing Services. The opinions contained herein are those of the author(s) or contributor(s) and do not necessarily represent the official position or policies of the U.S. Department of Justice. References to specific individuals, agencies, companies, products, or services should not be considered an endorsement by the author(s) or the U.S. Department of Justice. Rather, the references are illustrations to supplement discussion of the issues.

The Internet references cited in this publication were valid as of the date of publication. Given that URLs and websites are in constant flux, neither the author(s) nor the COPS Office can vouch for their current validity.

Recommended citation:

Police Executive Research Forum. 2018. *Building and Sustaining an Officer Wellness Program: Lessons from the San Diego Police Department*. Washington, DC: Office of Community Oriented Policing Services.

Published 2018

Contents

Letter from the Director of the COPS Office.....	v
Letter from the Executive Director of PERF.....	vii
Acknowledgments.....	ix
Introduction	1
Meeting the challenge	1
Conducting a case study of the SDPD’s wellness program	2
This report: A toolkit for building individualized wellness programs	2
Literature Review: Why Wellness Matters	3
Physical health concerns.....	3
Mental health concerns	4
Impact on officer performance and community relationships.....	6
Barriers to treatment.....	7
Existing wellness services and promising practices	8
Conclusion.....	13
The Wellness Unit: Laying the Groundwork for Successful Wellness Programming in San Diego.....	15
The department’s needs drive the wellness unit’s priorities	15
Mission and goals.....	16
Overview of services	17
Organization.....	19
Physical location: Making the Wellness Unit visible.....	20
Confidentiality.....	21
Recruitment and rotation in the Wellness Unit.....	23
Training for help services providers.....	25
Availability and assignments.....	25
Building awareness of and trust in the Wellness Unit.....	26
Metrics for success	29

Sustainability planning.....	31
Promising practices.....	31
Help Resources: Providers and Programs.....	35
Peer Support Program (PSP).....	35
Police chaplain program	39
Focus Psychological Services.....	41
Alcohol/Substance Abuse Program (ASAP).....	43
Promising practices.....	44
Training: Building a Culture of Wellness.....	47
Reaching new officers.....	47
Engaging with senior staff members	47
Responding to emerging issues	48
Emotional Survival Training (four-hour training delivered in the academy).....	48
Psychological Preparedness Training for New Officers (one full day immediately after graduation from the academy).....	49
Effective Interactions training (two full days after field training)	50
Advanced Officer Training (AOT)	53
Educational programming tailored to emerging issues.....	54
Promising practices.....	55
Conclusion.....	57
Summary of Promising Practices	59
Appendix A. 2011 Needs Assessment Survey.....	65
Survey letter.....	65
Survey questions.....	66
Appendix B. Wellness Unit Confidentiality Policy.....	69
Appendix C. Wellness Unit Employee Resources Brochure.....	70
Appendix D. <i>Wellness News</i> Newsletter	73
Appendix E. Sample Recap Sheet.....	87

Appendix F. 2013 Wellness Survey 89
 Wellness Unit Services Survey 89

Appendix G. “Wellness Day” Agenda..... 92

Appendix H. Effective Interactions Scenarios 94
 Scenario 1. Large party 94
 Scenario 2. 7-11 parking 94
 Scenario 3. Disturbance and authority 94
 Scenario 4. Jogger matches the description 95
 Scenario 5. Traffic stop 95

Bibliography 97

About PERF..... 105

About the COPS Office 107

Letter from the Director of the COPS Office

Colleagues:

The men and women who make up our police departments and sheriffs' offices face situations every day that endanger their health and safety and even their lives. The dangers are often mental and emotional as well as physical—and seeking help for that type of illness or injury can be harder than getting treatment for something more observable like a wound that needs stitching up or a broken bone. But officers' and deputies' mental state is just as important as their physical condition, and they need to be well and healthy in both areas to be able to carry out their law enforcement responsibilities.

Agencies around the country are recognizing the importance of monitoring and tending to employees' health and wellness, and this publication discusses the establishment and operation of a dedicated unit at the San Diego Police Department (SDPD) with the goal of promoting a department-wide culture of wellness, providing support and services when they are needed, and keeping the department healthy. More broadly, working toward these goals will also help the department better serve its community.

In addition to an in-depth examination of the SDPD's Wellness Unit, this publication includes a literature review on officer safety and wellness and law enforcement agencies' organizational health. The lessons learned, resources identified, and training and recommendations developed by the Police Executive Research Forum in their observation of the SDPD, will help guide other local agencies that may be interested in setting up similar programs.

Sincerely,

A handwritten signature in black ink that reads "Phil Keith". The signature is written in a cursive style with a long, sweeping tail on the letter "K".

Phil Keith
Director
Office of Community Oriented Policing Services

Letter from the Executive Director of PERF

Dear colleagues,

Policing is a rewarding career, but these rewards can come at a high cost to our nation's officers. When they put on their uniforms, they commit to taking on the physical, mental, and emotional challenges that each shift presents.

Over time, the stressful nature of police work can take a toll on an officer's well-being. Though this stress may strain officer's physical and mental health, many officers are reluctant to come forward and ask for help. Seeking assistance may carry a stigma, and officers may even be concerned that their careers may be derailed if they seek assistance.

The implications of ignoring these issues are well known. Research indicates that when officers' physical and mental health issues go unmanaged, job performance decreases,¹ decision-making abilities are impaired, and agency costs increase.² Everyone has a stake in promoting police officers' wellness, because it has a direct impact on officers' abilities to effectively serve their communities.

In recognition of the critical role that officer wellness plays in police work, law enforcement agencies across the country have created programs aimed at preserving and promoting officers' physical and emotional health.³ These initiatives have been broadly referred to as officer safety and wellness programs. Many programs have been expanded to include civilian employees as well as sworn officers.

In April and August 2017, Police Executive Research Forum (PERF) staff members conducted site visits to the San Diego (California) Police Department (SDPD) to observe its officer wellness program, which is considered one of the top programs in the country.⁴ During the two site visits, PERF staff members interviewed key stakeholders from all of the SDPD's wellness program components. This included Wellness Unit staff (past and present), "help services" providers (police chaplains and members of the counseling team), command staff, peer support members, and members of the department who have used wellness services. PERF also attended wellness-related trainings offered to department members. Through these observations and discussions, PERF identified promising practices, lessons learned, and model policies for other agencies to consider when implementing their own wellness initiatives.

¹ Fox et al., "Mental-Health Conditions."

² Andersen et al., "Mental Preparedness."

³ Kuhns, Maguire, and Leach, *Health, Safety, and Wellness Program Case Studies*.

⁴ Destination Zero, "2016 Officer Wellness Winner: San Diego (CA) Police Department."

While there are clear benefits to creating comprehensive officer safety and wellness initiatives, many departments remain unsure of where to start. This publication outlines a set of policy and programmatic recommendations based on lessons from the SDPD's wellness initiatives. The purpose of this report is to provide guidance to agencies across the country that are looking to implement wellness programs or to improve upon existing initiatives.

We are incredibly grateful to the COPS Office for their support of this project and its continued leadership on officer safety and wellness issues. This includes its stewardship of the National Officer Safety and Wellness (OSW) Group, which it co-created with the Bureau of Justice Assistance in 2011. The COPS Office creates critical opportunities for law enforcement agencies and researchers to engage with each other on officer safety and wellness issues and provides needed resources and information on promising practices to law enforcement organizations across the country.⁵ Most recently, the COPS Office published *Improving Law Enforcement Resilience: Lessons and Recommendations*,⁶ which discusses the unique stressors that officers face and strategies for building their resilience.

Preserving officers' physical and mental health plays an integral role in keeping our police and communities safe. Together, we must commit to embedding wellness into the culture of our nation's police agencies.



Chuck Wexler
Executive Director

⁵ COPS Office, "National Officer Safety and Wellness Group."

⁶ Spence, *Improving Law Enforcement Resilience*.

Acknowledgments

The Police Executive Research Forum (PERF) would like to thank the COPS Office for supporting this examination of the San Diego (California) Police Department's (SDPD) wellness unit development and operations. The COPS Office deserves credit for recognizing the importance of officer safety and wellness programs in law enforcement agencies; in particular, program manager Nazmia Comrie, provided encouragement and guidance throughout the project.

We are also grateful to San Diego Police Chief Shelly Zimmerman for providing access to the SDPD during our April and August 2017 site visits. Special thanks go to Assistant Chief Sandra Albrektsen and retired Assistant Chief Sarah Creighton, who provided important insights into creating and sustaining a wellness program from a command perspective. We are also thankful for the efforts of Sergeant Ed Zwibel and Sergeant Carmelin Rivera, who connected us with many people involved in the SDPD's wellness initiatives to ensure that we had a well-rounded view of the program. We also thank Ms. Deanna Dotta and Officer Marnie Minton, who have served full-time in the Wellness Unit and who shared their thoughts and experiences with us. All of the practitioners we interviewed for this project were generous with their time and expertise. Their insights shaped our understanding of the wellness-related issues that many law enforcement agencies are facing as well as the promising practices that are captured in this report.

Finally, credit is due to PERF staff members who conducted the site visits, interviewed practitioners, and helped write and edit this publication, including Director of Technical Assistance Jessica Toliver, Senior Research Associate Elizabeth Miller, Senior Research Assistants Madeline Sloan and Adam Kemerer, and Director of Communications Craig Fischer.

Introduction

In 2011, the San Diego Police Department (SDPD) faced a crisis unlike any other in the agency's history.

Between February and August, 10 SDPD officers were investigated for offenses ranging from rape and sexual battery to driving under the influence. Six of the 10 officers were arrested.⁷

As incidents of criminal misconduct mounted, a number of tragic incidents also occurred. On July 18, an SDPD detective and her daughter were killed by the detective's son. In the weeks that followed, the SDPD lost four more of its own, including Officer Jeremy Henwood, who was shot in his patrol car while stopped at an intersection.

The combination of seeing the reputation of the agency and its officers jeopardized by the actions of a few and the traumatic loss of so many of their colleagues in such a short time placed a tremendous amount of stress on the department. In response, the SDPD took action to provide comprehensive support to department members. The Wellness Unit, created in July 2011, was one of the programs that resulted from those efforts. Staffed full time by members of the department, its sole purpose is to provide for the wellness needs of SDPD personnel.

Meeting the challenge

Wellness became a key part of the SDPD's strategy after the department discovered that the officers under investigation had experienced major challenges that had gone unaddressed.⁸ They included substance abuse, divorce, and financial strain.⁹ The urgent need for a more comprehensive approach to wellness was underscored by the series of officer deaths that began in July 2011 and its impact on members of the department.

While the department had long offered wellness-related programs such as peer support, psychologists, police chaplains, and stress management training, these services were decentralized. There were no members of the SDPD whose full-time job was attending to the wellness of the SDPD's officers and staff.

This all changed with the Wellness Unit. Its members serve as a resource by coordinating the delivery of help services and developing wellness programming to respond to department members' needs. This is all in service of the Wellness Unit's larger goal: to create and sustain a robust culture of wellness that prioritizes the physical and emotional health of the SDPD's members. Today, the SDPD's wellness initiative is considered one of the best in the country,¹⁰ and its programs are regarded as models for other agencies.

⁷ PERF, *Police Accountability*.

⁸ San Diego Police Department, *Changing Organizational Culture*.

⁹ San Diego Police Department, *Changing Organizational Culture*.

¹⁰ Destination Zero, "2016 Officer Wellness Winner: San Diego (CA) Police Department."

Conducting a case study of the SDPD's wellness program

In 2016, the Police Executive Research Forum (PERF) entered into a cooperative agreement with the U.S. Department of Justice's Office of Community Oriented Policing Services (COPS Office) to conduct a case study of the SDPD's officer wellness program. This case study, detailed in this report, included the following research tasks:

- A review of existing literature on the relationship between officer wellness and officer performance and health
- A review of the SDPD's wellness-related materials (such as brochures, newsletters, and survey results) and operations manual
- Two multiday site visits (detailed in the following sections)

During the site visits, PERF's project team observed three trainings: (1) the Wellness module of Advanced Officer Training, (2) Emotional Survival II Training, and (3) Effective Interactions Training. PERF also interviewed many stakeholders, including current and former Wellness Unit staff members, psychology professionals who work with the SDPD, peer support officers, civilian peer supporters, department chaplains, and members of the department who have used help services.

This report: A toolkit for building individualized wellness programs

This publication is the result of that research. It describes the SDPD's program and the department's promising practices and lessons learned. Its purpose is to help other agencies implement their own successful wellness programs by providing promising practices derived from PERF's study of the SDPD's wellness initiatives.

This goal of this publication is not to propose that all agencies—regardless of size, location, or budget—replicate the SDPD's wellness program in its totality. Rather, we describe the SDPD's program components and outline the benefits of each, so that agencies can replicate parts of this program or otherwise tailor it to their own needs and resources.

The SDPD's wellness program is built on three pillars:

1. The full-time staff in the Wellness Unit
2. Other help services providers and programs (such as peer supporters, psychological services, and issue-specific programs and partnerships)
3. A multi-level training program

This publication largely mirrors that structure, with a literature review followed by a section on each of the three pillars.

Literature Review: Why Wellness Matters

Policing is a difficult and stressful job, with higher physical and mental health risks than many other professions.¹¹ Studies have shown that when officers' physical and mental health issues go unaddressed, job performance decreases,¹² decision-making abilities are impaired, and agency costs increase.¹³ In other words, everyone should be invested in maintaining police officers' wellness, because it has a direct impact on their ability to be effective. In recognition of the critical role that officer wellness plays in police work, law enforcement agencies across the country have created programs aimed at preserving and promoting officers' physical and emotional health.¹⁴ Early evaluations of wellness programs have produced promising results, including increased participation in exercise,¹⁵ healthier eating habits,¹⁶ and reductions in officer stress.¹⁷

Physical health concerns

Law enforcement officers have a dangerous job. With every shift, officers may encounter a situation that poses a threat to their safety. Many departments have worked to reduce these risks to officers by adopting policies barring unnecessarily dangerous vehicle pursuits or foot pursuits¹⁸ and by teaching officers to de-escalate, slow down, and protect themselves in certain types of potentially dangerous incidents that could end in use of force.¹⁹ Many law enforcement agencies also strive to reduce risks to officers by requiring the use of motor vehicle seat belts²⁰ and effective body armor.²¹

¹¹ Hartley et al., "Health Disparities in Police Officers."

¹² Fox et al., "Mental-Health Conditions;" Rajaratnam et al., "Sleep Disorders, Health, and Safety in Police Officers;" Covey et al., "The Effects of Exposure to Traumatic Stressors;" Vila, Morrison, and Kenney, "Improving Shift Schedule and Work-Hour Policies."

¹³ Andersen et al., "Mental Preparedness;" Fox et al., "Mental-Health Conditions."

¹⁴ Kuhns, Maguire, and Leach, *Health, Safety, and Wellness Program Case Studies*; Church and Robertson, "How State Police Agencies Are Addressing the Issue of Wellness;" Garner, "Police Stress;" Fiedler, *Officer Safety and Wellness*.

¹⁵ Kuhns, Maguire, and Leach, *Health, Safety, and Wellness Program Case Studies*.

¹⁶ Kuehl et al., "The Safety and Health Improvement: Enhancing Law Enforcement Departments Study."

¹⁷ Arnetz et al., "Trauma Resilience Training for Police;" Andersen et al., "Applying Resilience Promotion Training;" Chopko and Schwartz, "The Relation between Mindfulness and Posttraumatic Stress Symptoms;" Christopher et al., "A Pilot Study;" Garner, "Police Stress."

¹⁸ Fiedler, *Officer Safety and Wellness*.

¹⁹ President's Task Force on 21st Century Policing, *Final Report*; PERF, *ICAT*.

²⁰ von Kuenssberg Jehle et al., "Seat Belt Use by Police;" PERF, *Labor and Management*.

²¹ Taylor et al., *A Practitioner's Guide*; PERF, *Labor and Management*.

While certain types of risks to officers can be reduced by such policies, further action is required by department leaders to more broadly support the physical well-being of agency personnel. A large proportion of officer injuries and deaths stem from poor physical health that must be addressed through the creation of additional services and wellness initiatives.²²

Police officers are subject to a wide array of physical health risks, including sleep disorders and associated fatigue,²³ poor nutrition,²⁴ obesity,²⁵ heart disease,²⁶ and poor physical fitness.²⁷ These conditions put officers at an increased risk of heart disease, which accounts for 20 to 50 percent of early retirements.²⁸ In addition, poor physical health may be a direct cause of significantly lower average life expectancy in officers than in the general U.S. population.²⁹

Officers also report sleep disorders at nearly twice the rate of the public,³⁰ which may be caused in part by shift-work scheduling practices.³¹ In a national sample of officers, more than 40 percent screened positive for at least one sleep disorder.³² Sleep disorders are associated with higher rates of other physical and mental health issues, such as diabetes, cardiovascular disease, and depression.³³

Mental health concerns

The stressful nature of police work can negatively impact officers' mental health. Officers endure long-term stress on the job caused by repeated exposure to high-stress incidents.³⁴ These stressors cause police officers to experience anxiety, depression, and post-traumatic stress disorder (PTSD) at disproportionately high rates.³⁵ High stress levels³⁶ and persistent hypervigilance³⁷ are linked to elevated levels of cortisol in the body.³⁸ Researchers estimate that approximately 10 to 17 percent of

²² President's Task Force on 21st Century Policing, *Final Report*.

²³ Violanti, *Shifts, Extended Work Hours, and Fatigue*; Rajaratnam et al., "Sleep Disorders."

²⁴ McCormick, Cohen, and Plecas, *Nutrition and General Duty Police Work*.

²⁵ Kuhns, McGuire, and Leach, *Health, Safety, and Wellness Program Case Studies*.

²⁶ Zimmerman, "Cardiovascular Disease and Risk Factors."

²⁷ Boni, *Exercise and Physical Fitness*; Fiedler, *Officer Safety and Wellness*; Kuhns, Maguire, and Leach, *Health, Safety, and Wellness Program Case Studies*.

²⁸ Zimmerman, "Cardiovascular Disease and Risk Factors."

²⁹ Violanti et al., "Life Expectancy in Police Officers."

³⁰ Charles et al., "Shift Work and Sleep."

³¹ Pearsall, "Sleep Disorders."

³² Rajaratnam et al., "Sleep Disorders."

³³ Rajaratnam et al., "Sleep Disorders."

³⁴ Piazza et al., "Affective Reactivity."

³⁵ Hartley et al., "Health Disparities in Police Officers."

³⁶ Toch, *Stress in Policing*.

³⁷ Gilmartin, *Emotional Survival*; Kimble, Fleming, and Bennion, "Contributors to Hypervigilance."

³⁸ Violanti et al., "Cortisol Patterns."

police officers in the United States demonstrate symptoms of PTSD.³⁹ This disorder may be especially prevalent in officers returning from military service or those who have experienced traumatic job-related incidents.⁴⁰

Although police officers are exposed to many stressors, most identify interpersonal or organizational conflict as the most significant source of stress.⁴¹ Organizational stress can stem from ineffective communication with supervisors,⁴² from poor management practices,⁴³ and from higher workloads due to shrinking public budgets.⁴⁴ Stress induced by organizational factors may be a better predictor of officers' depression, anxiety, and traumatic stress than exposure to critical incidents.⁴⁵ The adverse effects of organizational stress are often magnified in officers who perceive a lack of support from their family members,⁴⁶ and family members themselves may exhibit higher stress levels as a result of negative public attitudes towards police officers or changed behavior of officers in the home.⁴⁷ Depression⁴⁸ and alcohol abuse⁴⁹ are also related to organizational stress among officers. Clinical depression and substance abuse may be the cause or the consequence of work-related stress. Low levels of emotional intelligence, which is associated with increased reactivity to workplace stress,⁵⁰ can also reduce officer perceptions of well-being and job satisfaction.⁵¹

A tragic outcome of the various mental stressors on police officers is officer suicide.⁵² Officer deaths by suicide occur 2.4 times more frequently than deaths by homicide.⁵³ Approximately 25 percent of officers experience suicidal ideations, compared to 13.5 percent of the general population. This imbalance is strongly correlated to the prevalence of PTSD and depression symptoms among police officers.⁵⁴

³⁹ McCaslin et al., "The Impact of Personal Threat;" Carlier, Lamberts, and Gersons,"Risk Factors for Posttraumatic Stress Symptomatology."

⁴⁰ Gershon et al., "Mental, Physical, and Behavioral Outcomes;" Kuhns, Maguire, and Leach, *Health, Safety, and Wellness Program Case Studies*.

⁴¹ Collins and Gibbs, "Stress in Police Officers;" Garner, "Police Stress."

⁴² Andersen et al., "Mental Preparedness."

⁴³ Stinchcomb, "Searching for Stress in All the Wrong Places."

⁴⁴ Fiedler, *Officer Safety and Wellness*.

⁴⁵ Gershon et al., "Mental, Physical, and Behavioral Outcomes."

⁴⁶ Miller, "Stress in Policing."

⁴⁷ Karaffa et al., "Perceived Impact of Police Work on Marital Relationships."

⁴⁸ Amaranto et al. "Police Stress Interventions;" Gershon et al., "Mental, Physical, and Behavioral Outcomes."

⁴⁹ VanMeter, "Leading At-Risk Employees;" McCaslin et al., "The Impact of Personal Threat;" Fox et al., "Mental-Health Conditions."

⁵⁰ Nikolaou and Tsaousis, "Emotional Intelligence in the Workplace."

⁵¹ Brunetto et al., "Emotional Intelligence, Job Satisfaction, Well-Being, and Engagement."

⁵² IACP, *Breaking the Silence*; Violanti et al., "Shift-Work and Suicide Ideation."

⁵³ President's Task Force on 21st Century Policing, *Final Report*.

⁵⁴ Violanti et al., "Shift-Work and Suicide Ideation."

Traumatic experiences and lack of family or departmental support in responding to depression may contribute to high rates of suicide among officers.⁵⁵

Impact on officer performance and community relationships

The negative impact of poor mental health extends far beyond an individual officer. Police departments are also affected, as poor mental health can result in increased agency costs⁵⁶ and impaired decision-making.⁵⁷ High stress levels in officers can lead to absenteeism, increased use of workers' compensation and sick days, and increases in early retirement.⁵⁸ Officers with mental health conditions report lower levels of productivity than their peers. This estimated productivity loss costs agencies \$4,000 per year for each officer affected.⁵⁹

In addition to administrative costs, mental health concerns may also impact officers' communication skills. Officers with mental health conditions experience a lack of cooperation among coworkers⁶⁰ and report greater difficulty than their peers in interacting with community members.⁶¹ Job stress may also impair officers' decision-making abilities, particularly in use of force incidents. Officers with PTSD symptoms experience greater difficulty than officers without such symptoms in distinguishing important and unimportant factors in dangerous situations.⁶² These issues pose serious concerns for officer safety, public safety, and overall agency performance.⁶³

Sleep disorders are also a threat to officers' mental health.⁶⁴ Problems with sleep can contribute to decreased officer performance and poor police-community relations.⁶⁵ Officers suffering from sleep disorders report higher rates than officers with healthy sleep of serious administrative errors, falling asleep while driving, safety violations, and absenteeism.⁶⁶ Sleep-deprived officers have greater difficulty assessing risks⁶⁷ and appropriately judging emotionally charged actions.⁶⁸ Fatigued officers may also be a hindrance to strengthening relationships with community members. Officers with sleep disorders are

⁵⁵ President's Task Force on 21st Century Policing, *Final Report*.

⁵⁶ Fox et al., "Mental-Health Conditions;" Andersen et al., "Mental Preparedness;" Garner, "Police Stress."

⁵⁷ Vila, *Tired Cops*; Rajaratnam et al., "Sleep Disorders;" Covey et al., "The Effects of Exposure to Traumatic Stressors."

⁵⁸ Andersen et al., "Mental Preparedness;" Garner, "Police Stress."

⁵⁹ Fox et al., "Mental-Health Conditions."

⁶⁰ Gershon et al., "Mental, Physical, and Behavioral Outcomes."

⁶¹ Fox et al., "Mental-Health Conditions."

⁶² Covey et al., "The Effects of Exposure to Traumatic Stressors."

⁶³ President's Task Force on 21st Century Policing, *Final Report*.

⁶⁴ Violanti, *Shifts, Extended Work Hours, and Fatigue*.

⁶⁵ Violanti, *Shifts, Extended Work Hours, and Fatigue*; Rajaratnam et al., "Sleep Disorders."

⁶⁶ Rajaratnam et al., "Sleep Disorders."

⁶⁷ Vila et al., "Improving Shift Schedule and Work-Hour Policies."

⁶⁸ Violanti, *Shifts, Extended Work Hours, and Fatigue*.

more apt to display unrestrained anger toward civilians and receive more citizen⁶⁹ complaints than their well-rested counterparts.⁷⁰ When exhausted, officers are unable to effectively communicate with community members and may even incite agitation among them.⁷¹

Barriers to treatment

The nature of police work makes officers susceptible to physical and mental health risks. Despite the prevalence of these concerns, many officers are reluctant to seek help. Among officers experiencing PTSD, depression, and alcohol abuse problems, fewer than half seek mental health services.⁷² Unsupportive agency culture and fear of negative work-related outcomes often deter officers experiencing mental distress from seeking help.⁷³ In many departments, cultural expectations dictate that officers must always appear “brave” or “tough.”⁷⁴ Moreover, officers take pride in the belief that others are depending on them. As a result, many officers make efforts to deny—even to themselves—that they are experiencing difficulties with personal wellness and could benefit from outside assistance.⁷⁵

Officers regularly suppress negative emotions to conform to agency norms.⁷⁶ This behavior can exacerbate depressive symptoms.⁷⁷ Cultural standards among police departments often stigmatize asking for help as a sign of weakness, especially for addiction⁷⁸ or emotional problems.⁷⁹ Fear of becoming the recipient of contempt, distrust, or even ridicule from colleagues upon divulging such problems may prevent officers who acknowledge personal difficulties from seeking assistance,⁸⁰ further contributing to a “tradition of silence”⁸¹ around psychological problems in policing.

⁶⁹ This report occasionally uses the word “citizen” to refer to people in the community who are neither sworn law enforcement officers nor government officials. The term should not be understood to refer only to U.S. citizens.

⁷⁰ Rajaratnam et al., “Sleep Disorders.”

⁷¹ Stephens and Mantel, *OSW Group Meeting Summary*.

⁷² Fox et al., “Mental-Health Conditions.”

⁷³ IACP, *Breaking the Silence*; PERF, *Labor and Management*.

⁷⁴ Stoughton, “What a Police Expert Calls.”

⁷⁵ Stoughton, “What a Police Expert Calls.”

⁷⁶ Amaranto et al., “Police Stress Interventions.”

⁷⁷ DeSteno, Gross, and Kubzansky, “Affective Science and Health.”

⁷⁸ VanMeter, “Leading At-Risk Employees.”

⁷⁹ IACP, *Breaking the Silence*.

⁸⁰ Carlan and Nored, “An Examination of Officer Stress;” Rattue, “Serious Health Risks;” IACP, *Breaking the Silence*; Stoughton, “What a Police Expert Calls.”

⁸¹ President’s Task Force on 21st Century Policing, *Final Report*.

Another reason why officers may be reluctant to seek help from their agencies is that many sources of stress stem directly from supervisors and coworkers.⁸² Lack of cooperation among coworkers correlates significantly with perceived work stress in officers,⁸³ and officers rate criticism from supervisors as one of their most significant sources of stress.⁸⁴ Management insensitivity or indifference has been identified as a major concern by officers who have been assaulted by criminal offenders in the course of their job, leading to distrust of wellness resources provided through agency administration.⁸⁵ Officer concerns with management also extend to physical wellness. Officers report that lack of time and lack of access to exercise equipment are significant obstacles to achieving physical fitness goals.⁸⁶

Cultural and interpersonal factors may also lead officers to fear negative employment outcomes from seeking wellness services, which is one of the most commonly cited barriers to accessing such services.⁸⁷ Officers who admit to suffering from heart disease may not be allowed back on the street if they are determined to be a heart attack risk, and officers receiving mental health counseling can lose access to firearms.⁸⁸ Fear of such outcomes drives perceptions that officers admitting to personal difficulties limit their own opportunities for career advancement.⁸⁹ As a result of these concerns, officers cite confidentiality as a major priority when seeking mental health services,⁹⁰ and service providers have highlighted the need for anonymous services available outside of departments.⁹¹ Law enforcement leaders have recognized the need to ensure that officers receiving wellness services do not experience negative professional impacts.⁹²

Existing wellness services and promising practices

Existing wellness programs in police departments aim to address a number of physical and mental concerns. By 1999, more than half of state law enforcement agencies had wellness-related programming,⁹³ and the proportion of agencies with programming has continued to grow substantially since then. Programs most often focus on cardiovascular fitness, chronic disease prevention, nutrition, stress management, and resilience to trauma.⁹⁴ Many departments currently provide mental health

⁸² Gershon et al., “Mental, Physical, and Behavioral Outcomes;” Garner, “Police Stress.”

⁸³ Gershon et al., “Mental, Physical, and Behavioral Outcomes.”

⁸⁴ Garner, “Police Stress.”

⁸⁵ Crank, *Understanding Police Culture*.

⁸⁶ Kuhns et al., *Health, Safety, and Wellness Program Case Studies*.

⁸⁷ Fox et al., “Mental-Health Conditions.”

⁸⁸ Rattue, “Serious Health Risks.”

⁸⁹ Stoughton, “What a Police Expert Calls;” Crank, *Understanding Police Culture*.

⁹⁰ Fox et al., “Mental-Health Conditions.”

⁹¹ Levenson, O'Hara, and Clark, “The Badge of Life.”

⁹² President’s Task Force on 21st Century Policing, *Final Report*.

⁹³ Church and Robertson, “How State Police Agencies Are Addressing.”

⁹⁴ Kuehl et al., “The Safety and Health Improvement: Enhancing Law Enforcement Departments Study.”

services through employee assistance programs (EAP),⁹⁵ and most large agencies mandate that officers involved in a shooting or critical incident see medical professionals promptly following the incident.⁹⁶ While some departments employ internal mental and behavioral health professionals,⁹⁷ others refer officers to outside providers.⁹⁸

Physical wellness programming

Recognizing the role that shift work can play in sleep disorders and associated physical and psychological ailments,⁹⁹ several departments have partnered with researchers to determine effective scheduling practices as part of a holistic approach to officer wellness.¹⁰⁰ In studies of shift length, researchers have found that compared to a schedule of five eight-hour shifts per week, a schedule of four 10-hour shifts resulted in workers getting significantly more sleep,¹⁰¹ experiencing less fatigue at the beginning of work shifts,¹⁰² and reducing overtime.¹⁰³ In addition, a schedule of four 10-hour shifts is associated with lower fatigue and higher alertness than a schedule of three 12-hour shifts.¹⁰⁴

In light of these demonstrated benefits, researchers have recommended scheduling officers on 10-hour shifts rather than eight- or 12-hour shifts.¹⁰⁵ Researchers also advise that using permanent schedules instead of rotating schedules can improve officers' sleep and psychological well-being while reducing absentee rates.¹⁰⁶

There is also evidence that police department incentives and education programs promoting physical fitness can improve officer health outcomes and reduce costs for agencies.¹⁰⁷ Physical fitness is associated with fewer sick days, lower rates of disability, and fewer injuries within departments,¹⁰⁸ and researchers have noted that even marginal gains in fitness can yield substantial financial benefits because of the high costs of major incidents such as in-service heart attacks.¹⁰⁹

⁹⁵ Fox, et al., "Mental-Health Conditions."

⁹⁶ PERF, *Labor and Management*.

⁹⁷ Council of State Governments Justice Center, *Mental Health Resources for Law Enforcement*.

⁹⁸ Kuhns et al., *Health, Safety, and Wellness Program Case Studies*.

⁹⁹ Charles et al., "Shift Work and Sleep."

¹⁰⁰ Amendola et al., *The Shift Length Experiment*; Vila, *Sleep Deprivation*.

¹⁰¹ Amendola et al., *The Shift Length Experiment*.

¹⁰² Vila, *Sleep Deprivation*.

¹⁰³ Amendola et al., *The Shift Length Experiment*.

¹⁰⁴ Amendola et al., *The Shift Length Experiment*.

¹⁰⁵ Amendola et al., *The Shift Length Experiment*; Vila, *Sleep Deprivation*.

¹⁰⁶ Vila, *Sleep Deprivation*.

¹⁰⁷ Boni, *Exercise and Physical Fitness*; Kuehl et al., "The Safety and Health Improvement: Enhancing Law Enforcement Departments Study;" Fiedler, *Officer Safety and Wellness*.

¹⁰⁸ Fiedler, *Officer Safety and Wellness*.

¹⁰⁹ Kuhns et al., *Health, Safety, and Wellness Program Case Studies*.

In cases where departments have provided resources and incentives for physical fitness, exercise participation among officers increased.¹¹⁰ For example, a Florida department offering on-duty time for personal physical fitness and department-provided exercise equipment observed increased officer performance on yearly fitness evaluations.¹¹¹ Other weight loss incentives have resulted in significant reductions in the degree of officer obesity.¹¹² Following wellness education efforts, departments have also observed improvements in nutritional intake,¹¹³ which is associated with prevention of illness in officers.¹¹⁴ In addition to the physical fitness benefits, one study showed that randomly selected officers participating in regular exercise demonstrated increased rates of job satisfaction and reductions in perceived stress compared to control groups.¹¹⁵

Mental wellness training programs

Several training programs aimed at reducing stress and promoting officer resilience are associated with improved wellness outcome measures.¹¹⁶ Officers who have received criticism management and stress inoculation training¹¹⁷—a training program aimed at building participants’ abilities to effectively handle criticism and, in so doing, reduce the negative impact that interpersonal conflict-related stress has on their health—report less job stress and fewer health complaints than officers in control groups.¹¹⁸ A trauma resilience training program effectively decreased cortisol (high levels of cortisol are an indicator of stress) and self-reported stress among rookie officers. An adjusted version of the program was associated with reductions in physiological stress responses for special weapons and tactics (SWAT) team officers.¹¹⁹ A psychophysiological intervention program, built on the trauma resilience model, improved officers’ use of force decision-making in a “shoot/don’t shoot” exercise, which researchers hypothesize is the result of enhanced physiological control and situational awareness.¹²⁰

¹¹⁰ Boyce et al., “Police Weight-Loss Competition.”

¹¹¹ Kuhns et al., *Health, Safety, and Wellness Program Case Studies*.

¹¹² Boyce et al., “Police Weight-Loss Competition.”

¹¹³ Kuehl et al., “The Safety and Health Improvement: Enhancing Law Enforcement Departments Study;” Kuhns et al., *Health, Safety, and Wellness Program Case Studies*.

¹¹⁴ Martinussen, Richardsen, and Burke, “Job Demands.”

¹¹⁵ Boni, *Exercise and Physical Fitness*.

¹¹⁶ Arnetz et al., “Trauma Resilience Training;” Andersen et al., “Applying Resilience Promotion Training;” Garner, “Police Stress.”

¹¹⁷ Garner, “Police Stress.”

¹¹⁸ Garner, “Police Stress.”

¹¹⁹ Andersen et al., “Mental Preparedness.”

¹²⁰ Andersen et al., “Mental Preparedness.”

Mindfulness skills are also associated with promising wellness outcomes in officers. In one study, a mindfulness-based resilience training (MBRT) program for first responders was linked to better emotional regulation, less fatigue, and reductions in perceived stress among active-duty officer participants.¹²¹ Greater mindfulness skills can also reduce PTSD symptoms such as intrusive memories and hyperarousal in officers.¹²² Practitioners and researchers have begun to develop¹²³ and evaluate¹²⁴ emotional intelligence training opportunities specifically tailored to law enforcement personnel. This training may improve emotional intelligence and employee perceptions of well-being and job satisfaction.¹²⁵

Comprehensive mental wellness programs have also been linked to increased officer participation in mental health services. One multifaceted training program for officers in Newark, New Jersey, featuring lectures on stress management, PTSD, critical incident stress management, and substance abuse was associated with significantly increased use of a department-provided volunteer mental health hotline.¹²⁶ Further, the Montreal (Quebec) Police Department's "Together for Life" program, which trains officers on how to identify and intervene with suicidal officers, was associated with a 79 percent reduction in officer suicide deaths in a 12-year period, even as other departments in the area experienced an 11 percent increase during the same time.¹²⁷

Peer-led models

There are different models for providing various kinds of wellness services to police officers. Officers may place greater trust in peer-led wellness programming than in models led by department service providers.¹²⁸ Peer-led wellness programming can be especially effective as a form of support following critical incidents.¹²⁹ Researchers studying a peer-led health curriculum focusing on mental and physical wellness for officers in Oregon and Washington state found that the program was associated with improvements in officers' dietary habits, increased sleep quantity, and reduced stress in officers.¹³⁰

¹²¹ Christopher et al., "A Pilot Study."

¹²² Chopko and Schwartz, "The Relation between Mindfulness and Posttraumatic Stress Symptoms."

¹²³ Turner, "Understanding the Benefits of Emotional Intelligence."

¹²⁴ Risan, Binder, and Milne, "Emotional Intelligence in Police Interviews."

¹²⁵ Cherniss and Goleman, *The Emotionally Intelligent Workplace*; Groves, McEnrue, and Shen, "Developing and Measuring the Emotional Intelligence of Leaders."

¹²⁶ Amaranto et al., "Police Stress Interventions."

¹²⁷ Mishara and Martin, "Effects of a Comprehensive Police Suicide Prevention Program."

¹²⁸ Stephens and Mantel, *OSW Group Meeting Summary*; Miller, "Stress in Policing."

¹²⁹ Prati and Pietrantonio, "The Relation of Perceived and Received Social Support; Collins and Gibbs, "Stress in Police Officers."

¹³⁰ Kuehl et al., "The Safety and Health Improvement: Enhancing Law Enforcement Departments Study."

Officers participating in critical incident support groups for first responders report fewer depressive symptoms,¹³¹ indicating that perceived support from peers is a critical factor for officer mental wellness following traumatic events.¹³² To address common fears about confidentiality associated with seeking mental health support,¹³³ officers in agencies such as the New York City Police Department have formed private, volunteer peer support groups organized outside of the agency for increased assurance of confidentiality.¹³⁴

Psychological counseling

Research on the effects of psychological counseling for officers has been inconclusive. In other professions, mental health treatment intervention is associated with increased productivity.¹³⁵ Although some evidence suggests that officers participating in psychological counseling over an extended period score higher on overall wellness measures,¹³⁶ a recent meta-analysis of psychological interventions for officers found limited effects of individual counseling on physiological, psychological, and behavioral outcomes.¹³⁷

Researchers have suggested that instituting mandatory counseling for all officers may improve the efficacy of counseling.¹³⁸ Officers often express confidentiality concerns about department-provided mental health services,¹³⁹ yet officers working in departments where counseling is readily available report both significantly less stress and a greater willingness to use counseling.¹⁴⁰ Periodic, mandatory counseling for officers has been proposed as a technique to reduce stress-inducing stigma associated with counseling while connecting officers to resources they may not otherwise seek out.¹⁴¹ Researchers have also suggested that family counseling may improve perceptions of support among officers¹⁴² and reduce secondary traumatic stress in families.¹⁴³ Despite the identified benefits, family counseling is currently used by fewer than eight percent of law enforcement families.¹⁴⁴

¹³¹ Collins and Gibbs, "Stress in Police Officers."

¹³² Prati and Pietrantonio, "The Relation of Perceived and Received Social Support."

¹³³ Crank, *Understanding Police Culture*; Fox et al., "Mental-Health Conditions."

¹³⁴ PERF, *Labor and Management*.

¹³⁵ Hilton et al., "The Association between Mental Disorders and Productivity;" Langlieb and Kahn, "How Much Does Quality Mental Health Care Profit Employers?"

¹³⁶ Tanigoshi, Kontos, and Remley, "The Effectiveness of Individual Wellness Counseling."

¹³⁷ Patterson, Chung, and Swan, "Stress Management Interventions."

¹³⁸ Carlan and Nored, "An Examination of Officer Stress."

¹³⁹ Fox et al., "Mental Health Conditions."

¹⁴⁰ Carlan and Nored, "An Examination of Officer Stress."

¹⁴¹ Carlan and Nored, "An Examination of Officer Stress."

¹⁴² Karaffa et al., "Perceived Impact of Police Work."

¹⁴³ Arredondo et al., *Law Enforcement and Corrections Family Support*.

¹⁴⁴ Karaffa et al., "Perceived Impact of Police Work."

Conclusion

Police officers are vulnerable to many physical and mental health concerns that threaten their well-being. Law enforcement leaders should recognize the need to address these challenges and invest in the health and safety of department personnel. Wellness programs can improve officers' physical and emotional health, yielding positive outcomes for police officers, their agencies, and the communities they serve.

The Wellness Unit: Laying the Groundwork for Successful Wellness Programming in San Diego

I learned that if your organization thinks something is important, it needs to be on the organizational chart and have the highest-ranking person possible in charge of it. It needs to be a visible, dedicated arm of the organization. Otherwise, it'll fall away.

— *Assistant Chief (ret.) Sarah Creighton, San Diego Police Department*

When the SDPD created the Wellness Unit in 2011, then Captain Sarah Creighton¹⁴⁵ was selected to lead it, and she recruited then Sergeant Tod Bassett¹⁴⁶ to join her. While the tragedies of July and August 2011 made clear how much the department needed the Wellness Unit, Creighton and Bassett had to determine exactly what their mission would be and the specific issues they needed to address to achieve that mission.

The department's needs drive the Wellness Unit's priorities

To begin the process of defining their mission, Captain Creighton and Sergeant Bassett developed a survey to identify the concerns of SDPD personnel. In August 2011, they sent a needs assessment survey¹⁴⁷ to the entire department, including civilians, officers, and volunteers.¹⁴⁸

The survey asked department members a wide variety of specific questions such as the extent to which marital issues interfered with their ability to focus on their jobs. It also asked if they were contending with issues such as chronic back pain, sleep disorders, or high blood pressure.

The results were telling. Many of the more than 700 respondents were very concerned about their financial stability, their personal relationships, and their physical health.¹⁴⁹ They were grappling with stress, anger, depression, and “work turn-off.”

¹⁴⁵ Sarah Creighton retired from the department in 2017 as an assistant chief.

¹⁴⁶ Tod Bassett is currently a lieutenant with the SDPD.

¹⁴⁷ See appendix A for the survey.

¹⁴⁸ SDPD, *Changing Organizational Culture*.

¹⁴⁹ As of 2016, SDPD had approximately 2,500 employees (1,800 sworn officers and 700 civilians).

These survey results offered the Wellness Unit a clearer picture of the critical wellness issues facing the department, and the unit used them to craft its mission statement and define its goals.

Mission and goals

It is extremely important to have an open atmosphere where our department personnel can feel comfortable having truly candid conversations. I want to make sure we're a healthy department, because being healthy means we will be that much better equipped to go out into our community and provide excellent service.

— *Chief (ret.) Shelley Zimmerman, San Diego Police Department*

The SDPD ultimately defined the mission of the Wellness Unit as “reducing or removing interferences to employee wellness, whether personally or professionally induced, by providing help resources, training and intervention.”¹⁵⁰ In order to achieve this larger mission, its specific goals are as follows:

- Identifying and enhancing existing wellness resources
- Developing and providing wellness education
- Collaborating with academic institutions on innovative [law enforcement] studies
- Developing partnerships with health and wellness providers
- Staying abreast of wellness program best-practices through research
- Serving as an advocate for employees enduring personal or professional difficulties¹⁵¹

The Wellness Unit also assembled a panel of experts to provide advice and input on programs and policies.¹⁵² Called the Wellness Advisory Committee, it includes physicians, psychologists and mental health experts, academics, employee union representatives, and police chaplains, as well as civilian and sworn members of the SDPD.¹⁵³

¹⁵⁰ SDPD, *Wellness Unit Operations Manual*, 3.

¹⁵¹ SDPD, *Wellness Unit Operations Manual*, 3.

¹⁵² The Wellness Advisory Committee meets on an as-needed basis.

¹⁵³ SDPD, *Wellness Unit Operations Manual*, 5.

Overview of services

To support the Wellness Unit’s mission to support the emotional and physical health of SDPD employees, the Unit offers a range of specific services and activities. They largely fall into three categories:

1. Providing services for individuals
2. Agency-wide activities and services
3. Interagency/interdisciplinary activities and services

These services are available directly to all department members. Employees are not required or expected to notify their supervisors or ask for permission to use wellness services. Department members’ families and loved ones may also use these services, all of which are offered free of charge.

Services for individuals

The Wellness Unit’s first broad category of duties is to provide individualized support for members of the police department. Employees who are in crisis or are experiencing a particular personal or professional issue often approach the Wellness Unit staff directly. Other times, an employee’s colleagues or loved ones ask the Wellness Unit staff to check in on the employee. Wellness Unit members also are proactive about engagement; every day, they review major incidents from the previous day and may contact officers who might need wellness services as a result.

Sometimes, the Wellness Unit has found that the only thing an individual requires is someone to listen to him or her. If an employee wants a referral to a wellness service provider or other expert (such as a financial planner or a nutritionist), staff members are trained to connect them with the appropriate resources.

Operational philosophy

Ideally, retired Assistant Chief Creighton said, all employees’ direct supervisors would serve as their “primary caregivers” and offer the sort of individualized support that the Wellness Unit provides. However, in practice, that is not always possible, because some supervisors lack the time or skills to give employees the assistance they need. The Wellness Unit fills that gap. “There has to be some place or some person where a supervisor who doesn’t have the right interpersonal skills—or sufficient amount of time to address the issue—can send employees who need assistance and where employees who need assistance can go if their supervisors can’t provide it,” Creighton explained.

Supporting direct managers

The Wellness Unit also addresses this issue by engaging with managers directly. “We tell supervisors and management that they are the primary caregiver for their employees. That’s part of a leader’s role,” retired Assistant Chief Creighton said. “We’ve done training to make supervisors more comfortable in this role, which has been an ongoing educational agenda. This is about a larger culture change. Wellness is about good leadership and helping department leaders become better at providing services themselves.”

Assistant Chief Sandra Albrektsen, who took command of the Wellness Unit upon Creighton’s retirement in early 2017, counts this effort among her top priorities for the Wellness Unit. “We’re working on turning the Wellness Unit more into facilitators, coaches, and teachers,” she said. “We want to use them to develop the wellness-related and interpersonal skills of our executive staff. Our command staff and managers have responsibilities to their people as leaders, and this is part of those responsibilities.”¹⁵⁴

Agency-wide activities and services

The second type of services the Wellness Unit provides is geared toward the entire police department or groups within the department. Developing and delivering wellness training to department members is one example of these duties. This category also includes managing, coordinating, and deploying all of the SDPD’s help resources, including police chaplains, peer support employees, and psychological services personnel. In addition, the Wellness Unit

- provides educational seminars and workshops on wellness-related issues that are important to SDPD employees (e.g., sleep hygiene, financial planning, and nutrition);
- provides wellness-related training to department members;
- keeps a record of wellness contacts to track use and trends in wellness issue areas (no identifying information is associated with these records);
- identifies new help resources to use as referrals for department members.

Interagency and interdisciplinary activities and services

The Wellness Unit also has a third set of duties as part of its mandate: engaging with external partners. In practice, this means developing partnerships with academics and other wellness experts to ensure that the SDPD’s wellness programming is informed by promising practices.

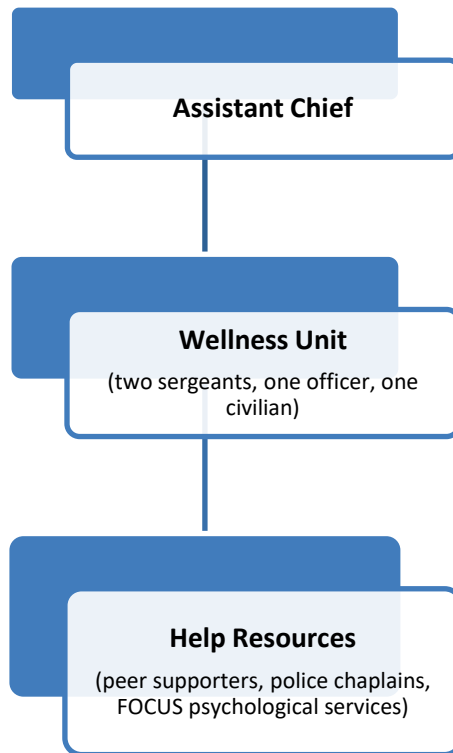
¹⁵⁴ See “Training: Building a Culture of Wellness” beginning on page 47 for more details.

It also includes managing the County Wellness Forum. Created by the Wellness Unit, the forum meets once a quarter. Participants, who include representatives from all of the law enforcement agencies in San Diego County as well as other help resources providers, discuss promising practices, and share resources, which increases access to wellness services across agencies.¹⁵⁵ Each meeting also typically includes an educational presentation delivered by an expert on a wellness-related topic.

Organization

The Wellness Unit has grown since 2011. Today, it is composed of two sergeants, one officer, and one dispatcher, all of whom are under the command of an assistant chief (see figure 1). The Wellness Unit also oversees and manages all of the SDPD’s help resources providers. This includes peer supporters, police chaplains, and Focus Psychological Services, which provides psychological services for employees and their dependents.¹⁵⁶

Figure 1. SDPD Wellness Unit organizational chart



¹⁵⁵ SDPD, *Changing Organizational Culture*.

¹⁵⁶ For detailed information about these programs, see “Help Resources” beginning on page 35.

Help resources

Many help services providers in the SDPD predate the Wellness Unit, but prior to 2011 they were under different commands and had little substantive interaction. The various providers self-deployed to critical incidents and operated largely independently of one another. Bringing them all together under the Wellness Unit ensured that their management, coordination, and training were centralized. “There was no communication among help resources prior to the Wellness Unit,” Lieutenant Bassett explained. “Now it’s automatic that we work together and coordinate deployment if there’s a critical incident or any other need. Because all of the SDPD’s help services are centralized, we are able to send the appropriate resources in the appropriate quantity.”

Organizing all of the SDPD’s help resources under the Wellness Unit also made them a more integral part of the department, said police chaplain the Reverend Chuck Price. “Once the police chaplains were brought under wellness, we got broader visibility,” he explained. “We came in with peer support and the other wellness components. It was nice to have a home and a known advocate within the organization, and it also brought us symbiosis with all of the other help services entities.”

Organizational visibility was one of retired Assistant Chief Creighton’s goals. “We had all of the resources that we needed at the SDPD—chaplains and peer supporters for example—but they were all under different umbrellas and didn’t communicate with each other,” she said.

Civilian representation in the Wellness Unit

Another innovation of the Wellness Unit is that it includes a civilian member of the department. Currently, dispatcher Deanna Dotta, who provides wellness support to civilian and sworn employees, fills that role. She said that her inclusion in the Wellness Unit sent an important message to the department’s nonsworn staff members. “Civilians can sometimes be a second thought in law enforcement agencies, so having a civilian in the Wellness Unit makes the civilian members of the department feel like they’re a vital and valued part of the department,” she explained. “Communications and crime lab personnel experience repeated exposure to trauma. These individuals need emotional support and the opportunity to debrief just as officers do.”

Physical location: Making the Wellness Unit visible

In addition to appearing on the SDPD’s organizational chart, the Wellness Unit is also a visible physical presence in the department. The Wellness Center, which is the Wellness Unit’s main office, is strategically located in SDPD headquarters to encourage officer engagement and reduce any stigma associated with utilizing wellness services. The Wellness Center is usually open from 7:00 a.m. to 5:00 p.m., Monday through Friday.

Moving the Wellness Center to headquarters

The Wellness Center was moved from an off-site location to headquarters in 2012 as part of a larger effort to normalize wellness at SDPD. “We were initially off-site because of concerns that department members would be less likely to come to the Wellness Center if they thought that their colleagues might see them,” said retired Assistant Chief Creighton. “Moving the Wellness Center to headquarters really normalized Wellness as just another resource. It’s just like walking into operational support and getting a battery for your flashlight. It destigmatizes asking for help.”

The Wellness Center is also purposefully designed as a relaxed social space that encourages department members to drop in even if they are not seeking wellness services. It sits across the hall from the cafeteria, offers free coffee and snacks, and is centered on a lounge area with a couch, coffee table, and chairs.

The move to headquarters paid dividends, retired Assistant Chief Creighton said. “We saw a dramatic uptick in utilization once we moved over from our previous off-site location,” she explained. “Having the Wellness Center off-site unintentionally implied that there was something shameful about Wellness. Moving it to headquarters got rid of that.”

Confidentiality

Studies have shown that police officers’ concerns about confidentiality are a significant barrier to seeking mental health support,¹⁵⁷ especially when the support services are provided by the police department.¹⁵⁸ The Wellness Unit worked to overcome officers’ reluctance to seek services by writing and publicizing a clear confidentiality policy and adhering to it.

The Wellness Unit’s confidentiality policy¹⁵⁹ states that the success of the Wellness Unit is predicated on maintaining the confidentiality of employees who use wellness services and requires that the “strictest confidentiality . . . be maintained, within the guidelines of the program.”¹⁶⁰ The confidentiality policy also explicitly describes the limited types of situations that are not covered and that Wellness Unit members are mandated to report, namely when any of the following conditions are met:

- The employee is a danger to him- or herself or to others
- There is suspected child abuse
- There is suspected domestic violence or a fear thereof
- There is suspected elder abuse¹⁶¹

¹⁵⁷ Fox et al., “Mental-Health Conditions.”

¹⁵⁸ Fox et al., “Mental-Health Conditions.”

¹⁵⁹ See appendix B for the full policy as outlined in the Wellness Unit’s operations manual.

¹⁶⁰ SDPD, *Wellness Unit Operations Manual*, 4.

¹⁶¹ SDPD, *Wellness Unit Operations Manual*, 13.

The following are also specifically described as issues that should be reported to the Wellness Unit commanding officer:

- Narcotics offenses (i.e., using narcotics on duty, committing a felony related to narcotics)
- Felonies
- Felonies committed while on duty
- When the person receiving wellness services requests in writing that information be shared with the Wellness Unit Commanding Officer
- “Matters that would jeopardize the safety of the public or other officers”¹⁶²

“The minute that the confidentiality policy as we’ve outlined it is violated, the credibility of the Unit goes out the window,” said retired Assistant Chief Creighton. “You can ruin years of hard work and building trust by one mishandled incident.”

The Wellness Unit’s policy states that, irrespective of department rules, conversations between department employees and Wellness Unit staff—i.e., the SDPD members who are staffed to the Wellness Unit full-time—are not considered privileged because the members of the Unit are not licensed mental health professionals.¹⁶³ That is not true, however, of all help services providers who work with the SDPD. Focus, for instance, is an outside organization that contracts with the SDPD to provide psychological services for department members and their dependents. Though Focus psychologists work closely with the Wellness Unit, they are independent mental health care providers, so all discussions are protected by patient-provider privilege. “The biggest hurdle when it comes to getting police officers to utilize mental health services is confidentiality,” explained Dr. Jolee Brunton, the chief psychologist for Focus. “On the first day that we sit down with someone from the department, we discuss confidentiality in detail and also describe to them the circumstances in which we’re mandatory reporters: child abuse/neglect, elder abuse/neglect, and Tarasoff situations.¹⁶⁴ We are not mandated reporters of domestic violence. We’re clear and forthright,” she said, “and the officers respond well to that.”

Thus, SDPD employees who need wellness services have access to a wide range of providers who offer different degrees of confidentiality as well as different areas of expertise.

¹⁶² SDPD, *Wellness Unit Operations Manual*, 5.

¹⁶³ SDPD, *Wellness Unit Operations Manual*, 5.

¹⁶⁴ In the California Supreme Court’s 1976 decision in the case *Tarasoff v. Regents of the University of California*, the court found that “When a therapist determines, or pursuant to the standards of his profession should determine, that his patient presents a serious danger of violence to another, he incurs an obligation to use reasonable care to protect the intended victim against such danger.” For the full text of the decision, see *Vitaly Tarasoff et al. v. The Regents of the University of California et al.*, 17 Cal. 3d 425 (1976). https://scholar.google.com/scholar_case?case=263231934673470561.

Recruitment and rotation in the Wellness Unit

Officers' concerns about confidentiality speak to another, practical concern that the SDPD faces when working to make the Wellness Unit successful: SDPD employees will not open up to someone they do not trust. As a result, the SDPD has focused on recruiting for interpersonal skills rather than rank when bringing new team members into the Wellness Unit.

Picking the right people

"The success of the unit is based on picking the right people," retired Assistant Chief Creighton said. "There is no substitute for genuine caring." When discussing why she recruited Lieutenant Bassett for the Wellness Unit, Creighton explained that "he reads people really well and is all about putting others before himself. He's someone who people gravitate to, and he's also a cop's cop. He lent legitimacy to the work, and people knew that they could trust him."

"Gossip can ruin careers," Lieutenant Bassett explained. "I understand that. Before I joined the Wellness Unit, I had a good reputation for not sharing people's private information if they confided in me."

Being nonjudgmental is also critical, said Sergeant Ed Zwibel.¹⁶⁵ "We have people of all ranks calling on us for support. We're outside of their command and they know that we won't judge them," he explained. "They need to know that we're there for them and that we're there to support them as people, not criticize them for what they've done or what they're going through."

It is also important that members of the Wellness Unit "walk the walk," said Assistant Chief Albrektsen. "The credibility of the unit in general is rooted in the credibility of its members. The people in the Unit need to be well themselves."

Recruitment and selection process

To identify new recruits to staff the Wellness Unit, Assistant Chief Albrektsen taps into the knowledge that her captains have of the officers in their divisions. "I wanted the selection process for the Wellness Unit to be transparent," she said, "so I start by asking the captains who they would recommend for the unit and go from there."

When there is a position open in the Wellness Unit, candidates are interviewed informally. "We don't ask them a list of standard questions," explained Sergeant Carmelin Rivera, who is currently in the unit. "We want them to explain why they want to work in Wellness and why they think they would be a good fit. We're also looking for people who have been here for a while and have a good understanding of the organization of the department. Understanding those nuances lends you credibility." Depending on the needs of the agency, other departments may find it useful to create structured interview questions to promote consistency and impartiality during the selection process.

¹⁶⁵ Zwibel was previously with the Wellness Unit.

Lessons from San Diego: Characteristics to look for when selecting members of a wellness team

- **Nonjudgmental.** Someone who knows how to make people feel cared for and who understands that the role of the wellness team is supporting others, not passing judgment on them
- **Compassionate.** Someone who is empathetic and cares for others
- **Experienced.** Someone who is familiar with the department and has a personal understanding of the stress associated with working in a law enforcement agency
- **Proven legitimacy.** Someone whom members of the department already gravitate toward when they are seeking assistance, advice, or support
- **Trustworthy.** Someone who does not gossip about others
- **Demonstrates wellness.** Someone who attends to his or her own emotional and physical health and models that for others

Ensuring the wellness of the Wellness Unit

The serious responsibilities of the Wellness Unit can take an emotional toll on its members, which makes the risk of employee burnout high. “I mandated psychological services check-ins for myself and the other members of the Wellness Unit,” said retired Assistant Chief Creighton. “I also allowed the team to work out while they were on duty, because it was so important that they stay healthy and have effective mechanisms for managing their stress.” She added that members of the Wellness Unit also check in with one another informally on a regular basis to ensure no one is overwhelmed.

Rotating out of the unit: The two-year limit

Assistant Chief Albrektsen formalized in policy a practice of putting a two-year limit on assignments to the Wellness Unit because of how emotionally taxing the work can be. Based on the experiences of former and current Wellness Unit members and the fact that they are essentially on-call 24/7, it was determined that the two-year limit would protect the emotional health and well-being of staff members. The limit also ensures that SDPD employees seeking services can be confident that the unit’s members are emotionally equipped to assist them.

Training for help services providers

All members of the Wellness Unit (as well as all peer supporters) are required to attend a Commission on Police Officers Standards and Training (POST)–certified three-day peer support training.

Dr. Nancy Bohl-Penrod, head of Counseling Team International (CTI) and a POST peer support trainer, said that the training starts with a description of the characteristics of a successful peer supporter (empathetic, nonjudgmental, respects confidentiality, etc.). The training then transitions into a series of topic areas such as active listening, crisis intervention, grief, and substance abuse, each of which is followed by a role play exercise. “We also teach them about when they need to pass the baton to a professional, maintaining boundaries, and when to refer and when to not make a referral,” she said.

The SDPD’s police chaplains complete their own specialized 40-hour POST-certified chaplaincy training.

Availability and assignments

While the Wellness Unit has a physical location with set hours, staff members also meet with employees in need at any time and in any place. SDPD employees do not need to go to the Wellness Center to receive wellness services. Members of the Wellness Unit are available 24/7.

On-call protocol

To accommodate off-hour requests for assistance, the Wellness Unit has an on-call protocol. The Wellness Unit is included on watch commanders’ text lists, and if there is a critical incident or an employee in crisis calls the watch commander, the on-call Wellness Unit member is notified and responds. So that they are able to do so as quickly as possible, Wellness Unit members have assigned cars and take-home privileges when they are on call. If more than one member of the Wellness Unit needs to respond to an incident, whoever is not on call goes to the station to pick up his or her car before going to the scene.

In addition to this on-call protocol, SDPD employees often contact individual members of the Wellness Unit directly because they know and trust them. When that happens, “you take the call,” said Sergeant Rivera, echoing similar sentiments from other members of the Wellness Unit.

“This is a 24/7 job,” said retired Assistant Chief Creighton, “and people need to have access to us at all times.”

Deployment

A critical lesson that the Wellness Unit learned from its first month of operation in 2011 was how to deploy help resources. Waiting for a request from command staff to send help resources to the scene of a critical incident was impractical and delayed response time. Instead, Wellness Unit staff members dispatch these service providers—and respond themselves—immediately.

This nontraditional deployment also extends to the scene itself. During the manhunt following the fatal shooting of Officer Jeremy Henwood in 2011, police chaplains and psychologists were taken to officers' posts to begin providing support to them immediately, even as the search continued.¹⁶⁶

Building awareness of and trust in the Wellness Unit

Ultimately, all of the operational components of the wellness program—the physical location of the unit, the availability of wellness services, the training and education sessions that the unit develops—are intended in part to build awareness of the Wellness Unit. To ensure that services are used and to build department members' trust in wellness services, the Wellness Unit has an active internal outreach program.

Going to lineups

The unit has proactively engaged with SDPD employees since its inception. “We went to lineups,” retired Assistant Chief Creighton said, “to talk to members of the department about who we were, what the Wellness Unit was, and what we wanted to accomplish for them.”

These early efforts were critical to obtaining support, said the Reverend Dale Lowrimore, a police chaplain. “We went to every lineup at every command and gave a presentation to every single person,” he said. “We needed to explain what was changing in terms of the reorganization and what the confidentiality policy was, to overcome fears that Wellness was a ‘tattle tale’ place. We also needed command staff to understand who we were and what we were about.”

Newsletters, brochures, and written announcements

The Wellness Unit also produces written materials to explain its services and publicize its events, including a Wellness Unit Employee Resources brochure¹⁶⁷ and a monthly newsletter, *Wellness News*.¹⁶⁸

The Wellness brochure is a one-page, double-sided quick reference guide that lists all of the help services offered and outlines additional resources that the SDPD provides. The information in the brochure includes the following:

- The mission of the Wellness Unit
- Wellness Unit services
- The names and contact information (office number, cell number, and email) of all members of the Wellness Unit
- A list of the SDPD's peer supporters

¹⁶⁶ SDPD, *Changing Organizational Culture*.

¹⁶⁷ See appendix C for a copy of the brochure.

¹⁶⁸ See appendix D for a copy of the monthly newsletter from August 2017.

- The mission of the police chaplain program
- A list of the SDPD’s police chaplains and their contact information (phone and email)
- A description of Focus Psychological Services, who they serve, and the services that they provide as well as their contact information (email and phone)
- A description of the Alcohol and Substance Abuse Program (ASAP) and contact information (email and phone) for the SDPD’s ASAP counselors
- A list of additional resources and contact information (phone) for the following:
 - Medical assistance
 - EAP
 - The San Diego Police Officers’ Association (SDPOA)
 - The San Diego Metropolitan Employees Association (SDMEA)
 - AFSCME127 (a local labor union)

The Wellness Unit distributes this brochure widely, sharing it at trainings, events, and lineups. Wellness Unit members also give a copy of this brochure to new officers the day they start the academy as part of a strategy to create a culture of wellness in the department by normalizing wellness services among new hires.¹⁶⁹

Wellness News, the Wellness Unit’s monthly newsletter, is distributed using the SDPD listserv. It provides articles on wellness topics, information about upcoming wellness-related events, and wellness tips and resources. The information that it offers is holistic, touching on all aspects of wellness.

The August 2017 newsletter¹⁷⁰ included

- a message from Assistant Chief Albrechtsen on the benefits of blood donation;
- an informational flyer about an upcoming blood drive;
- an announcement about the negative effects of neglecting self-care, including the impact on officers’ families;
- a fitness and weight loss success story, with photos, written by a department member;
- an article about wellness, mindfulness, and the Wellness Unit, written by Deanna Dotta of the Wellness Unit;
- an article titled “The Lies We Tell Ourselves—Barriers to Wellness,” written by Sergeant Rivera of the Wellness Unit;
- an announcement about fitness opportunities at the department and workout resources;

¹⁶⁹ This is part of a larger strategy to create a culture of wellness in the department.

¹⁷⁰ See appendix D.

- a list of items that officers should always have in their gear bags, including disinfecting wipes, a first aid kit, and extra gloves;
- book recommendations, including a discount coupon code for one of the suggested titles;
- an SDPD wellness resource list (including contact information for Focus, the EAP, police chaplains, and the Wellness Unit staff).

“The wellness newsletter is fantastic,” said Marie Cuvadar, a police dispatch supervisor and peer supporter, “and they reach a really wide audience.”

In addition to announcing upcoming training and educational seminars in the newsletter, the Wellness Unit sends out announcements to encourage participation. “We’ve put together workshops on retirement, healthy eating, and sleep hygiene,” explained Lieutenant Bassett, “and we always put out department-wide announcements so that people are aware that these events are coming up and these resources are available to them.”

The Wellness Unit also created posters that describe the unit and wellness services and include contact information for the unit and other help resources.¹⁷¹ These posters are displayed around SDPD headquarters and in division stations.

Building trust

The key is when you get someone who has used wellness services and tells someone else that they had a good experience.

— *Assistant Chief (ret.) Sarah Creighton, San Diego Police Department*

While these materials make department members aware of wellness resources, ensuring that employees use the resources depends on trust. “It has taken a lot of meetings and a lot of groundwork to build an understanding of what Wellness does,” said the Rev. Lowrimore. “Wellness has a great reputation because we hold confidentiality in the highest possible regard.”

Retired Assistant Chief Creighton said that building a reputation for discretion takes time. “It’s slow going convincing people that you respect confidentiality, even when you have the best people on your team,” she said.

Lieutenant Bassett underscored the importance of individual interactions in building trust, person by person, over time. “In the beginning, people would fish and ask who I was going to tell about our conversation,” he said. “I would say that the only person who could tell anyone was him or her.”

¹⁷¹ The poster has been modified since PERF’s research into the SDPD’s Wellness Program.

What using wellness services looks like in practice: A scenario

Officer Adams is going through a difficult divorce. Since proceedings began, he has been increasingly irritable. He has told his friend, Officer Smith, that he is having trouble sleeping, and Smith is worried that Adams may be starting to drink more than normal after his shifts. Smith tries to talk to Adams about how he is coping with his divorce, but Adams rebuffs him.

Smith is familiar with the Wellness Unit because of the training the Wellness Unit provided in the academy and after field training. He knows that he can get the contact information for anyone in the Wellness Unit from several places, including the SDPD intranet, brochures, and posters located throughout headquarters.

Smith calls the Wellness Unit and asks one of the sergeants to check in on Adams. The Wellness Unit sergeant calls Adams at the end of his shift. She explains the services that the Wellness Unit provides and that the Wellness Unit is there as a resource for him. She says that she can connect him with anyone who might be helpful to him, including financial counselors, psychological services, and peer supporters who have had similar experiences.

The sergeant also encourages Adams to visit the Wellness Center. He agrees to stop by the next morning. While there, she gives him the contact information for two service providers and several peer supporters and says that she will call to check in on him the following day.

The sergeant underscores that Adams can reach out to her at any time if he needs to talk. Adams calls one of the peer supporters that afternoon, and they talk several times over the course of the week. Two weeks later, on advice of his peer supporter, he makes an appointment with a financial counselor recommended by the Wellness Unit sergeant as well.

Metrics for success

The only product we produce as an agency is our employees, and all of their work is improved if they're well.

— *Sergeant Ed Zwibel, San Diego Police Department*

The Wellness Unit uses several mechanisms to measure its success: surveys, utilization reports, and a quarterly management report (QMR). For a unit that operates under a confidentiality policy, these metrics are especially critical in demonstrating the success and impact of their efforts. “There is all of this hidden work that we do that most people never know about unless they’re using wellness services, and that’s exactly how I hoped it would be,” explained Sergeant Ed Zwibel.

Utilization reports: Recaps

Each month, the Wellness Unit produces a report, called a recap, on the number of wellness contacts (i.e., one-on-one contacts—in person, on the phone, via text, via email, etc.—that they have with department members) made that month. Each report contains the following information:

- Number of individuals served
- Type of service they received
- General demographic information
- General description of the issue(s) for which each individual was seeking assistance

Every member of the unit and every help services provider is required to submit a “recap sheet”¹⁷² on the 10th day of the month that captures this information. The Unit then combines these submissions into a single report.

Importantly, recaps contain no identifying information about the employees who use wellness services. Their purpose is to assist the Wellness Unit in identifying themes and trends; to inform their outreach, events, and training protocols; and to keep track of how many department members are using help resources.

Quarterly management report (QMR)

The Wellness Unit prepares a report for the chief’s executive committee every quarter. It documents the following:¹⁷³

- The number of employees who provided wellness assistance and the number of hours they spent on wellness contacts
- The issue areas they addressed with department members, ranked from most to least prevalent
- The training that the Wellness Unit and help services provided
- Any new or ongoing projects and community partnerships
- Summaries of critical incidents

¹⁷² See appendix E for a recap sheet.

¹⁷³ SDPD, *Changing Organizational Culture*.

2013 survey

At the close of its first two years in operation, the Wellness Unit also conducted a survey¹⁷⁴ to assess its progress. The 240 respondents said the following:

- 78 percent felt like there was a lot more discussion about issues like suicide, substance abuse, and other ineffective coping behaviors than two years earlier.
- 70 percent felt that the stigma associated with asking for help was decreasing.
- 89 percent trusted that if they had a personal issue that was interfering with work or home, they could ask for help and receive help.
- 79 percent said that they would feel comfortable walking into the Wellness Center regardless of the reason for their visit.

Sustainability planning

While the Wellness Unit has proven critical to the department, Assistant Chief Albrektsen said that sustaining it long-term depends on demonstrating that it saves money. “Partnering with other first responders and working with risk management in the city is what makes this work in the long term,” she said. “You have to work with other agencies and demonstrate a dollar savings for the city, showing that this is preventing all sorts of negative outcomes related to poor physical and emotional health in the department.” Indeed, poor physical and mental health among officers can lead to absenteeism, increased usage of workers’ compensation and sick days, and increases in early retirement,¹⁷⁵ which has proven to be a costly burden for agencies.

Promising practices: Building and sustaining a wellness program

First steps

- Conduct a department-wide survey to ask employees what they need and what their primary wellness concerns are. Use that information to guide the development of wellness programming and services.
- Have a clear, written confidentiality policy, communicate it to department members, and adhere to it. Ensure that reporting requirements and exceptions are understood, such as information indicating that an employee may be a danger to himself or herself or to others or that domestic violence or child abuse may be occurring. Some providers, such as clinicians, may be bound by more stringent confidentiality rules than police department employees. Ensure that employees understand these differences and understand the confidentiality rules that bind each category of help services providers.

¹⁷⁴ See appendix F for full survey and results.

¹⁷⁵ Andersen et al., “Mental Preparedness;” Garner, “Police Stress.”

- Locate your wellness office or center in headquarters or another high-visibility location to reduce any stigma that employees may feel about seeking help.
- Your department’s help resources providers should be in close communication with one another and should work together to deliver wellness services. This includes
 - having a common mission and messaging so that they are working together toward a shared wellness goal for the overall good of the department;
 - communicating with each other to coordinate responses to critical incidents.

Outreach and engagement

- Make wellness services visible on your organizational chart to demonstrate their importance.
- Go to officer roll calls to explain wellness services.
- Develop materials to publicize the services and how to access them, including
 - brochures;
 - newsletters;
 - posters.

Recruiting

- When recruiting people for wellness-related programs, look for interpersonal skills, not necessarily rank. Wellness unit staff members should be
 - compassionate;
 - nonjudgmental;
 - experienced in the organization;
 - trustworthy;
 - respected by colleagues.

Training

- Mandate that help services providers receive formal training—for example, POST-certified peer support training—to ensure that they have the right tools to be successful in supporting their colleagues.
- Provide opportunities for help services components to train together. This improves team building and ensures that all providers share common messaging and goals.

Operations

- Do not neglect civilian employees. Include them in wellness services as providers and as recipients.
- Wellness providers need to be available 24/7. Crises are not confined to business hours.
- In addition to serving as a resource during regular business hours, wellness services providers should be able to meet with employees seeking help at the times and locations that work best for them.
- To accommodate off-hour requests for assistance, develop an on-call protocol for the wellness services providers and advertise to department employees.
- Assignments for wellness providers should be made based on relationships and trust. Often, whether at the scene of a critical incident or when someone walks into the Wellness Center, an employee wishes to talk to a specific help services provider.
- Establish a policy that allows wellness services providers to deploy help services during or immediately after a crisis without needing to wait for a request from command staff.
- Wellness services providers should check in regularly with those who use their services and follow up on anniversary dates as well.

Maintaining the wellness of help services providers

- It is important to ensure that employees who provide wellness services are themselves in good physical and emotional health. Be aware that assignment to a wellness unit can be stressful, and be mindful of the wellness of help service providers. Adopt policies and protocols to promote their physical and emotional health. Examples include
 - having mandatory psychological service check-ins;
 - allowing wellness workers to exercise while on duty.
- Have a protocol for rotating wellness service providers out of help services roles to prevent burnout. This might include one (or both) of the following:
 - A policy limiting the amount of time that someone can spend in a wellness-related role
 - A form that wellness service providers can fill out and submit without penalty asking to be relieved of wellness-related duties

Metrics for success

- Develop a mechanism for tracking the use of help services, such as the monthly recap report that the SDPD's Wellness Unit compiles every month based on recap sheets (see appendix E) completed by each help services provider.
- Survey the department after wellness services have been in place for a year or more to determine their levels of visibility, employee trust, and use. Modify your approach as needed based on results.

Sustainability planning

- Make it clear that a successful wellness program is good for the financial health of your law enforcement agency—i.e., keeping officers physically and emotionally healthy is a cost-saving measure in the long term—to secure support for wellness programming from city government.

External partnerships

- Draw upon the expertise of people outside of your organization. This might include
 - a nearby law enforcement agency that already has wellness services;
 - academics with experience in wellness-related topics;
 - police psychologists.
- Partner with mental health providers, academics, and other outside experts to refine wellness program methods and initiatives and provide needed services to department members.

Help Resources: Providers and Programs

The help resources that the Wellness Unit manages—police chaplains, peer supporters, and psychological services—are critical components of the SDPD’s wellness program. Many providers said that while these programs predate the Wellness Unit, their efficacy has increased now that they are working together under one command and toward a common goal.

Pooling knowledge improves the delivery of wellness services to those in need.

— *Police Dispatch Administrator Mellissa Santagata, San Diego Police Department*

“If we have an issue that we haven’t encountered previously, it’s likely other wellness providers often have seen it, and the Wellness Unit can give us the information and referrals we need without us having to reinvent the wheel,” Mellissa Santagata, a police dispatch administrator and peer supporter explained. The SDPD’s individual wellness initiatives are interconnected and serve as force multipliers for one another.

Peer Support Program (PSP)

The SDPD’s Peer Support Program (PSP) encompasses the following:

- **General peer support.** Support provided by civilians and officers to department members and loved ones experiencing difficulties in their lives
- **Officer involved shooting (OIS)/in-custody death peer support.** Support provided by officers to officers involved in a shooting or in-custody death

All members of the peer support program provide general peer support. When there is an OIS or an in-custody death, however, sworn peer supporters who have themselves been involved in a shooting or an in-custody death respond. Peer supporters who do not have this experience are not assigned to supporting an involved officer in the wake of a shooting or in-custody death.¹⁷⁶

¹⁷⁶ This is generally true, though in extraordinary circumstances such as a mass casualty incident, as many peer supporters as needed would be mobilized to respond regardless of status.

Before the Wellness Unit was created, and indeed until 2016, general peer support and OIS peer support were two distinct programs. The former was called the Member Assistance Program and the latter was called Peer Support. They were combined to align the program with the IACP's recommendations on peer support as well as standard practice in California.

Training

All peer supporters at the SDPD are required to attend POST-certified three-day peer support training.

In addition to the POST peer support training, the SDPD's peer supporters are also required to attend two refresher training sessions every year. These sessions, held quarterly, are organized by the Wellness Unit and are each dedicated to a different wellness topic such as mindfulness and sleep hygiene. The SDPD invites outside experts in to present during these trainings.

OIS peer support

OIS peer support is a service provided to officers who are involved in a shooting or an in-custody death by other officers who have had the same experience. The goal of OIS peer support is to provide officers who have been involved in or have witnessed a shooting or in-custody death with emotional support and help them navigate the post-incident investigative process.¹⁷⁷

Recruitment

There are approximately 30 peer supporters who provide OIS-specific support (OIS peer supporters) in the SDPD Peer Support program. The eligibility requirements to provide this type of peer support include the following:

- Being a nonprobationary POII, POIII, or sergeant
- Having met departmental performance standards
- Having experience of a shooting or in-custody death (which must have occurred more than 12 months prior)
- Being a good listener and good with people
- Being available at all times (both on duty and off) to respond to critical incidents as needed
- Having a recommendation from his or her commanding officer¹⁷⁸

¹⁷⁷ SDPD, *Wellness Unit Operations Manual*, 11.

¹⁷⁸ SDPD, *Wellness Unit Operations Manual*, 9.

As Sergeant Rivera explained, “OIS peer supporters are vetted. We ask them to apply to be a peer supporter and if they happen to have a qualifying incident, we take them through an extra interview process to determine if they would be the right fit for providing peer support during OIS incidents.” These interviews, said Dr. Bohl-Penrod, are done by a licensed clinician and one or two members of the Wellness Unit.

Operations

If they are responding to a scene as an OIS peer support officer while they are off duty, or if they work past the end of their shift because they are doing so, OIS peer supporters are paid overtime.¹⁷⁹

Deploying to the scene

All officers involved in a shooting or an in-custody death receive an OIS peer supporter. While they do self-deploy, Sergeant Rivera explained, it is the responsibility of the supervisor on-scene to request peer support. The first OIS peer support officer who arrives at a shooting is responsible for assessing the scene to determine if additional OIS peer supporters are needed. Ideally, said Detective Sergeant Jeff Sterling, there is a one-to-one ratio of OIS peer supporters to shooting and witness officers. If that is not possible, OIS peer supporters always maintain a one-to-one ratio with shooting officers.

If the officer involved would like a particular peer supporter, that request is honored as a matter of policy and practice. “If I get to a scene and the guy knows another OIS peer supporter already and wants to talk to him or has a good relationship with him, I’ll let the other peer supporter know and just stay there with the officer until the other peer supporter shows up,” explained Detective Sergeant Sterling. Sergeant Michael Shiraishi agreed, saying, “We ask the officer if they know anyone on peer support they’d rather talk to. There’s no ego there. If there is and they would, we make the call.”

Activities on scene

As officers who have been in similar circumstances themselves, OIS peer supporters have a comprehensive understanding of the post-shooting investigation process, and they begin to help officers through it once they arrive on scene. “We sit and talk to them about what is going to happen next and what the process looks like, but it’s a fine line because we don’t want to take a statement,” Detective Sergeant Sterling said. “Our role is to give them information, drive them, get them in touch with their attorney, wait with them while they’re doing their walk-throughs on scene, wait while they’re doing their detailed interviews, and drive them home when they’re all done.”

Follow-up activities

Officers involved in shootings and in-custody deaths participate in mandatory critical incident debriefings that are facilitated by a Focus psychologist. OIS peer supporters are not currently involved in those debriefings, but they do provide continued follow-up and support to officers.

¹⁷⁹ SDPD, *Wellness Unit Operations Manual*, 9.

OIS peer supporter Detective Nestor Hernandez described his method as following up within the first 24 hours, then every two days for the first two weeks, and then letting the officer determine their level of contact once the two weeks have passed. Sergeant Shiraishi said, “After the debrief, one of the things that I ask them about is their home life. I talk to them about signs they should look out for, like if they become hypersensitive to their kids or if they have more tense interactions with their significant others. I’ve had officers reach out to me after the fact to say that they’re noticing that kind of stuff, and I drive them down to the psychologist at Focus to get them an appointment to talk to someone.”

Peer support (non-OIS)

The SDPD’s Peer Support program also includes peer supporters who do not provide OIS-specific support. These peer supporters include sworn and civilian members of the SDPD. Their purpose is to provide support to department members and their loved ones who are grappling with challenges in their lives.

Recruitment

There are approximately 40 sworn peer supporters and 13 civilian peer supporters at the SDPD in addition to the peer supporters who provide OIS-specific services. Eligibility criteria for becoming a peer supporter include the following:

- Having met departmental performance standards
- Having a reputation as someone whom others already seek out for informal peer support and who can keep information confidential
- Being a good listener and good with people¹⁸⁰

Making peer supporters accessible: The intranet directory

All peer supporters have a profile on the SDPD’s intranet that includes their photo as well as a description of the particular issues with which they have experience, such as divorce or the death of a loved one. Their profiles also include their contact information. Members of the department can review these profiles and reach out to the peer supporters who can speak directly to their issues and concerns.

Operations

Peer supporters are volunteers, providing assistance on their own time and without compensation. As a result, the policy of the peer support program is that departmental and regular duties are a peer supporter’s first priority. It states that peer support work should not take peer supporters away from their jobs or negatively impact their performance.¹⁸¹

¹⁸⁰ SDPD, *Wellness Unit Operations Manual*, 12.

¹⁸¹ SDPD, *Wellness Unit Operations Manual*, 12.

Police chaplain program

The SDPD's police chaplain program was created in 1969. It is a volunteer corps of faith leaders from the community who offer emotional support and spiritual guidance to police employees and their families. They do not proselytize, and the support they offer is nondenominational.¹⁸²

Police chaplains, the Reverend Lowrimore said, are a critical component of wellness programming. "Wellness programs should address the mind, body, and spirit, and without chaplains they're not well-rounded in my view," he said. "Additionally, a lot of officers won't necessarily go to a psychologist, but they will speak with a chaplain."

The SDPD's police chaplain program has undergone an evolution since 2007, the Reverend Chuck Price said. "For many decades we defaulted into crisis-driven chaplaincy," he said, "and there was no training, policy, or organization" to the program. In an effort to change this, the Reverend Price and the other active members of the program researched chaplaincy programs and developed a written policy, based on established standards, for the program.

Recruitment

SDPD currently has 11 police chaplains and space for nine more. "It's a challenge to fill 20 slots," said the Reverend Lowrimore, "because all of the agencies in this area are drawing from the same pool of resources. Many of us are already doing double and triple duty with different agencies."

The eligibility requirements for those who would like to join the chaplain program include the following:

- Chaplaincy recognized by a religious body and approximately five years' experience in ministry
- Current involvement in a ministry, congregation, or church-related organization in San Diego County
- Pass an oral interview and a background check
- Master's degree from an accredited graduate institution or a denominational equivalent
- Demonstrable experience and training in counseling and theology¹⁸³

The emphasis on faith leaders with experience, said the Reverend Lowrimore, is intentional. "We look for senior people," he said. "We want people who have experience and who have been in ministry for a long time. We deal with life and death every day, so having a minister who is young and somewhat inexperienced doing this work may not be a good fit."

There are particular personality types to look for in recruiting for the program, the Reverend Price explained. "We've learned that we really need to look for humility. We have some people who come in humbly and want to learn how to do this, and those are the ones who do well."

¹⁸² SDPD, *Wellness Unit Operations Manual*, 16.

¹⁸³ SDPD, *Wellness Unit Operations Manual*, 16.

“The biggest lesson I’ve learned is that police chaplains have to be tenacious,” said the Reverend Lowrimore. “As chaplains, we have to keep going. We’re not always everyone’s cup of tea, and that’s fine—we just keep going.”

Training

The SDPD’s police chaplains are required to complete a 40-hour POST-certified chaplaincy training program. In addition, they have bimonthly meetings that include an educational component. “At our meetings we tend to have a training of some sort, or at least a debriefing about major incidents,” explained the Reverend Lowrimore. “We may hit something specific like death calls, including what you should do when you get there, what you should have with you, and what your role should be. Police chaplains need to know what they’re doing.”

Duties and assignments

Police chaplains are asked to dedicate at least 10 hours per month to providing support to the SDPD with the understanding that they are available at all times as a resource. Responsibilities include the following:

- Responding to an OIS and other critical incidents
- Participating in next-of-kin notifications as a resource for officers and family members
- Serving as a support system for officers in crisis¹⁸⁴

Unlike any other help resources at the SDPD, police chaplains are all assigned to specific divisions. The Reverend Lowrimore, for instance, is responsible for the SDPD’s Western Division. “If something happens with someone in Western Division and I get a call, I go,” he said. While officers are encouraged to rotate among divisions every five years, police chaplains typically stay where they are assigned for long periods of time.

As a result of these assignments, chaplains often get to know personnel in their divisions on a personal level. Relationships of trust are established from hours spent in cars together during ride-alongs and the familiarity that develops from seeing someone day in and day out. Sometimes officers call police chaplains whom they know from their previous positions. “They might want to talk to their previous chaplain, and that’s fine,” the Reverend Lowrimore explained. “We want whatever is best for the officer.”

Building trust: The role of ride-alongs

As both the Reverend Price and the Reverend Lowrimore underscored, building trust takes time. A critical component of that effort for police chaplains at the SDPD has been participating in ride-alongs with officers in their divisions. “They help build rapport, and the more time that I spend with officers,

¹⁸⁴ SDPD, *Wellness Unit Operations Manual*, 16.

the more trust I build,” the Reverend Price explained. The Reverend Lowrimore echoed him, saying, “It’s all about building bridges, and we do it one officer at a time. When we’re on a ride-along, whatever they do, we do, and whatever call they go on, we go on. We’re out there in the blood and the guts and the vomit with them. It helps us understand them and it shows them that we’re committed to them.”

Focus Psychological Services

Focus is an independent group with whom the SDPD contracts to provide counseling services to department members and their loved ones free of charge. Focus is “law enforcement–oriented,” chief psychologist Jolee Brunton said. “We know the population, and we remove every barrier possible to get them through the door.” Focus also provides counseling services for San Diego Fire-Rescue workers, the San Diego State University Police Department, the University of California San Diego Police Department, and other fire and law enforcement agencies in San Diego County.

Services

Focus’s primary service is counseling, which can be related to any issues facing department members and their loved ones regardless of whether it is associated with police work. Focus also provides specialized training for department members as needed and participates in delivering wellness-related training with the Wellness Unit, including the wellness module of Advanced Officer Training and Effective Interactions training for new officers.¹⁸⁵ Focus teaches a five-hour block to new sergeants on topics of critical incident stress, suicide prevention, and recognition of stressful life and work events (for example injury, discipline, retirement, deployment). In addition, Focus provides consultation services for special teams and leads critical incident debriefings (which take the place of fitness-for-duty exams at the SDPD) for the department.

Staffing and training

Focus currently has nine psychologists, two of whom are former law enforcement officers who were recruited specifically because of their experience as officers. All Focus psychologists have developed an understanding of policing because of Focus’s onboarding protocol. “Most people don’t have an expertise in police psychology, so when I take people on, in their first year I have them do ride-alongs, witness debriefings, meet with families, and go to lineups until they feel comfortable in the position,” Dr. Brunton said.

¹⁸⁵ See Training section beginning on page 47 for more details about these trainings.

Breaking down barriers for officers to take advantage of services

As clinicians, Focus psychologists are bound by legal privilege. “We are very clear about our confidentiality policy,” Dr. Brunton said, “because if cops don’t think we protect confidentiality, they won’t use our services. We’re mandated reporters for certain things as medical professionals, but we are completely transparent with officers. The first day they come in, we discuss confidentiality and when we’ll report something.” Officers, she said, respond well when psychologists are forthright.

Focus psychologists are also flexible about where and when they will meet with department members. “I have people who don’t want to come through the door to our offices, so we’ll schedule them at a time that no one is in the office, or we’ll meet them off site, or do whatever we need to do to get them services,” Dr. Brunton explained. This includes making every effort to see department members within a day or two of hearing from them, she said, to make it more likely that they will keep their appointment.

Thinking creatively about communication has also proven successful in overcoming barriers to utilization. “I make myself available via text,” Dr. Brunton said. Focus has also seen an uptick in engagement through their website. “It’s amazing,” Dr. Brunton noted, “how many people will text or email even if they won’t call.”

Once I started giving out my cell number and telling officers that they could text me, our utilization increased dramatically. I get more texts than phone calls.

— Dr. Jolee Brunton, *Focus Psychological Services*

Last, she said that she emphasizes that Focus is not part of the SDPD. “It’s critical to draw the boundary with officers that we’re an external entity and that command staff don’t get access to our records and who uses the service.” The only information that is communicated to the department is the monthly number of hours of use.

Use

Use of services has increased significantly since the creation of the Wellness Unit, according to Dr. Brunton. “Since we’ve had the Wellness Day with new recruits and their family members,” she said, “the new recruits are much more likely to come in and use services.” In 2016, Focus dedicated 6,000 hours to providing services to SDPD members.

Anecdotally, associating with psychologists also seems to be less stigmatized in the department. “I’ve noticed a big increase in people actually making eye contact with me, talking to me, and talking about wellness since the unit was created,” Dr. Brunton said. “We’re working hard to normalize the experience

and say, ‘There’s nothing wrong with you, but this is a unique job with unique challenges and we’re here to help you do your job. If you’re a tennis player, why would you practice doing a bad backhand? Why not learn how to do it right?’”

What using wellness services looks like in practice: A scenario

Officer Brooks is struggling after the sudden death of her brother. She has noticed that it is more difficult for her to concentrate, and she is increasingly short-tempered with her colleagues and community members. She feels exhausted all of the time and has lost interest in the hobbies that used to occupy most of her free time, like hiking and camping.

Though Brooks joined the SDPD before the Wellness Unit was created, she learned about it through the police chaplain at her division, Wellness Unit presentations at roll call, and the monthly Wellness newsletter. She calls an officer in the Wellness Unit one day after work and asks if he is free to meet her at a coffee shop near her apartment. He drives over and they talk for two hours about the issues she is facing in the aftermath of her brother’s death.

The Wellness Unit officer helps Brooks make an appointment with Focus Psychological Services for the next day and offers to drive her there. Brooks declines, so instead the Wellness Unit officer calls her before her scheduled appointment time to ensure that she made it to the Focus office. He reiterates that she can call him at any time if she needs to talk and that he will call to check in on her later in the week. He does, and he also reaches out a month later on the anniversary of her brother’s death. Brooks and the Wellness Unit officer continue to communicate regularly via text, phone, and in person during the following year.

Alcohol/Substance Abuse Program (ASAP)

Among the specialized services that the SDPD offers is an Alcohol/Substance Abuse Program (ASAP). The primary goals of the ASAP are to help department members and their family members recover from substance abuse and, in so doing, to decrease the incidence of substance abuse overall at the SDPD. Deanna Dotta, a 911 dispatcher in the Wellness Unit, is also the SDPD’s ASAP counselor. Her duties include the following:

- Providing alcohol and substance abuse information, counseling, training, and direct assistance to management, employees, and family members
- Liaising with Focus, the municipal EAP, the Public Safety Fellowship (a 12-step program), other government agencies, and treatment centers and substance abuse counselors
- Assisting with the coordination of inpatient and outpatient treatment
- Providing internal presentations and articles on ASAP and substance abuse issues¹⁸⁶

¹⁸⁶ SDPD, *Wellness Unit Operations Manual*, 20.

“There are two [Alcoholics Anonymous] groups in the county that are for first responders only,” Dotta explained. She is also expanding the range of providers available to SDPD department members. “I’ve been building a network with treatment facilities in the greater southern California area beyond San Diego, because officers are often reluctant to go to the local treatment centers,” she said. “There is a real possibility they’ll run into people they may have arrested. Also, a lot of places don’t have the training and expertise to understand police work and the types of stressors that officers are under. I’ve also looked for facilities that provide a level of extra confidentiality, and that understand police officers’ concerns about that.”

In order to facilitate department members’ treatment for substance abuse, the SDPD allows employees to donate their leave time to others anonymously. “We have people donate their hours for catastrophic leave without knowing who they’re donating it to,” explained retired Assistant Chief Creighton. “That is important because it helps people get the treatment they need, and it shows them that the rest of the department cares.”

Recruitment and training

The SDPD’s ASAP counselors have all completed training at the Navy Drug and Alcohol Counseling School. Dotta graduated from the program in 2006.

The SDPD makes specific provisions regarding recruiting those in recovery to serve as an ASAP counselor. Policy states that a counselor may be someone who has not had an addiction problem¹⁸⁷ or someone who is a recovering alcoholic with at least three years of continuous sobriety and who attends the Public Safety Fellowship or other 12-step program.¹⁸⁸

Promising practices: Help services and programs

Peer support

- When creating a peer support program, start small if resource constraints are an issue—the important thing is to start providing the service. Having a formal system for providing peer support and ensuring that helpful services are delivered are critical for department members’ wellness.
- Designate someone to be in charge of overseeing peer support activities to ensure that peer support is helpful and is offered according to protocols.
- Wellness services supervisor(s) should interview all applicants to ensure they are suitable for the role.
- Peer supporters should be required to complete formal peer support training. This standardizes the delivery of peer support services and ensures that the services are helpful to officers.

¹⁸⁷ SDPD, *Wellness Unit Operations Manual*, 20.

¹⁸⁸ SDPD, *Wellness Unit Operations Manual*, 20.

- Have a mechanism in place that allows peer supporters to leave the program at any time (for example, if they can no longer dedicate time to participating).
- Establish protocols for removing peer supporters if there are performance issues.
- Provide peer support services for civilian staff in addition to sworn staff. This includes inviting dispatchers to critical incident debriefings.
- Create a database that includes information about peer supporters, including the topics (such as divorce or death in the family) with which they have experience, so that department members can seek out a peer supporter with a first-hand understanding of their particular needs.

Peer support specific to an OIS or in-custody death

- When recruiting for OIS peer support, look for maturity, credibility, and active listening skills.
- Require a qualifying incident for OIS peer support officers.
- If possible, have a combination of uniformed officers and investigators as peer supporters to provide a wide range of relatable experience.
- Have a mentoring system in place for OIS peer supporters. This includes mentoring in the field: Senior, experienced peer supporters should show up on scene to help new OIS peer support officers fulfill their duties.
- OIS peer supporters should be attentive to officers' basic needs—getting them water and food if appropriate, for example.
- Communicate to the officers involved what the investigation and debrief process will look like in practice (i.e., what their days will be like immediately following and potentially for months) so that they are prepared.
- Follow up with officers after they have slept and have had an opportunity to decompress.
- If the officers involved have existing relationships of trust with a particular OIS peer supporter who is not the first OIS peer supporter to arrive on a scene, call that peer supporter so that he or she can take over.
- OIS peer supporters should follow up with the officers involved in an incident on a regular schedule and use multiple methods (such as phone calls, text messages, and in-person meetings) to ensure adequate outreach and support is conveyed to the officers.

Chaplains

- When recruiting for a police chaplain program, look for humility, credibility, and experience.
- Police chaplains should not proselytize.
- Police chaplains should go on ride-alongs to get to know the officers and to build an understanding of their jobs and the stresses and challenges they face.

Psychological services

- Use multiple forms of communication—including technologies like text messaging and email or online appointment request forms—for making appointments and engaging with department members. This has the potential to dramatically increase use of services.
- Many psychologists do not have an expertise in police psychology. Build psychologists' understanding by directing them to go on police ride-alongs, witness critical incident debriefings, attend lineups, etc. as part of their initial orientation to working with police employees.
- If resources permit, try to ensure that officers seeking psychological wellness services do not have to wait for a significant period of time to get an appointment.
- Be absolutely clear about confidentiality rules.
- Be flexible in where and when you will meet with officers.

Alcohol/Substance Abuse Program

- Designate a qualified department member to serve as the primary coordinator or liaison for substance abuse–related programming and outreach.
- Develop a network of local substance abuse treatment providers, looking specifically for providers who specialize in helping first responders.
- Develop a mechanism for members of the department to donate their leave time, if they would like, to other department members who need inpatient treatment. This system should maintain the anonymity of the person receiving treatment.

Training: Building a Culture of Wellness

One of the core duties of the Wellness Unit has been developing and implementing a training program that can embed wellness at all levels of the police department.

Reaching new officers

The heart of training for wellness is reaching new officers early and often to normalize wellness services. Normalizing means trying to ensure that SDPD officers and other employees see nothing unusual in asking for these services, just as they would apply for any other benefits of employment.

The SDPD Wellness Unit tries to achieve normalization by

- distributing the Wellness Unit Employee Resources Brochure to new officers the day before they start the academy;
- delivering training in the academy on Emotional Survival;
- facilitating a Wellness Day—officially titled Psychological Preparedness Training for New Officers—immediately after graduation from the academy, which includes programming for officers and their family members;
- delivering a two-day training on Effective Interactions immediately after field training.

Engaging with senior staff members

New members of the police department are not the sole focus of wellness-related training. To reach senior officials, SDPD has

- made a wellness module part of mandatory advanced officer training;
- made awareness of wellness issues a requirement for promotion (e.g., members of the department must read and be tested on Emotional Survival for Law Enforcement to be promoted to lieutenant, sergeant, detective, or senior officer);
- made a wellness module part of command training.

The Wellness Unit also provides specialized training and coaching to supervisors on wellness-related issues so that, as the primary caregivers for the employees who report to them, they are able to effectively address wellness concerns in their own commands. This includes leadership training for civilian supervisors, developed and delivered in mid-2017, said Assistant Chief Albrektsen.

Responding to emerging issues

One of the defining features of the SDPD's wellness training and educational program is its adaptability. Training is modified as needed—sometimes in the moment during a scenario-based exercise—in order to ensure that it is effective and provides employees with the greatest benefit. The Wellness Unit also offers free-standing educational programming, such as seminars on nutrition or financial planning, as needs are identified.

Emotional Survival Training: (four-hour training delivered in the academy)¹⁸⁹

The Wellness Unit created the SDPD's Emotional Survival training based on the work of Dr. Kevin Gilmartin.¹⁹⁰ The goal of Emotional Survival training is to equip new officers with tools to recognize and manage the unique stressors that are associated with a career in law enforcement. The Wellness Unit and the SDPD's help services providers deliver the training in the academy. It is offered near the end of officers' time in the academy so that they are more aware of law enforcement culture and can relate more directly to the training material.

Topics

In the two-hour block of Emotional Survival training that PERF observed, which was the second of the two blocks into which the training was split, the curriculum emphasized the need to manage stress, cynicism, anger, and burnout. The training began with a discussion of Dr. Gilmartin's book, *Emotional Survival for Law Enforcement* and a discussion among the new officers about how they have changed since entering the academy. Recruits were asked to identify different coping strategies such as engaging in physical activity, talking with friends and family, investing in hobbies, and using the resources of the Wellness Unit. The instructor also discussed how hypervigilance and repeated exposure to critical incidents can induce symptoms of PTSD. Warning signs of stress such as social isolation, infidelity, and procrastination in off-duty decision-making were also presented.

The training also addressed the leading causes of death among police officers, including heart disease and suicide. The importance of physical fitness and regular exercise to mitigate these risks is stressed. The training concluded with the recruits dividing into small groups to discuss the symptoms and long-term effects of stress and anger, followed by suggested coping strategies.

¹⁸⁹ During the period of PERF's observation of the SDPD's wellness program, the Emotional Survival training was four hours in total and recruits were not required to read Dr. Gilmartin's book. That has now changed: The training is six hours in total, and recruits are required to read the book and be tested on it.

¹⁹⁰ Dr. Gilmartin is the author of *Emotional Survival for Law Enforcement: A Guide for Law Enforcement Officers and Their Families*.

Format

This two-hour block of Emotional Survival training was interactive and centered on group discussions. The instructor used a conversational tone, shared her own “war stories” from patrol, and asked questions to elicit participation from the class.

Psychological Preparedness Training for New Officers: (one full day immediately after graduation from the academy)

Since we’ve had the Wellness Day, new recruits are much more likely to come in and use psychological services.

— *Dr. Jolee Brunton, Focus Psychological Services*

The Wellness Unit began offering its 10-hour Psychological Preparedness Training for New Officers, known informally as its Wellness Day, in 2014. The goal of the Wellness Day, which includes officers and their families,¹⁹¹ is to set realistic expectations about the emotional impact that police work may have on officers¹⁹² and to underscore the importance of wellness and utilizing wellness services to long-term career success. The Wellness Day gives help service providers an opportunity to reach officers’ family members, familiarize them with the wellness services the department offers, and establish direct lines of communication with officers’ loved ones.

Topics and format

The Wellness Day is divided into two parts.¹⁹³ During the first half of the day, officers and their families are separated. They are brought together in one large group for the second half of the day. As Sergeant Rivera explained, the day is split like this for a few reasons. “For officers it’s a 10-hour training day and a work day, but that’s too long for family members to commit to,” he said. “Also, there are certain things that we discuss with our officers and some language that our presenters use when talking about the trauma they’ve experienced and their utilization of services in a way that we might have to tone down if

¹⁹¹ Specifically, family members older than 15 years are encouraged to attend.

¹⁹² SDPD, *Wellness Unit Operations Manual*, 5.

¹⁹³ See appendix G for sample agenda.

family members were present. When we bring everyone together, we focus on that connection between officer and family, so we can accomplish everything we need to with the families in half a day.”

Focus facilitates the training, which includes presentations from help services providers (such as the Wellness Unit and police chaplains), stories from members of the department who have experienced significant trauma or personal crises¹⁹⁴ and who used help resources, and stories from the families of current department members.

Effective Interactions training: (two full days after field training)

The longest single block of training that the Wellness Unit provides, lasting two days, is Effective Interactions training, which is mandatory for all new officers. The goal of the training is to help officers develop their emotional intelligence to make them more successful in their work and better able to manage the stressors associated with policing.

The Wellness Unit developed the initial iteration of its Effective Interactions training in partnership with Dr. Daniel Blumberg, a police psychologist who is developing strategies for agencies to prevent and respond to police misconduct. Training programs such as the SDPD’s are a critical part of prevention efforts and give officers tools to be successful.

The Wellness Unit offers Effective Interactions training immediately after officers complete their field training. This timing is intentional, explained Sergeant Rivera. “We wanted them to have some experience before doing this training,” he said, “so that they didn’t consider it an extension of the academy and so they can apply some of their experiences and stories to the training to make it more real for them.”

Facilitators

The Wellness Unit facilitates Effective Interactions training in partnership with Focus and senior members of the department who are involved in academy training.

Day one: Topics and format

During the Effective Interactions training that PERF observed, the first day of training was centered on a discussion of emotional intelligence and included presentations, videos, group discussions (large and small), and breakout exercises. Facilitators arranged the room in clusters rather than classroom style to encourage discussion and participation.

¹⁹⁴ SDPD, *Changing Organizational Culture*.

Anonymous polling: Emotional intelligence

The day began with anonymous, real-time polling of the new officers: Questions were posed on a screen at the front of the room using an online polling program, officers responded using their phones, and the results were captured and displayed. The facilitator put the following questions to the class, asking them to identify a percent range in which their skills fall:

- What is your proficiency with firearms today?
- What is your proficiency with the Emergency Vehicle Operator Course (EVOC)?
- What is your proficiency in defensive tactics?
- What is your proficiency in emotional intelligence?

While most officers rated their skill levels for the first three questions as high, they rated themselves lower in emotional intelligence. This was expected; the purpose of this exercise was to demonstrate to new officers that emotional intelligence is a skill that they need to develop in order to be successful police officers. As one facilitator said, “We don’t have a qualification phase to test your emotional intelligence. Your qualifications phase for this is when you’re on the street every day interacting with the community.”

Including a discussion of the science of emotional response, said retired Assistant Chief Sarah Creighton, helps officers to understand why it is important. It is not unusual for people to respond badly to stressful situations. “We need officers to understand that humans are wired in a certain way and how to work with it,” she explained. “The science gives us permission to not feel badly, but rather to understand the ‘why’ and how to work past it.”

The remainder of the morning on the first day of training was split among

- presentations on topics such as the core components of emotional intelligence; the science of emotional response to stressful situations; and the challenges that police face in engaging with the community;
- videos of officers engaging with community members (some positive, others negative), followed by facilitated small-group discussions of the videos and then a debriefing with the entire training class;
- group scenarios in which the class acted out positive and negative versions of the same community interactions (such as a traffic stop) and discussed the outcomes.

The latter half of the first day was dedicated to interactive breakout sessions that demonstrated the effects of stress, exhaustion, and hypervigilance on the mind and body. Then, students were presented with tools to mitigate these effects in the course of their duties. The class was divided into five groups, which rotated among stations at which facilitators discussed one of five topics:

1. Self-awareness
2. Self-management
3. Social awareness
4. Relationship management
5. Communication with peers

At the self-management station, for example, the facilitator asked the officers to do 20 burpees (a strenuous exercise routine) and then attempt to thread a needle. The purpose of this exercise was to demonstrate the effect that physical exertion and adrenaline have on fine motor skills, and how fitness and stress-management techniques like tactical breathing can improve officers' performance in the field.

Day two: Topics and format

The second day of Effective Interactions training was dedicated entirely to five interactive scenarios, performed by community volunteers and facilitated by sworn SDPD members. Some of these SDPD members volunteer; others were recruited by the Wellness Unit. "What we look for is someone who has a history of community engagement and outreach," said Sergeant Rivera. "We also want people who have teaching experience."

Community volunteers

The Wellness Unit recruited its community volunteers from a variety of sources, including the Civilian Complaint Review Board; clergy members; and CRISIS, a civilian crisis response team. This community involvement is critical because it gives community members an opportunity to contribute to and learn more about their police department while giving new officers a chance to engage with community members in an educational setting.

Scenarios

The class was divided into five groups, which rotated among the following five scenarios:¹⁹⁵

1. Responding to a large party
2. Parking in the red zone outside a 7-11 to take a break and being confronted by a community member
3. Responding to a disturbance call involving two community members
4. Stopping a jogger running late at night in an area where car break-ins have been reported
5. A traffic stop

Every officer (or pair of officers, depending on the scenario) went through each exercise, one by one. The group members who had not yet completed the scenario were kept out of sight and hearing so that they were not able to prepare for the scenario before going through it themselves. Officers were told not to talk about the scenarios with one another on their breaks.

After each officer completed the scenario, the community members shared their thoughts about the interaction, and the facilitators provided constructive feedback. Officers who had completed the scenario then remained nearby to observe the other members of their group and learn from the feedback that they received as well.

While the scenarios were in progress, the Wellness Unit sergeant rotated among them, observing and sometimes modifying the scenarios to provide the greatest learning opportunity for officers. (These modifications might include asking a community member to be more confrontational, for example, or changing the facts of a scenario to explore different responses.) Floating among scenarios also afforded the Wellness Unit sergeant the opportunity to observe the new officers and identify and address any problematic behaviors.

Advanced Officer Training (AOT)

In addition to its training for new officers, the Wellness Unit also delivers a half-day wellness module during the department's week-long Advanced Officer Training (AOT). The wellness module covers the following topics:

- Leadership
- Police suicide statistics
- The importance of maintaining a balanced life
- Coping skills and techniques

¹⁹⁵ See appendix H for the scenarios.

- Retirement planning
- Anger management
- Substance abuse awareness and prevention

It can be a tough group but humor is really helpful in getting through to people. You reach people you never thought you would. We're often approached afterwards by people who ask us to check in on their friends and colleagues.

— *Sergeant Ed Zwibel, San Diego Police Department*

Videos were integrated into the module that PERF observed, including a video about the dangers that alcohol can pose to an officer's career and how it is incumbent upon members of the department to ensure that colleagues do not put themselves and others in danger because of alcohol. The video was shot and edited by SDPD members with SDPD members acting roles in it.

Interactive exercises were also an important component of the training. For example, Dr. David Bond, a former police captain and current police psychologist with Focus, asked the class to write down what their ideal retirement looked like and who they would like to have with them in their retirement. Then he collected the responses and read them aloud, using them to launch a conversation about what the officers could do in the present to achieve their retirement goals and the role that wellness plays in securing their future.

Educational programming tailored to emerging issues

The Wellness Unit responds to emerging trends at the SDPD, creating programming as needed to fill gaps and address employees' concerns.

Series for Growth: Training for civilian supervisors

One such program, created in 2017, is the Series for Growth, which is intended for civilian supervisors. "I discovered that there was a lot of conflict in the ranks on our civilian side," Assistant Chief Albrektsen said. "When we examined it in detail, we believed supervisory mentorship and training could be beneficial."

To address this, Assistant Chief Albrektsen and the Wellness Unit developed a series of classes designed to improve civilian managers' communication and leadership skills. "We've put together a management academy for them, which covers everything from management theory to the practical conflicts that they're encountering," Albrektsen said. Attendance is voluntary, and the class is held in the middle of the day to make it as easy as possible for department members to attend.

According to Dotta, the benefits of the Series for Growth extend beyond skill building. “It shows civilians they’re a valued part of this organization,” she explained. “It shows that the SDPD cares about all of us.”

Stand-alone workshops

In addition to developing new, long-term training programs, the Wellness Unit also organizes stand-alone educational opportunities. The topics of these workshops are suggested by department members or are identified by the Wellness Unit in response to emerging trends. Past workshops have discussed financial planning, retirement, healthy eating, and sleep hygiene. The Wellness Unit identifies outside experts to make presentations and publicizes the workshops through the department listserv and the Wellness newsletter.

In identifying locations for these meetings, retired Assistant Chief Creighton said, the Wellness Unit often needs to think creatively. “We don’t have a budget for renting facilities,” she said, “so if it’s a big training, we ask our community partners if they have space we can use for free. Churches are great, for example.”

Promising practices: Training to build a culture of wellness

- Draw upon vetted external experts, such as academics and psychologists, to develop wellness-related training.
- Include an explanation of the science of emotional wellness and psychology in this training.
- Develop a plan for reaching new officers immediately with wellness-related training, which may include the following activities:
 - Providing them with information about wellness services before they begin the academy
 - Incorporating a wellness module into academy training
 - Delivering a wellness training class after the academy
- Involve officers’ loved ones in wellness training and awareness-building activities. For example, host a family wellness day after officers graduate from the academy to familiarize officers’ loved ones with available wellness services and to normalize the use of wellness services.
- Use scenarios, discussions, exercises, and other interactive techniques in delivering wellness training.
- Include a wellness module in advanced officer training.

- Tie wellness to career advancement by making awareness of wellness issues a requirement for promotion—e.g., members of the department must read and be tested on *Emotional Survival for Law Enforcement* to be promoted to any supervisory position.
- Create educational programming such as stand-alone workshops or ongoing brown-bag round tables that addresses emerging issues in the department. Examples of topics include sleep hygiene, leadership skills, or financial planning. Identify and involve outside experts to deliver presentations during these workshops as appropriate.
- Think creatively when looking for meeting spaces in which to hold training and educational programming at low or no cost. For instance, consider reaching out to partners such as faith-based and community organizations to see if they have available facilities.

Conclusion

Unaddressed physical and mental health issues can take a toll on officers both on and off duty. As a result, law enforcement agencies should proactively promote officers' wellness through innovative programming. Because personal wellness is multifaceted, promoting wellness requires an inclusive and holistic approach. Addressing wellness is not limited to simply improving physical fitness or offering psychological counseling services. Although these are crucial components of wellness, agency leaders should consider other important topics such as promoting financial health, improving nutrition, and extending support to family members.

Implementing a wellness unit or developing wellness services is not a one-size-fits-all endeavor. Agencies must tailor their wellness initiatives to meet their specific needs. Ask department members what their wellness-related concerns and issues are and build programming around those topics. Also, engage with external partners to expand expertise and consolidate resources. Developing partnerships with academics and other wellness experts ensures that wellness programming is informed by best practices. Collaborating with help service providers and representatives from other law enforcement agencies also allows for the sharing of resources and access to wellness services across agencies.

One of the most important lessons from the case study of the SDPD's wellness initiative is that wellness programs only work when the members of the department are invested in them. "The biggest single piece of advice that I have for other agencies is that people want to feel like they're co-creating the wellness program," said retired Assistant Chief Creighton. An SDPD officer expressed a similar sentiment, saying, "This is a program for officers, and it's officers who need to sell it. I don't need my captain to sell me on it, I need my partner to."

Achieving a high level of acceptance of wellness programs requires time, patience, and persistence. "It will take a long time, even if you have great ideas, because you have to break down the stigma that's associated with seeking help," said Sergeant Rivera. Normalizing wellness within the agency will reduce the stigma associated with seeking help. Wellness providers and programs should be visible in the agency to encourage officer engagement and increase the use of wellness services. Build awareness through active internal outreach. Promote wellness initiatives by presenting at roll call, offering training and education sessions, and producing written materials (e.g., newsletters, brochures, and written announcements) to publicize services and events.

When conducting outreach to encourage use of the wellness resources, agencies must remember that confidentiality is paramount in establishing trust and legitimacy. Building a reputation of trust takes time and is done by respecting confidentiality. A clear confidentiality policy should be publicized and adhered to absolutely. In addition, internal and external wellness providers should explain confidentiality guidelines to department employees prior to offering services.

The results of an internal SDPD survey issued to department members two years after the Wellness Unit's inception demonstrate that these strategies work. Not only did a majority of respondents say they had heard about the services offered but 70 percent also felt that the stigma associated with asking for help was decreasing, and 79 percent said that they would feel comfortable walking into the Wellness Center regardless of the reason for their visit. Focus psychological services also reported a significant increase in the use of counseling services since the creation of the unit. These outcomes reflect a broader culture change facilitated by the Wellness Unit's devotion to normalizing wellness and destigmatizing seeking help.

Another important takeaway for agencies just getting started is that to effectively promote the health of department members, wellness must be embedded within the culture of an agency. An agency-wide commitment to wellness relies on the support of every employee. As such, wellness services and resources should be extended to all department personnel. Exposure to trauma is not limited to sworn employees—civilian employees, such as dispatchers and crime scene technicians, encounter unique stressors and should have access to wellness resources and support systems.

Finally, according to the Reverend Lowrimore, agencies simply need to get started. "People procrastinate, but agencies should start moving on wellness, because officers need someone to talk to and to offer them help," he said. "And there are people like us in every jurisdiction who will help. You just need to ask."

Summary of Promising Practices

Building and sustaining a wellness program

First steps

- Conduct a department-wide survey to ask employees what they need and what their primary wellness concerns are. Use that information to guide the development of wellness programming and services.
- Have a clear, written confidentiality policy, communicate it to department members, and adhere to it. Ensure that reporting requirements and exceptions are understood, such as information indicating that an employee may be a danger to himself or herself or to others or that domestic violence or child abuse may be occurring. Some providers, such as clinicians, may be bound by more stringent confidentiality rules than police department employees. Ensure that employees understand these differences and understand the confidentiality rules that bind each category of help services providers.
- Locate your wellness office or center in headquarters or another high-visibility location to reduce any stigma that employees may feel about seeking help.
- Your department's help resources providers should be in close communication with one another and should work together to deliver wellness services. This includes
 - having a common mission and messaging so that they are working together toward a shared wellness goal for the overall good of the department;
 - communicating with each other to coordinate responses to critical incidents.

Outreach and engagement

- Make wellness services visible on your organizational chart to demonstrate their importance.
- Go to officer roll calls to explain wellness services.
- Develop materials to publicize the services and how to access them, including
 - brochures;
 - newsletters;
 - posters.

Recruiting

- When recruiting people for wellness related programs, look for interpersonal skills, not necessarily rank. Wellness unit staff members should be
 - compassionate;
 - nonjudgmental;
 - experienced in the organization;
 - trustworthy;
 - respected by colleagues.

Training

- Mandate that help services providers receive formal training—for example, POST-certified peer support training—to ensure that they have the right tools to be successful in supporting their colleagues.
- Provide opportunities for help services components to train together. This improves team building and ensures that all providers share common messaging and goals.

Operations

- Do not neglect civilian employees. Include them in wellness services as providers and as recipients.
- Wellness providers need to be available 24/7. Crises are not confined to business hours.
- In addition to serving as a resource during regular business hours, wellness services providers should be able to meet with employees seeking help at the times and locations that work best for them.
- To accommodate off-hour requests for assistance, develop an on-call protocol for the wellness services providers and advertise to department employees.
- Assignments for wellness providers should be made based on relationships and trust. Often, whether at the scene of a critical incident or when someone walks into the Wellness Center, an employee wishes to talk to a specific help services provider.
- Establish a policy that allows wellness services providers to deploy help services during or immediately after a crisis without needing to wait for a request from command staff.
- Wellness services providers should check in regularly with those who use their services and follow up on anniversary dates as well.

Maintaining the wellness of help services providers

- It is important to ensure that employees who provide wellness services are themselves in good physical and emotional health. Be aware that assignment to a wellness unit can be stressful, and be mindful of the wellness of help service providers. Adopt policies and protocols to promote their physical and emotional health. Examples include
 - having mandatory psychological service check-ins;
 - allowing wellness workers to exercise while on duty.
- Have a protocol for rotating wellness service providers out of help services roles to prevent burnout. This might include one (or both) of the following:
 - A policy limiting the amount of time that someone can spend in a wellness-related role
 - A form that wellness service providers can fill out and submit without penalty asking to be relieved of wellness-related duties

Metrics for success

- Develop a mechanism for tracking the use of help services, such as the monthly recap report that the SDPD's Wellness Unit compiles every month based on recap sheets (see appendix E) completed by each help services provider.
- Survey the department after wellness services have been in place for a year or more to determine their levels of visibility, employee trust, and use. Modify your approach as needed based on results.

Sustainability planning

- Make it clear that a successful wellness program is good for the financial health of your law enforcement agency—i.e., keeping officers physically and emotionally healthy is a cost-saving measure in the long term—to secure support for wellness programming from city government.

External partnerships

- Draw upon the expertise of people outside of your organization. This might include
 - a nearby law enforcement agency that already has wellness services;
 - academics with experience in wellness-related topics;
 - police psychologists.
- Partner with mental health providers, academics, and other outside experts to refine wellness program methods and initiatives and provide needed services to department members.

Help services and programs

Peer support

- When creating a peer support program, start small if resource constraints are an issue—the important thing is to start providing the service. Having a formal system for providing peer support and ensuring that helpful services are delivered are critical for department members' wellness.
- Designate someone to be in charge of overseeing peer support activities to ensure that peer support is helpful and is offered according to protocols.
- Wellness services supervisor(s) should interview all applicants to ensure they are suitable for the role.
- Peer supporters should be required to complete formal peer support training. This standardizes the delivery of peer support services and ensures that the services are helpful to officers.
- Have a mechanism in place that allows peer supporters to leave the program at any time (for example, if they can no longer dedicate time to participating).
- Establish protocols for removing peer supporters if there are performance issues.
- Provide peer support services for civilian staff in addition to sworn staff. This includes inviting dispatchers to critical incident debriefings.
- Create a database that includes information about peer supporters, including the topics (such as divorce or death in the family) with which they have experience, so that department members can seek out a peer supporter with a first-hand understanding of their particular needs.

Peer support specific to an OIS or in-custody death

- When recruiting for OIS peer support, look for maturity, credibility, and active listening skills.
- Require a qualifying incident for OIS peer support officers.
- If possible, have a combination of uniformed officers and investigators as peer supporters to provide a wide range of relatable experience.
- Have a mentoring system in place for OIS peer supporters. This includes mentoring in the field: Senior, experienced peer supporters should show up on scene to help new OIS peer support officers fulfill their duties.
- OIS peer supporters should be attentive to officers' basic needs—getting them water and food if appropriate, for example.

- Communicate to the officer involved what the investigation and debrief process will look like in practice (i.e., what their days will be like immediately following and potentially for months) so that they are prepared.
- Follow up with officers after they have slept and have had an opportunity to decompress.
- If the officer involved has an existing relationship of trust with a particular OIS peer supporter who is not the first OIS peer supporter to arrive on a scene, call that peer supporter so that he or she can take over.
- OIS peer supporters should follow up with the officers involved in an incident on a regular schedule and use multiple methods (such as phone calls, text messages, and in-person meetings) to ensure adequate outreach and support is conveyed to the officer.

Chaplains

- When recruiting for a police chaplain program, look for humility, credibility, and experience.
- Police chaplains should not proselytize.
- Police chaplains should go on ride-alongs to get to know the officers and to build an understanding of their jobs and the stresses and challenges they face.

Psychological services

- Use multiple forms of communication—including technologies like text messaging and email or online appointment request forms—for making appointments and engaging with department members. This has the potential to dramatically increase use of services.
- Many psychologists do not have an expertise in police psychology. Build psychologists' understanding by directing them to go on police ride-alongs, witness critical incident debriefings, attend lineups, etc. as part of their initial orientation to working with police employees.
- If resources permit, try to ensure that officers seeking psychological wellness services do not have to wait for a significant period of time to get an appointment.
- Be absolutely clear about confidentiality rules.
- Be flexible in where and when you will meet with officers.

Alcohol/Substance Abuse Program

- Designate a qualified department member to serve as the primary coordinator or liaison for substance abuse–related programming and outreach.
- Develop a network of local substance abuse treatment providers, looking specifically for providers who specialize in helping first responders.
- Develop a mechanism for members of the department to donate their leave time, if they would like, to other department members who need inpatient treatment. This system should maintain the anonymity of the person receiving treatment.

Training to build a culture of wellness

- Draw upon vetted external experts, such as academics and psychologists, to develop wellness-related training.
- Include an explanation of the science of emotional wellness and psychology in this training.
- Develop a plan for reaching new officers immediately with wellness-related training, which may include the following activities:
 - Providing them with information about wellness services before they begin the academy
 - Incorporating a wellness module into academy training
 - Delivering a wellness training class after the academy
- Involve officers' loved ones in wellness training and awareness-building activities. For example, host a family wellness day after officers graduate from the academy to familiarize officers' loved ones with available wellness services and to normalize the use of wellness services.
- Use scenarios, discussions, exercises, and other interactive techniques in delivering wellness training.
- Include a wellness module in advanced officer training.
- Tie wellness to career advancement by making awareness of wellness issues a requirement for promotion—e.g., members of the department must read and be tested on *Emotional Survival for Law Enforcement* to be promoted to any supervisory position.
- Create educational programming such as stand-alone workshops or ongoing brown-bag round tables that addresses emerging issues in the department. Examples of topics include sleep hygiene, leadership skills, or financial planning. Identify and involve outside experts to deliver presentations during these workshops as appropriate.
- Think creatively when looking for meeting spaces in which to hold training and educational programming at low or no cost. For instance, consider reaching out to partners such as faith-based and community organizations to see if they have available facilities.

Appendix A. 2011 Needs Assessment Survey

NOTE: This appendix has been slightly modified to conform to COPS Office publishing standards.

This is the survey that the SDPD's Wellness Unit sent to the entire department in 2011 to determine department members' needs and concerns. The Wellness Unit used this information to craft its mission and goals.

Survey letter

Dear SDPD member:

As you are probably aware, the department recently formed a Wellness Unit. The unit's primary mission is to assist you, the employee. It is our belief that by removing obstacles from your work environment and providing resources to help with preoccupying personal issues, you will better serve yourself, your coworkers, and your family. We recognize that we cannot fix everything, but we are committed to providing feedback to management (City and internal) in the interest of making any changes we can and to provide resources for you for any personal issues that you may want to address. As you are aware, several effective resources have been in place for a long time. In the survey we ask that you rate any services you have used and that you answer questions about your experiences at work and at home that will help us identify services that should be made available. It is our hope to add services as indicated by your responses. We recognize that anything we build should be based on the needs and desires of our employees and volunteers for maximum effectiveness and utilization.

Your participation in this survey is completely voluntary and your individual responses will be held strictly confidential. Your responses will not be traced to you. For those of you completing the survey online, simply submit your completed survey as instructed. To ensure confidentiality for those submitting a hard copy, the Police Officers Association (POA) has provided their ballot bags and will have a volunteer pick them up and deliver the contents to us in mass so that no division or unit will be specifically identified. Demographic information captured on the survey is only intended to assist us in tailoring services to a particular population (i.e., sworn vs. civilian) and may be used to assist University of California San Diego (UCSD) Medical School as pilot data for a future study on law enforcement wellness.

The POA, Local 127, and Municipal Employees Association (MEA) fully support the wellness effort in the police department and have been consulted on the survey and other aspects of the program. A member of each organization will be represented on our advisory board.

If you have any questions about the survey, please feel free to call the Wellness Unit.

Survey questions

- What personal issues, if any, present a challenge to your general wellness?
 - Finances
 - Controllable health
 - Marital/relationship
 - Time management
 - Care of family/parents
 - Chronic health issues
 - Children
 - Other
- Rate the level of challenge the following job related issues have on your general wellness (1=Not a challenge; 2=Rarely; 3=Occasionally; 4=Significant; 5=Overwhelming):
 - Benefit changes
 - Underappreciated
 - Stress
 - Ignored
 - Layoffs
 - Exposure
 - Wasteful practice
 - Supervisor pressure
 - Turn off work
 - Physical dangers
 - Timelines
 - Other
- Rate the level of interference the following personal issues have had on your ability to focus on your job (1=Not an interference; 2=Rarely; 3=Occasionally; 4=Significant; 5=Overwhelming):
 - Financial
 - Divorce
 - Anger
 - Depression

- Alcohol
- Domestic violence
- Drug use
- Suicide
- Other
- Rate the following personal issues that interfere/or have interfered with your immediate coworkers' ability to focus on their job (1=Not an interference; 2=Rarely; 3=Occasionally; 4=Significant; 5=Overwhelming):
 - Financial
 - Divorce
 - Anger
 - Depression
 - Alcohol
 - Domestic violence
 - Drug use
 - Suicide
 - Other
- What coping mechanisms do you regularly rely on when dealing with stress (circle all that apply)?
 - Exercise/sports
 - Family
 - Vacations
 - Hobbies
 - Friends
 - Faith
 - Shopping
 - Self-medication
 - Meditation
 - Counseling
 - Extreme sports

- Gambling
- Group programs
- Other
- Do you have any of the following?
 - Chronic back pain
 - Sleep disorder
 - High blood pressure
 - Digestive problems
 - Chronic headaches
 - Obesity
 - Frequent colds/flu
 - Diabetes
 - Ulcers
 - Heart disease
- Would you participate in any of the following programs or support groups if they were offered?
 - Incentive fitness
 - Incentive wellness
 - Retirement planning
 - Rec sports league
 - Health fairs
 - Faith-based programs
 - Spousal support
 - Support groups
 - Smoking [cessation]
 - Other

Appendix B. Wellness Unit Confidentiality Policy

NOTE: This appendix has been slightly modified to conform to COPS Office publishing standards.

The acceptance and success of the San Diego Police Department's Wellness Unit will be determined, in part, by observance of confidentiality. It is imperative that the strictest confidentiality of all information learned about an individual be maintained, within the guidelines of the program.

The policy of the San Diego Police Department Wellness Unit is to maintain confidentiality. Communication between Wellness Unit personnel and a peer is considered confidential except for matters that involve the following:

The employee is a

- danger to oneself;
- danger to others;
- suspected child abuse;
- domestic violence;
- factual elder abuse.

The following issues should be reported to the Wellness Unit commanding officer:

- Narcotics offenses (e.g., sales, transportation, cultivation, or manufacturing)
- Felonies (crimes against persons)
- Felonies committed on duty
- When a peer requests, in writing, the information be divulged
- Matters that would jeopardize the safety of the public or other officers

Personnel should keep in mind that communication between Wellness Unit personnel and employees is not privileged conversation under the law, regardless of departmental policy, because peers are not licensed mental health professionals. As a result, courts may require disclosure of this information.

Appendix C. Wellness Unit Employee Resources Brochure

The following pages contain the Wellness Unit Employee Resources brochure.

OIS PEER SUPPORT

Phil Bozarth
 Mark Brenner
 Michael Chinn
 Anthony Creazzo
 Blaine Ferguson
 Linda Griffin
 Chappie Hunter
 Quinton Kawahara
 Chris Leahy
 Brian Lenahan
 Nicholas Nguyen
 Franklin White

Andres Ruiz
 Tristan Schmotlach
 Steve Schnick
 Michael Shiraishi
 Jeff Sterling
 Mark Zdumich
 Patrick Hall
 Nestor Hernandez
 Chuck Marciniak
 Kerry Mensior
 Kelly Stewart
 John Thompson

Todd Turner
 Chris Velovich
 Terrance Bryan
 Jeff Gross
 Robert Heims
 Kellen Jackson
 J.R. Pearson
 Arthur Scott
 John Sullivan
 Nathan Whann
 Travis Whipple
 Jared Wilson

PEER SUPPORT

SWORN

Bernie Colon
 Geoffrey Burr
 Desiree Spurlock
 Kelly Stinnette
 Anthony Dupree
 Richard Hinzo
 Mike Miranda
 Maria Humes
 Kenneth Impellizeri
 Edward Kaszucki
 Robert Korbecki
 Andrew Korenkov
 Lawrence Cahill
 Jonathan Lowe
 Michael Brown
 Chris Luth
 Corissa Pich
 Cory Gilmore

Andrea Myers
 Kimberly Norcia
 Patrick Murphy
 Ricky Castro
 Robert McDonald
 Victor Rodriguez
 Paul Salas
 Pepper Kelly
 Robert Stinson
 Jared Thompson
 Tod Bassett
 Mariam Sadri
 Scott Barnes
 Steve Schnick
 Al Ambito
 Charles De La Cruz
 Lisa McKean
 Bryan Castillo
 Nate Parga
 Meghan Bisesto
 Eric Portnoy
 Mario Larrea
 Nina Medina

SPOUSES

Patsy Bell
 Dena Brown

CIVILIAN

Betty Alvarez
 Carl Rader
 Marie Cuvadar
 Deanna Dotta
 Jennifer Duffy
 Laura Manasan
 Mellissa Santagata
 Rebecca Spradley
 Roxanne Cahill
 Dantelle Schule
 Nancy Brown
 Liz Cavanaugh
 Phet Guiney

San Diego Police Chaplains

Rev. Christopher Chadwick—Comm
chris.chadwick@sanysanridgebaptist.com
 858-204-1565

Rev. Robert Cobb—Central
robcc@mvcf.com
 619-300-5020

Deacon Guillermo Valdivia—Southern
Guillemovaldivia75@gmail.com
 619-289-1796

Rabbi Barney Kasdan—Northern
bkasdan@kehilatrael.org
 858-204-2174

Rabbi David Kornberg—Northwestern
rabbik@betham.com
 858-354-2533

Rev. Dale Lowrimore—Western
dlowrimore@cox.net
 619-916-9632

Rev. Mike Macintosh—Northwestern
mike@horizonsd.org
 858-518-5155

Rev. Chuck Price—Eastern/Traffic/GST
wixim@cox.net
 619-249-2229

Rev. Herb Smith—Northeastern
hsmithc1ef@aol.com
 858-442-6417

Rev. Erin Hubbard—MidCity
erinhubbard@cox.net
 619-933-7889

Past. Kendrick Neal—Northeastern
kneal@fbcmm.org
 703-508-7017

San Diego Police Department Chaplain Program

Mission of Chaplains: To provide a presence of spiritual and emotional care and counseling for all SDPD personnel.

SAN DIEGO POLICE DEPARTMENT

WELLNESS UNIT



SAN DIEGO POLICE DEPARTMENT WELLNESS UNIT

Sgt. Ed Zwibel
Office (619)531-2243
Cell (619)569-6189
email: zwibele@pd.sandiego.gov

Sgt. Carmelin Rivera
Office (619)531-2740
Cell (619)743-1151
email: crivera@pd.sandiego.gov

Off. Marnie Minton
Office (619)531-2246
Cell (619)218-2062
email: fminton@pd.sandiego.gov

Deanna Dotia
Office (619)531-2244
Cell (619)857-5005
email: ddotia@pd.sandiego.gov

Wellness Unit Mission

“The Wellness Unit is committed to removing and reducing interferences to employee wellness.”

Wellness Unit Services

- **Resource Identification**-we will help link you to a resource that best fits your needs whether in answer to a personal or professional issue.
- **Check on employees**-we will call anyone you are concerned about but may not feel comfortable calling and let them know the services we have available. Your request will be kept completely confidential at your request.
- **Provide answers when we can.** We will check on the status of any personnel investigation you may be under and provide you with a status update or rough timeline of when you can expect to hear from the investigator. We will not, however, insert ourselves into the details of the investigation or make recommendations to the investigator about how to handle the investigation.
- **Provide educational seminars and workshops.** We will facilitate workshops around the issues that are important to your well-being and health.
- **Share important Law Enforcement studies and collaborate with academic institutions** willing to partner on studies important to our department.
- **Rally immediate debriefing and intervention resources** for all employees impacted by significant critical incidents, officer deaths, or other spontaneous events where employees would benefit from a variety of help resources being immediately available.
- **We will continually recruit and train prospective peer support personnel,** and provide coordination for the department's chaplain services.
- **Identifying and enhancing existing resources**
- **Developing and providing wellness education**
- **Collaborating with academic institutions on innovative LE studies**
- **Developing partnerships with health and wellness providers**
- **Staying abreast of wellness program best-practices through research**
- **Developing and administering a fitness and preventive health incentive program**
- **Serving as an advocate for employees enduring personal or professional difficulties**

FOCUS Psychological Services

FOCUS offers confidential counseling services to all San Diego Police Department employees-sworn, civilian, retired, and their dependents are eligible. The following is a list of available counseling: Individual Counseling, Marriage/Relationship Counseling, Child/Adolescent Counseling, Family/Step Family Counseling, Post Traumatic Incident Counseling, Habit Control (Weight/smoking), Alcohol/Substance Abuse Counseling, Stress Management, Anger Management, Treatment of depression/anxiety, Grief resolution, Divorce Counseling.

(858)565-0066 www.focuspsychservices.com

A.S.A.P. (Alcohol Substance Abuse Program)

Trained counselors with experience in 12-step recovery programs. Available to provide alcohol/substance abuse information, counseling, training and direct assistance to all department employees and their families. Access to closed AA meetings for first responders.

Deanna Dotia (Communications)
619-857-5005 ddotia@pd.sandiego.gov

Mark Zdunich (SWAT Armory)
619-972-1589 mzdunich@pd.sandiego.gov

ADDITIONAL RESOURCES

Medical Assistance
(619) 531-2124

Employee Assistance Program (EAP)
(619) 236-6373

SDPOA
(858) 573-1199

SDMEA
(858) 300-3888

AFSCME17
(619) 640-4939

Appendix D. *Wellness News* Newsletter

This is the August 2017 edition of the *Wellness News* newsletter, which the Wellness Unit creates and distributes to SDPD on a monthly basis.

SAN DIEGO POLICE

WELLNESS

NEWS

AUGUST 2017

VOLUME 44



*A Message from
Assistant Chief
Sandra Albrektsen*

*The Benefits of Donating
Blood*



Everyone has their own formula for what works best for them when it comes to health and wellness. One way is donating blood which can benefit you and someone else. Like any other health or wellness program always check with your primary physician to ensure you are a candidate.

For those who can donate blood (studies show fewer than 10% donate) there are huge benefits. According to an article in The Good Life, April 2017, there are some big positive outcomes:

Strengthening your Heart-Too much iron can stack up in your body causing people to have an elevated risk of cardiovascular disease and heart attacks.

Free Check Up-Before any blood is drawn your vitals are checked. After you give blood, your sample will be tested for West Nile, Hepatitis, and Zika. You will be notified if anything were to come back positive.

Smile-Your donation could save as many as three people's lives; everything from premature babies in need of a transfusions, cancer patients mid-treatment or car accidents.

How It Works:

As soon as you donate your red & white blood cell counts start to drop, this sends a signal to special cells in the kidneys to secrete a hormone (erythropoietin) into the bloodstream.

This hormone travels to your bone marrow where it kick-starts the production of new cells.

Your bone marrow churns out about 2 million red & 115,000 white blood cells every second (pew!), so within a few days or weeks your levels will be back to normal. Most people who are properly hydrated are back to normal within a few hours.

The Red Cross makes donating easy by having centers all over the county with weekend and night hours. Where I donate, in El Cajon, I pick my time online, check in, and I'm out within one hour. **Please consider giving on September 19 in Room 213, HQ.**





American Red Cross Blood Drive



**San Diego Police Department & The American Red Cross
Invite You to Join Forces
To Deliver The
Most Successful Blood Drive to Date!**

WHEN:

**TUESDAY, SEPTEMBER 19TH
10:00-4:00PM**

WHERE:

**SAN DIEGO POLICE HEADQUARTERS
1401 BROADWAY, RM 213.**

**Register Online Now With the Red Cross to
Reserve Your Preferred
Appointment.**

Just copy & paste the link below:

**[https://esibelarecprod.redcrossblood.com/eevents_enu/start.swe?
SWECmd=Start&SWEHo=esibelarecprod.redcrossblood.com](https://esibelarecprod.redcrossblood.com/eevents_enu/start.swe?SWECmd=Start&SWEHo=esibelarecprod.redcrossblood.com)**

WARNING

THE EFFECTS OF NEGLECTING YOUR OWN SELF-CARE.



HYPERVIGILANCE. UNWILLINGNESS.
BROKEN RELATIONSHIPS.
DENIAL. ANGER. CANCER. HEART ATTACK.
HIGH BLOOD PRESSURE.
PTSD. FEAR. DEPRESSION. SUICIDE.
POLICING IS NO JOKE. THIS JOB AFFECTS NOT ONLY
THE OFFICER, BUT THE OFFICER'S ENTIRE FAMILY
AS WELL.



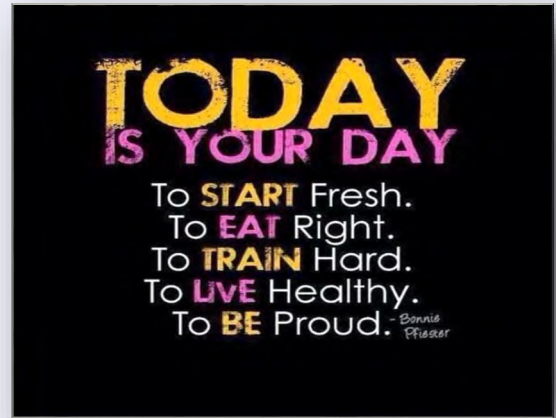
SELF-CARE SHOULD BE YOUR #1 PRIORITY

Success Stories ...

My Story, My Secret

By Steve Willard

Two years ago I weighed 301 pounds. **Now I'm 181.** As one might guess one of the most asked **questions I get is, "how'd you do it?"** Stay tuned, you may not like the answer.



According to the National Institute of Health, more than 2-3 adults are overweight or obese. More than 1-20 adults have extreme obesity. Now for something really scary. **There aren't a lot of obese senior citizens because the associated illnesses have killed them.** Those who are alive are often on a slew of medicines.

Are you overweight? Men, if your waist size doubles to less than your height then **you're fine. At 6 feet tall I'm healthy.** Two years ago I needed to be 7 foot 3.

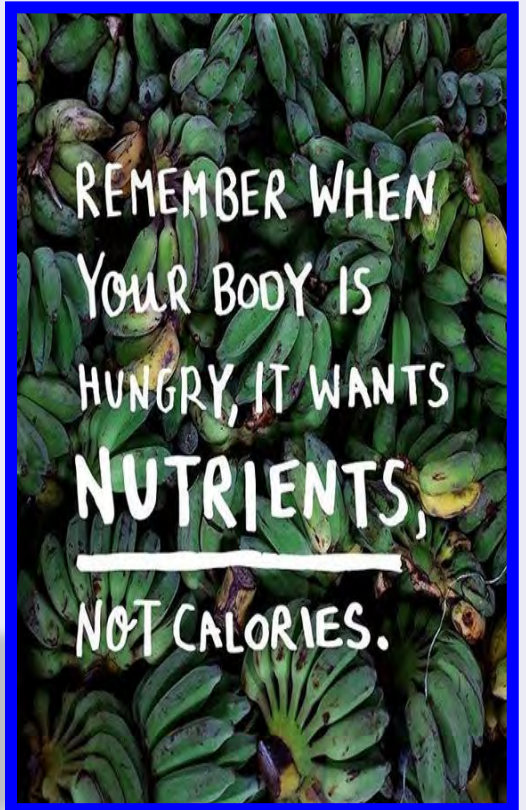
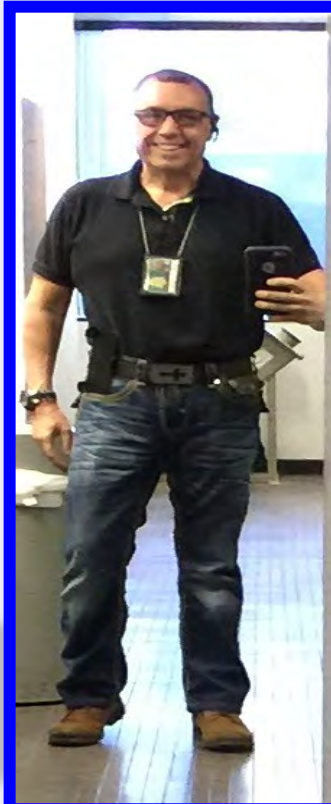
Now for my secret:

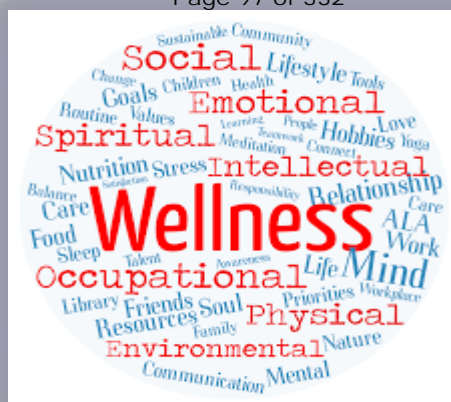
1. **You're in for a long journey of hard work. Weight loss isn't easy.**
2. **Come to terms with why you're fat.** For me that meant some counseling.
3. No more lies. Once, when I had to physically compete with some coworkers, I **feigned injury so they wouldn't see I couldn't keep up.** In the end I was only making an idiot out of myself.
4. No more diets. Diets are temporary plans to deliver temporary results. You need a new way of life. For me I eliminated sugar and meals after 6 pm. My portions were cut in half. When I deviate I add a half an hour to my next workout.
5. Exercise. Then, as you lose weight, dump your bigger clothes. This eliminates the scenario when you discover you pants are too snug so you grab the bigger pair.

The five rules caused my weight to drop. When my pants became too big they went to the Goodwill. I was there so often they started greeting me by name. The same at Nordstrom. I spent a fortune on clothing but the compliments came rolling in. That helped with motivation.

CONTINUED ON NEXT PAGE

Today, I'm completely different physically, mentally and emotionally. I feel great! I can run the P.A.T. in under 3 minutes and I can run several miles without being wind-ed. **When I first began my journey I couldn't do 3 pushups.** I can now easily do 40. **Sit ups are almost double my pushup count. Please don't take this as bragging. It's not. It's simply my story of sacrifice and it's what's kept me from allowing the weight to return – something that happens 85% of the time with diets.** If you need to lose weight please look at my journey like this: If an average guy like me can do it, so can you. Good luck. I hope this helps. Feel free to contact me if you need more specific advice. **We're all in this together.**





The term **“Wellness”** is used frequently within different forms of media. There are books, seminars, conferences, DVD’s and more selling the idea of Wellness. Health Insurance companies use it, doctors use it, QVC uses it, pharmaceutical companies holler wellness through medicine. Pursuing Wellness is a choice, and it’s one that *will* impact our lives in a vital way should we choose to embrace, and pursue it’s fundamentals. Wellness requires action in order to achieve it. Action starts with **“Mindfulness.”** Mindfulness is a way to periodically “reset” yourself so that you can focus on one thing (the thing you are currently doing) instead of five things simultaneously. It can be done in minutes. Since the majority of us are rarely without our electronic devices, it’s safe to say that “hyper connectivity” is alive and well. For first responder’s, its one more feather in your hat of hypervigilance. How many times do you check your phone? Worried that you may miss a call or a text while you were busy doing your job? The more we strive for connectivity, the more we pile on opportunities for stress to increase.

Wellness, Mindfulness & You:

No one among you is exempt from the health affects of your job. There is ***no good*** that comes out of unmanaged stress, unresolved conflict, sleep depravation, poor eating habits, repeated exposure to traumatic incidents, and constant hyper vigilance. No one questions the cost emotional trauma can take on the mental and physical health of law enforcement officers. It’s already proven. Left untreated, these lead to obesity, alcoholism, heart attacks, cancer, strokes and more. As a result, health professionals agree that standard stress management techniques do not work for police. What is needed, is a new cognitive response to managing stress in law enforcement. Tools to be accessed at any time or place. Tools that are found in the practice of Mindfulness. Mindfulness will lead to Wellness which means improved health all the way around.

Moving Ahead

The Wellness Unit is committed to continually searching out Best Practices in Wellness and Mindfulness as it pertains to Law Enforcement. We have already seen Sergeants and other first-line supervisors become more proactive with their employees. The effective supervisors both sworn and civilian, are the ones who take the time to know their employees, to understand who they are individually. In short, supervisors develop a knowledge of those who they are tasked to lead and develop. They are the supervisors who notice when something is off. Secondly, these supervisors are reaching out to their employees and having crucial, candid conversations with them. No longer is it, (or should it be) okay to ask officers, detectives etc., to “suck it up” and move on. Law Enforcement Agencies understands the need to take better care of it’s members. Supervisors who are mindful and effective communicators, will be instrumental in bringing SDPD back to center, and back to being America’s finest. It’s one component of many to be implemented as we move north in change and progress.

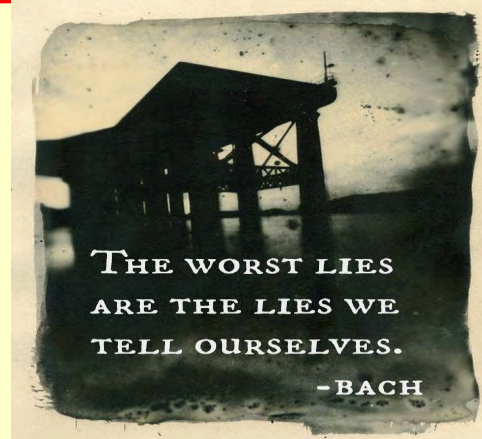
-Deanna Dotta

The Lies We Tell Ourselves –

Barriers to Wellness

Sgt. Carmelin Rivera, Wellness Unit

Part one of a two-part series



One of the most powerful things we can do is teach people that it's okay to be human. The trauma, both physical and emotional, that police officers and civilian/professional staff encounter in this profession tends to be much greater than that of the average citizen. We have made great strides as a profession to diminish the impact of all the junk and messiness that we see, feel, and encounter daily at work, compounded by what we experience in our personal lives. We are still slowly unmasking many of the underlying causes of trauma that we experience in this profession. While we are no different than any other people outside our profession, those that experience life without ever walking in our shoes only see the things that we see in their nightmares, where they have the option to wake up and horror immediately vanishes. We have tendencies to cope in negative ways at alarming rates. It is impossible to walk through years of this profession and come out unscathed. It's difficult to walk in the shoes of police officer or civilian employee from our profession.

We also need to recognize what our civilian employees encounter. Consider who are the individuals in our department who receive the emergency calls and dispatch police officers to critical incidents? Who are the employees who are dealing with angry citizens who want their impounded property back? Who are the members in this department who are racing against time to identify a DNA profile to help investigators identify a serial rapist? Who is photographing and collecting the evidence from horrific crime scenes? Who is dealing with difficult customers wanting access to their police arrest records? These questions are just a sampling of the types of questions we need to ask ourselves to help us recognize the staff that supports much of our daily activities as police officers and help serve our communities.

Now let us recognize the lies we tell ourselves that are barriers to the wellness of all employees. In this newsletter, we identify the first five lies that end up insulating us from the truths we need to achieve wellbeing in this chaotic career.

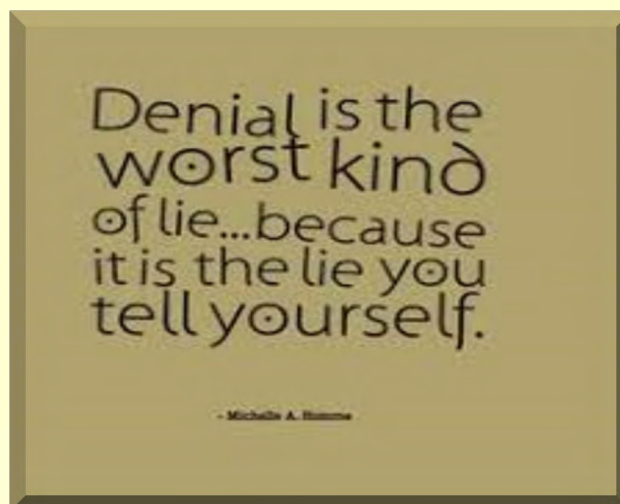
1. I am in control. In this profession we are trained to always be in control...of everything. When we lose control that is sign of weakness, so we tell ourselves that we can master everything. Instead, we should recognize that there are many things out of our control, and we spend too much time trying to gain control over them that we often fail at the most basic things. Focus on the things you can control and let the rest go.

2. I can do this on my own. We train to handle incidents as a team in the field, but often fail miserably when we try to tackle emotional survival by ourselves. No one does anything alone. No matter what accomplishments you have achieved, you didn't do it completely on your own. It takes a great team, a wonderful group of talented people to make an impact. Ask yourself who has contributed to your success? Emotional wellness is a team activity and this department has a Wellness Unit, FOCUS psychologists, chaplains, and peer supporters to help you navigate through whatever you are going through. *(continued on next page)*

3. If I ignore it, it will go away. Many employees ignore the root causes of many of their challenges. Some individuals ignore their injuries and force themselves to work when they should be on light duty. They excessively drink alcohol because it helps them deal with their pain or emotional trauma, ignoring the cause of the trauma to begin with. Most of the time what we ignore grows bigger and becomes even more cumbersome. Whatever is happening, seek resources to help you deal with it. You can't change what you refuse to confront.

4. Everybody does it. We are influential people and we often model the way for others. We know the difference between right and wrong, no matter what anybody else says or does, yet we justify our actions based on others' behaviors. If we are at a bar or someone's home with other employees and recognize that someone might have had too much to drink, the appropriate action to take is to not let that employee drive away drunk. Yet, we reflect on what we believe everyone else does in these situations (in the past it has been to not be confrontational and let the person drive away) – so we allow the person to drive away. We need to model the correct way for each other and do what we know is right.

5. Emotion is weakness. This is where we have made some breakthrough as a profession – identifying that being emotional is being human. Yet many of us remain in the Dark Ages of policing and we continue to lie to ourselves, proclaiming – at least publicly – that showing emotion should be banned from this profession. We lie to ourselves that emotion gets in the way of safety. Nobody in our profession will argue that when we are dealing with the public and handling critical incidents, our professional face should be on display and we should not allow our emotions to take over. However, how do we cope afterwards when those emotions creep up – while we are in bed trying to sleep; when we are asleep; in our relationships; with other co-workers? Sharing our pain, fears, and emotional discomfort and making ourselves vulnerable is not comfortable – and not safe for many of us – so we hold ourselves beyond emotion to appear strong. Getting past this lie that we tell ourselves is difficult for many. Accepting that being emotional is human is a critical step to acknowledging that we may not be in control as we think we are, we may need others to help us deal with the anguish, we have been ignoring the best practices that will actually make us address the real issues that we are dealing with, and we can now stop rationalizing our poor coping mechanisms.





ALL AREA STATIONS AND HEADQUARTERS HAVE FITNESS ROOMS.

HQ HAS A LOT OF STAIRS TO WALK UP AND DOWN, (THEY DON'T GET STUCK UNLESS YOU STOP).



A CLASS AT HQ IN ROOM 213 ON TUESDAY, WEDNESDAY AND THURSDAY FROM 1630-1730. THIS A IS CONDITIONING CLASS USING CALISTENICS & CARDIO. CONTACT BERNIE IN RECORDS FOR FURTHER INFO AT 619-531-2949.

RIGHT ACROSS THE STREET AT **INVICTUS CROSSFIT IS A CLASS CALLED “**BURN 30**”. FROM 12-1230 MONDAY, WEDNESDAY AND FRIDAY. WE ALREADY HAVE EMPLOYEES WHO ARE PARTICPATING! VIVIAN HAMMI FROM DATA SYSTEMS IS A PARTICIPANT AND LOVES IT! YOU CAN CALL HER FOR INFO AT 619-531-2650.**

******* PLEASE LET US KNOW IF YOU HAVE ANY FITNESS CLASSES OR INFO YOU WOULD LIKE TO SHARE FOR OTHER EMPLOYEES*******

RESOURCES:

5 Minute Workout:

<https://thegoddess.com/wp-content/uploads/2017/04/29-Office-Workout.jpg>

5 Minute Workout:

<https://www.youtube.com/watch?v=eR1AWOp6t30>

ADDITIONAL FITNESS RESOURCES & EVENTS

24 Hour Fitness: <https://citynet.sandiego.gov/employee-discounts/24hourfitness>

AquaVie Fitness + Wellness Club: <https://citynet.sandiego.gov/employee-discounts/aquavie>

Balanced Fitness & Health: <https://citynet.sandiego.gov/employee-discounts/balanced>

YMCA of San Diego County: <https://citynet.sandiego.gov/employee-discounts/ymca>

In addition, don't forget that our Park and Recreation Department offers 55 recreation centers, 13 pools, five skate parks and many other recreational facilities that serve all ages, abilities and income levels.



ITEMS TO KEEP IN YOUR GEAR BAG:

1. DISINFECTING WIPES (FOR DIRTY STEERING WHEELS)
2. LEATHERMAN TOOL
3. NIGHT VISION MONOCULAR
4. VICKS TO PUT IN YOUR NOSE WHEN YOU SMELL SOMETHING BAD.
5. YOUR OWN FIRST AID KIT FILLED WITH WHAT YOU WANT.
6. TYLENOL
7. TUMS
8. \$10—\$20.00 Emergency Cash
9. Hand Wipes
10. Extra Gloves

Good Reads

1. ***ARMOR YOUR SELF***

How To Survive a Career in Law Enforcement

Written by John Marx.

The author wrote this book to offer guidance and support for officers and their families.

Author John Marx has given out a coupon code to discount the book from \$24.95 to \$20.00.

Code is: AYSF&F2017

Available at <http://www.CopsAlive.com>

This book is highly regarded by
Lt. Col. Dave Grossman Ph.D.

The author of
On Killing

and

Kevin Gilmartin, Ph.D.

Author of

Emotional Survival for Law Enforcement

2. ***CHASING RELEVANCE***

6 STEPS TO UNDERSTAND,
ENGAGE, AND MAXIMIZE

NEXT-GENERATION LEADERS IN THE WORKPLACE

Written by Dan Negroni

SDPD WELLNESS RESOURCE LIST



444 CAMINO DEL RIO SOUTH,
SUITE 215

SAN DIEGO, CA 92108

• PHONE: (858) 565-0066

• FAX: (619) 291-4662

EMAIL:

INFO@FOCUSPSYCHSERVICES.COM

SDPOA 858-573-11999 sdpoa.org **SWORN MEMBERS**

SDMEA 858-300-3888 sdmea.org **CIVILIAN MEMBERS**

SDPD CHAPLAINS

CHAPLAIN HERB SMITH (858) 442-6417
CHAPLAIN DALE LOWRIMORE (619) 916-9632
CHAPLAIN CHUCK PRICE (619) 249-2229

<http://sdpd/documents/chaplainpics/pdf>

SDPD HUMAN RESOURCES: 619-531-2126

SDPD MEDICAL ASSISTANCE: 619-531-2124

**CITY OF SAN DIEGO
EMPLOYEE ASSISTANCE PROGRAM
(FOR ALL CITY EMPLOYEES)**

619-533-3460

<http://citynet.sannet.gov/riskmanagement/eap>

YOUR WELLNESS STAFF:

**SGT. CARMELIN RIVERA
(619) 531-2740**

TUES-FRI 0700-1700

CRIVERA@PD.SANDIEGO.GOV

**OFFICER DANI RESCH
(619) 531-2246**

TUES-FRI 0600-1600

DJACKSON@PD.SANDIEGO.GOV

**911 DISPATCHER DEANNA DOTTA
(619) 531-2244**

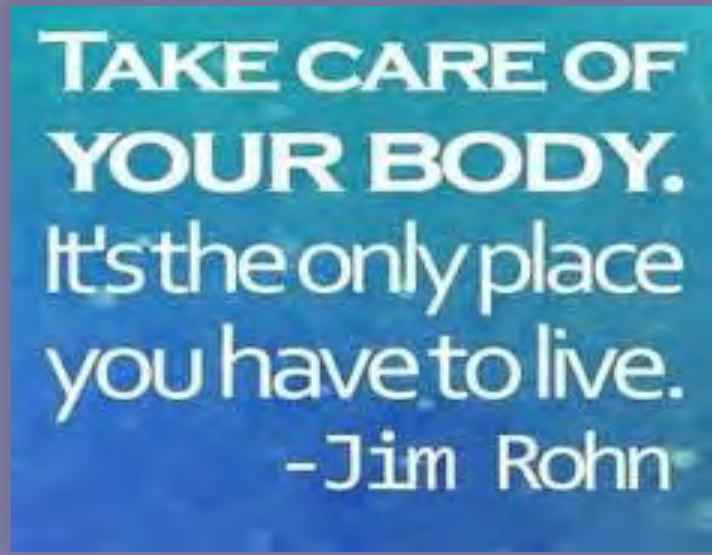
MON-THURS. 0800-1800

DDOTTA@PD.SANDIEGO.GOV

**ALCOHOL & SUBSTANCE ABUSE PROGRAM
COORDINATOR**

thewellnessunit@pd.sandiego.gov

WE WELCOME YOUR COMMENTS AND SUGGESTIONS.



**TAKE CARE OF
YOUR BODY.
It's the only place
you have to live.
-Jim Rohn**

Appendix E. Sample Recap Sheet

NOTE: This appendix has been slightly modified to conform to COPS Office publishing standards.

This is an example of the log that SDPD help services providers use to keep track of and report their wellness contacts.

SAN DIEGO POLICE DEPARTMENT

Peer Support Program and Alcohol Substance Abuse Program

Name:

Month/Year:

“X” the box unless otherwise noted.

Department Member	1	2	3	4	5	6	7	8	9	10
Sworn										
Civilian										
Family member										
Male										
Female										
ISSUES:										
Alcohol abuse										
Bereavement										
Career concerns										
Children / child care										
Coworker										
Critical incident / trauma										
Dating										
Depression										
Disability										
Disciplinary issues										
Financial concerns										
Marital										
Medical/Health problems										
Parents										
PTSD										
Retirement concerns										
Spiritual / Religious										
Stepchildren										
Stress issues										
Subordinate										
Substance abuse										
Suicide										
Supervisor										
Walk-in										
Old case										
New case										
# Personal contacts										
# Phone/email contacts										
# Referrals										
Total hours of contact										

Appendix F. 2013 Wellness Survey

NOTE: This appendix has been slightly modified to conform to COPS Office publishing standards.

This is the survey that the Wellness Unit created and administered in 2013 to gauge the effectiveness of their programs and their organizational visibility.

Wellness Unit Services Survey

Since the inception of the Wellness Unit in July 2011, I have heard about the services offered via:

- | | |
|--|--------------|
| 1. Advanced Officer Training | yes___ no___ |
| 2. Supervisor's update training | yes___ no___ |
| 3. Civilian Resiliency Training | yes___ no___ |
| 4. Unit or division meetings | yes___ no___ |
| 5. Patrol Line-up or supervisors meeting | yes___ no___ |
| 6. Wellness Newsletter | yes___ no___ |
| 7. Department Intranet | yes___ no___ |
| 8. Word of mouth | yes___ no___ |

Resources

I have personally utilized the following service(s) offered by the Wellness Unit:

- | | |
|--|--------------|
| 9. Focus | yes___ no___ |
| 10. Peer Support | yes___ no___ |
| 11. Chaplains | yes___ no___ |
| 12. M.A.P. (Member Assistance Program) | yes___ no___ |
| 13. Biometric Screenings (Kaiser or Sharp) | yes___ no___ |
| 14. Health and Wellness Lectures
(Nutrition, meditation, financial) | yes___ no___ |
| 15. Guest Speakers
(Kevin Gilmartin, David Grossman, Clarke Paris, Jack Enter, Bobby Smith, Robert Douglas) | yes___ no___ |

Only IF YOU HAVE utilized the listed services **within the last 2 years** please respond to the following:

IF YOU HAVE NOT utilized the above mentioned services, please answer the following:

- 37. Although I have not utilized a MAP person about any issues, I would if the need arose. yes___ no___
- 38. I have seen the M.A.P. Profile book at my division. yes___ no___
- 39. Although I have not utilized Focus about any issues, I would if the need arose. yes___ no___
- 40. Although I have not utilized a chaplain about any issues, I would if the need arose. yes___ no___
- 41. I know how to contact any of our chaplains after hours if needed. yes___ no___
- 42. Although I have not utilized the Wellness Unit about any issues, I would if the need arose. yes___ no___
- 43. I know of people who have utilized the services of the Wellness Unit. yes___ no___
- 44. I do/would feel comfortable walking into the Wellness Unit regardless of the reason for my visit yes___ no___
- 45. I am aware of ASAP. yes___ no___

Stigma and Attitude Change

- 46. I feel like the stigma associated with asking for help is reducing. yes___ no___
- 47. I feel like there is a greater awareness of employee wellness and resiliency building in the department. yes___ no___
- 48. I feel like there is a lot more discussion about issues like suicide, substance abuse, and other ineffective coping behaviors than two years ago. yes___ no___
- 49. I trust that if I had a personal issue that was interfering with work or at home I could ask for assistance and receive help. yes___ no___
- 50. I am: sworn_____ civilian_____
- 51. I am: male_____ female_____

Optional:

Division/ Unit _____

Additional comments or suggestions:

Appendix G. “Wellness Day” Agenda

This is the agenda from the Psychological Preparedness Training for New Officers (known as “Wellness Day”) held on November 4, 2017 for new officers and their loved ones.

WELLNESS DAY

SATURDAY NOVEMBER 4, 2017

0700-1700

WATER DEPT TRAINING & DEVELOPMENT AUDITORIUM

5510 KIOWA DR., LA MESA 91942

0700-1130: OFFICERS ONLY W/FOCUS AND WELLNESS STAFF:

1. 0730-0900 **FOCUS INTRO, BACKGROUNDS, DISCUSSION**

0900-0910 BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK

2. 0915-1045 GUEST OFFICER'S SHARING CRITICAL INCIDENT EXPERIENCE

0915-1000

1000-1045

1045-1055 BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK

3. 1100-1130 WELLNESS STAFF/FOCUS

1130-1230 LUNCH BREAK LUNCH BREAK LUNCH BREAK LUNCH

4. 1230-1330-FOCUS W/OFCRS ON PATIO

5. 1230-1330: FAMILY INSIDE WITH WELLNESS STAFF & CHAPLAINS.

1330-1340 BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK

1. 1340-1400 CHIEF

2. 1400-1415 ASAP

3. 1415-1500 **GROUP & OUTSIDE INTERACTION (ROCKS & HYPERVIGILANCE)**

4.

1500-1510 BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK BREAK

5. 1515-1600: MARRIED COUPLE TESTIMONY

6. 1600-1615 FAMILY RESOURCE TEAM

1615-1700: **WELLNESS STAFF**

Appendix H. Effective Interactions Scenarios

These are descriptions of the scenarios used during day two of Effective Interactions training for new officers.

Scenario 1. Large party

Officers respond to a large party in the back yard. The party goers are celebrating a quinceañera and it is now 3:00 a.m. The officers need to make contact with the owners of the residence and use effective interactions skills to diffuse the situation and help shut down the party. This upsets the 15-year-old birthday girl.

Scenario 2. 7-11 parking

An officer goes to a 7-11 convenience store to take a break from patrol. The officer parks on the red curb outside the store. An adult customer and his/her fifteen-year old son/daughter drive into the 7-11 parking lot and see where the officer parks. The son/daughter is confused because the adult recently received a parking citation for parking in a red zone. The angry adult confronts the officer as he/she is leaving the store, and questions the officer on the double-standard that seems to permit police officers to park in a red zone when there is no emergency while community members are cited for the same offense.

Scenario 3. Disturbance and authority

Officers respond to a disturbance call involving neighbors who are arguing over a civil dispute. Also present is a clergy member or teacher. The clergy member/teacher tells the officer that he/she knows the individuals well and has intervened in their prior disputes, resulting in peaceful resolutions. The officer should recognize the authority that clergy member or teacher holds in the community and should ask them for guidance in resolving this dispute.

Scenario 4. Jogger matches the description

A community member contacts an officer to describe a suspicious jogger at a park late at night. The community member is vague, but alludes to the fact that the jogger might be casing cars to break into them. Moments later, a jogger who matches the description goes by and the officer makes contact. The jogger is angry because he/she feels the officer is “just harassing” and “profiling” him/her, as this is the third time he/she has been stopped in a month and always seems to “match the description” of an alleged criminal offender in the area.

Scenario 5. Traffic stop

An officer stops a car for a stop sign violation. The stop is made in front of the adult driver’s residence. The driver’s father/mother comes out of the house with a cell phone camera, wanting to record the officers “harassing” his/her 18-year old son/daughter. The parent yells at the officer. The officer now has two individuals to deal with and must interact with both effectively.

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PERF strives to advance professionalism in policing and to improve the delivery of police services through the exercise of strong national leadership, public debate of police and criminal justice issues, and research and policy development.

The nature of PERF's work can be seen in the titles of a sample of PERF's recent reports. (Most PERF reports are available without charge online at <http://www.policeforum.org/free-online-documents>.)

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The **Office of Community Oriented Policing Services (COPS Office)** is the component of the U.S. Department of Justice responsible for advancing the practice of community policing by the nation's state, local, territorial, and tribal law enforcement agencies through information and grant resources.

Community policing begins with a commitment to building trust and mutual respect between police and communities. It supports public safety by encouraging all stakeholders to work together to address our nation's crime challenges. When police and communities collaborate, they more effectively address underlying issues, change negative behavioral patterns, and allocate resources.

Rather than simply responding to crime, community policing focuses on preventing it through strategic problem-solving approaches based on collaboration. The COPS Office awards grants to hire community policing officers and support the development and testing of innovative policing strategies. COPS Office funding also provides training and technical assistance to community members and local government leaders, as well as all levels of law enforcement.

Since 1994, the COPS Office has invested more than \$14 billion to add community policing officers to the nation's streets, enhance crime fighting technology, support crime prevention initiatives, and provide training and technical assistance to help advance community policing. Other achievements include the following:

- To date, the COPS Office has funded the hiring of approximately 130,000 additional officers by more than 13,000 of the nation's 18,000 law enforcement agencies in both small and large jurisdictions.
- Nearly 700,000 law enforcement personnel, community members, and government leaders have been trained through COPS Office-funded training organizations.
- To date, the COPS Office has distributed more than eight million topic-specific publications, training curricula, white papers, and resource CDs and flash drives.
- The COPS Office also sponsors conferences, round tables, and other forums focused on issues critical to law enforcement.

COPS Office information resources, covering a wide range of community policing topics such as school and campus safety, violent crime, and officer safety and wellness, can be downloaded via the COPS Office's home page, www.cops.usdoj.gov. This website is also the grant application portal, providing access to online application forms.

Law enforcement agencies around the country are recognizing the importance of monitoring and tending to employees' physical and mental health and wellness. This publication discusses the establishment and operation of a dedicated unit at the San Diego Police Department with the goal of promoting a department-wide culture of wellness. Working toward this goal will also help the department better serve its community. The Police Executive Research Forum, working with the SDPD under a cooperative agreement from the COPS Office, identified lessons learned and recommendations that will help guide other local agencies that may be interested in setting up similar programs.



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e041818878
Published 2018



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Occup Environ Med published online October 14, 2013
doi: 10.1136/oemed-2013-101662

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ORIGINAL ARTICLE

Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950–2009)

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► Additional material is published online only. To view please visit the journal online (<http://dx.doi.org/10.1136/oemed-2013-101662>).

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Received 12 June 2013

Revised 10 September 2013

Accepted 23 September 2013



► <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

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.

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

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.

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

Underlying cause (ICD-10 codes)	Current study results (US population referent)					Meta-analysis of LeMasters <i>et al</i> ^{14*}		
	Mortality (1950–2009)†		Cancer incidence (1985–2009)			Studies	SRE (95% CI), Likelihood rating	
	Obs	SMR (95% CI)	All cancers	First cancer	Obs			SIR (95% CI)
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

Underlying cause (ICD-10 codes)	Mortality (1950–2009)				Cancer incidence (1985–2009)*			
	Caucasian		Other		Caucasian		Other	
	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.

Table 4 Standardised mortality ratios (US population referent) and rate ratios for select outcomes* by employment duration (lagged 10 years)

Underlying cause (ICD-10 codes)	Employment duration (years)								Trend slope†, p Value
	0–<10		10–<20		20–<30		30+		
	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)	
MN oesophagus (C15)	13	1.17 (0.62 to 2.00) (Reference)	28	1.72 (1.14 to 2.48) 2.43 (1.07 to 5.50)	53	1.40 (1.05 to 1.83) 1.17 (0.56 to 2.41)	19	1.18 (0.71 to 1.84) 0.60 (0.27 to 1.35)	–2.14×10 ^{–6} , 0.141
MN stomach (C16)	12	0.80 (0.41 to 1.40) (Reference)	18	0.92 (0.54 to 1.45) 0.33 (0.08 to 1.43)	47	1.07 (0.79 to 1.43) 0.39 (0.10 to 1.55)	33	1.53 (1.06 to 2.15) 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) (Reference)	52	1.27 (0.95 to 1.67) 1.16 (0.38 to 3.54)	171	1.42 (1.22 to 1.65) 0.62 (0.27 to 1.44)	76	1.28 (1.01 to 1.60) 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) (Reference)	19	1.58 (0.95 to 2.46) 0.99 (0.33 to 2.97)	37	1.35 (0.95 to 1.86) 0.61 (0.24 to 1.52)	20	1.52 (0.93 to 2.34) 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) (Reference)	184	1.03 (0.88 to 1.19) 1.32 (0.97 to 1.80)	523	1.14 (1.05 to 1.24) 1.24 (0.91 to 1.68)	216	1.12 (0.98 to 1.28) 0.80 (0.59 to 1.08)	–8.83×10 ^{–6} , 0.216
MN prostate (C61)	24	1.39 (0.89 to 2.07) (Reference)	23	1.08 (0.68 to 1.62) 0.66 (0.31 to 1.41)	148	1.10 (0.93 to 1.29) 0.84 (0.47 to 1.50)	87	1.01 (0.81 to 1.25) 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) (Reference)	18	1.24 (0.73 to 1.95) 0.61 (0.26 to 1.48)	47	1.43 (1.05 to 1.90) 1.25 (0.58 to 2.69)	17	1.19 (0.69 to 1.91) 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) (Reference)	7	0.65 (0.26 to 1.34) 0.25 (0.08 to 0.79)	46	1.08 (0.79 to 1.45) 1.15 (0.49 to 2.70)	23	0.94 (0.60 to 1.41) 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) (Reference)	15	0.88 (0.49 to 1.46) 0.80 (0.30 to 2.19)	32	1.17 (0.80 to 1.65) 1.48 (0.60 to 3.68)	14	1.47 (0.80 to 2.46) 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) (Reference)	9	0.51 (0.23 to 0.96) 1.18 (0.41 to 3.45)	63	1.35 (1.04 to 1.73) 1.15 (0.60 to 2.22)	33	1.47 (1.01 to 2.06) 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) (Reference)	23	1.36 (0.86 to 2.05) 2.24 (0.92 to 5.50)	54	1.11 (0.83 to 1.45) 1.36 (0.65 to 2.87)	27	1.06 (0.70 to 1.54) 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) (Reference)	<5	0.52 (0.14 to 1.34) 0.56 (0.11 to 2.82)	22	0.97 (0.61 to 1.47) 1.59 (0.47 to 5.41)	11	0.99 (0.49 to 1.77) 1.25 (0.33 to 4.75)	5.27×10 ^{–7} , 0.407
COPD (J40–J44)	33	0.78 (0.54 to 1.10) (Reference)	38	0.69 (0.49 to 0.94) 1.07 (0.60 to 1.91)	185	0.70 (0.60 to 0.81) 1.03 (0.67 to 1.60)	111	0.75 (0.62 to 0.91) 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 45 years 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

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This is to certify that the doctoral dissertation by

Marlana Hancock

has been found to be complete and satisfactory in all respects,
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2017

Abstract

Law Enforcement Fitness Policies in Relation to Job Injuries and Absenteeism

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

Doctor of Philosophy

Public Policy and Administration

Walden University

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	vi
List of Figures	vii
Chapter 1: Introduction to the Study.....	1
Background of the Study	1
Problem Statement	4
Purpose of the Study	5
Research Questions and Hypotheses	6
Theoretical Framework.....	7
Definitions of Terms	7
Nature of Study	8
Assumptions, Limitations, Delimitations	10
Significance of Study.....	12
Social Change	13
Summary.....	14
Chapter 2: Literature Review.....	15
Introduction.....	15
Searching the Literature	17
Physical Demands of Law Enforcement.....	18
Work-Related Injuries.....	21
Physical Fitness Policies in Law Enforcement	22
The Legalities of Fitness Standards	23

Physical Fitness Testing.....	25
Police Officer Physical Abilities Test (POPAT)	29
The Impact of <i>Fitness</i> for Duty.....	33
Fitness Resources for the Workplace.....	38
Leadership in Law Enforcement.....	39
Rational Choice Theory	42
Summary.....	44
Chapter 3: Research Method.....	45
Introduction.....	45
Research Design.....	45
Case Study	46
Role of the Researcher	47
Research Population and Sample.....	49
Instrumentation	51
Ethical Procedures and Considerations.....	52
Protection of Human Participants	52
Informed Consent.....	52
Right to Privacy	53
Honesty	53
Institutional Review Board (IRB).....	53
Data Analysis	54
Dissemination of Study Findings.....	54

Validity and Reliability.....	55
Summary.....	55
Chapter 4: Results.....	57
Introduction.....	57
The Researcher.....	58
Setting and Recruitment Process	60
Instruments.....	61
Quantitative.....	61
Qualitative.....	62
Demographics	63
Agency 1	63
Agency 2	64
Agency 3	64
Agency 4	64
Agency 5	65
Agency 6	65
Data Collection	65
Data Analysis	66
Research Question 1	68
ANOVA	70
Research Question 2	73
Research Question 3	78

Threats to Internal Validity-Instrumentation	80
Trustworthiness.....	81
Summary	83
Chapter 5: Discussion, Conclusions, and Recommendations	85
Introduction.....	85
Interpretation of the Findings.....	85
Research Question 1	86
Theoretical Concepts	87
Research Question 2	88
Research Question 3	89
Existing Policies and Potential Approaches	89
Limitations	90
Implications for Positive Social Change.....	92
Recommendations for Action	93
Recommendations for Further Study	94
Conclusion	95
References.....	97
Appendix A: North Carolina Regions.....	112
Appendix B: Piedmont Triad Region Law Enforcement Agencies.....	113
Appendix C: Population of Midsize Law	114
Appendix D: Sample Agency Fitness Policy.....	115
Appendix E: OSHA 300A Summary Form	116

Appendix F: Participating Agencies OSHA Data.....117
Appendix G: Agency Questionnaire.....118

List of Tables

Table 1. Agency Demographics of Sample	68
Table 2. 95% Confidence Intervals of Pairwise Differences in Mean Changes of Injury Rates	72
Table 3. Agency Responses to Policy Rationale	76

List of Figures

Figure 1. Concurrent/triangulation design47

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?

H₀: No significant relationship exists between the stringency of fitness policy and job-related injuries and absenteeism.

H₁: 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?

H₀: Based on the utility function, rational choice theory does not explain why an agency has the current fitness policy in place.

H₁: 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?

H₀: Injuries and/or absenteeism rates are neither an agent nor a constraint of the current fitness policy.

H₁: 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 *fitness* 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 Stroschine (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 criteria. 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 *Fitness 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 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).

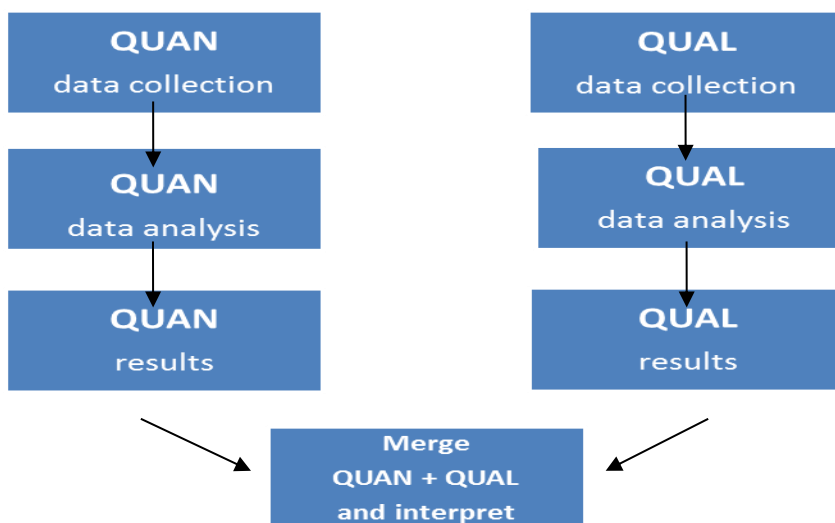


Figure 1. Concurrent/triangulation design. Adopted from *The Mixed Methods Reader* (p. 380), by V. L. Plano Clark & J. W. Creswell, 2008, Thousand Oaks, CA: SAGE. Copyright 2008 by Sage Publications, Inc.

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	<i>M</i>	<i>SD</i>	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?	<p>1 – the agency is in the process of reviewing and updating policies in order to apply best practices.</p> <p>2 – case law, cost, manpower, buy in from administration, law suits</p> <p>3 – physical fitness policy has never really been addressed</p> <p>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</p> <p>5 – it was one of the Sheriff's initiations in 2002</p> <p>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</p>
Who are involved decision makers in fitness policy?	<p>1 – Sheriff and Administrative Major who verifies policy changes to ensure it complies with law</p> <p>2 – Sheriff, Chief Deputy, Director Personnel/Training</p> <p>3 – Chief of Police and Executive Staff</p> <p>4 – Chief of Police Bureau Commander, Training Division Commander and/or other departmental employees</p> <p>5 – Sheriff and committee</p> <p>6 – Chief of Police, Occupational Health staff, HR Director, City Manager, City Attorney</p>
What factors determine or affect fitness policy?	<p>1 – resources, manpower, cost</p> <p>2 – resources, manpower, cost</p> <p>3 – time, money, effort, legality, injury, penalty for failure to maintain standards, resources, equipment</p> <p>4 – finding a balance between stewardship to the taxpayer and providing employees some opportunities to maintain and improve their health</p> <p>5 – we have the manpower, a more holistic approach was needed</p> <p>6 – cost, provide training, build a gym/fitness center, staffing was not a major concern</p>

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 of 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 create 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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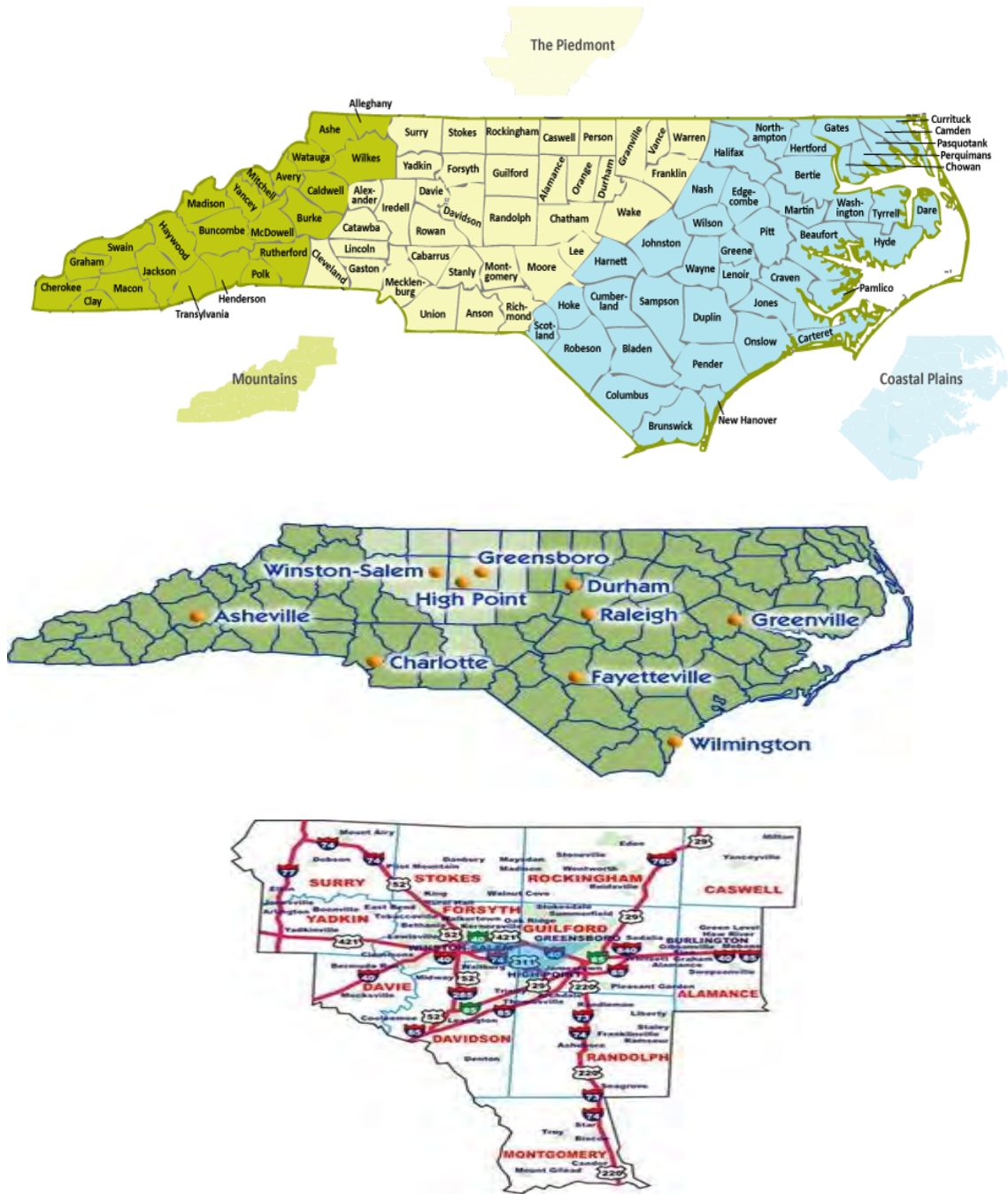
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Appendix A: North Carolina Regions



Reference: Piedmont Triad Council. (2012). Retrieved from <http://www.ptrc.org/>

Appendix B: Piedmont Triad Region Law Enforcement Agencies

<u>Agency</u>	<u>Population 50,000 – 500,000</u>
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
██████████ County Sheriff's Office	151,131
██████████ Police Department	49,963
██████████ County Sheriff's Office	162,878
██████████ County Sheriff's Office	350,670
██████████ Police Department	229,617
██████████ County Sheriff's Office	488,406
██████████ Police Department	269,666
██████████ Police Department	104,371
██████████ County Sheriff's Office	141,752
██████████ County Sheriff's Office	93,643
██████████ 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

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.

Year 20

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-004

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 _____
(2) Skin disorders _____	(5) Hearing loss _____
(3) Respiratory conditions _____	(6) All other illnesses _____

Establishment information

Your establishment name _____

Street _____

City _____ State _____ ZIP _____

Industry description (e.g., *Manufacturer 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

() / /
Date 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 30 minutes per response, including time to review the instructions, search existing data sources, 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 aspect of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20355. 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?



RESEARCH

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Accuracy of peak VO₂ assessments in career firefighters

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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 VO₂ assessments to volitional fatigue. Of the 83, 63 completed WFI sub-maximal exercise treadmill tests for comparison to directly measured peak VO₂ and historical estimations.

Results: Maximal heart rates were overestimated by the traditional 220-age equation by about 5 beats per minute ($p < .001$). Peak VO₂ 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 VO₂ when compared to directly measured peak VO₂.

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 VO₂ (measured as ml/kg⁻¹.min⁻¹), which is an objective, clinical measure that defines the limits of cardiopulmonary function. Peak VO₂ 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 O₂/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

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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 $33.6 \text{ ml/kg}^{-1} \text{ min}^{-1}$ to $49 \text{ ml/kg}^{-1} \text{ min}^{-1}$). Recent analysis of physical aptitude tests among firefighter recruits demonstrated that male recruits' average VO_2 requirement was $38.5 \text{ ml/kg}^{-1} \text{ min}^{-1}$ (11 METs) to complete a timed simulated firefighting assessment course [8]. Measurement of functional capacity in 23 firefighters suggested that a mean of $41.54 \text{ ml/kg}^{-1} \text{ min}^{-1}$ (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 ($220 - \text{age}$) 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 $220 - \text{age}$. 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 VO₂ 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 VO₂ based on the American College of Sports Medicine metabolic equation for running [16].

Peak VO₂ was obtained using the Cardio Coach CO₂TM VO₂ Fitness Assessment System, Model 9001-RMR (Korr Medical Technologies, Salt Lake City, Utah). The Cardio Coach CO₂TM is an economical, portable metabolic testing device that is feasible for use in a clinic and has been previously validated for measurement of peak VO₂ levels [17,18]. The Cardio Coach CO₂TM is a dual gas analyzer (O₂ and CO₂) that automatically calibrates to standard temperature and pressure, dry at the beginning of each testing cycle. The Cardio Coach CO₂TM measures heart rate using the Polar T-31 heart monitor (Polar, Inc., Lake Success, NY). Heart rate and VO₂ (ml/kg⁻¹ · min⁻¹), VCO₂ (ml/kg⁻¹ · min⁻¹), VE/VO₂, VE/VCO₂, VE in L/min, FeO₂%, Fe CO₂%, and respiratory exchange ratio are graphically reported every 15 seconds. The Cardio Coach CO₂TM uses the ventilatory equivalents method (Ve/VO₂) 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 VO₂: peak VO₂ = 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 VO₂, 63 subsequently completed 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 VO₂ 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 VO₂ from the sub-maximal exercise treadmill. The estimated peak VO₂ 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 VO₂. 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

Dependent *t*-tests were conducted on all 83 participants to test for differences between:

- 1) Estimated maximal heart rate ($220 - \text{age}$) 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 ($220 - \text{age}$) 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 $\text{VO}_2/3.5$).

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 VO₂, Estimated METs

	<i>n</i>	Mean	SD	SEM	95% CI Lower	95% CI Upper	<i>t</i>	<i>d</i>	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 firefighter's 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 VO₂ and maximal exercise treadmill results indicate that the equation utilized by the WFI maximal treadmill over-estimates peak VO₂ by an average of 4.06 ml/kg⁻¹ · 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 VO₂ 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 VO₂, and that those equation results should be used with caution for duty assignment decisions.

The comparison of directly measured peak VO₂ to the revised sub-maximal exercise treadmill peak VO₂ estimates (*n* = 63) found that there were no differences between the two assessment methods. When comparing revised WFI sub-maximal exercise treadmill peak VO₂ 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 VO₂ 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 VO₂ and the sub-maximal exercise treadmill peak VO₂ 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 VO₂ 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 VO₂ results. WFI maximal treadmill peak VO₂ 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 VO₂ 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 VO₂ 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.

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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.

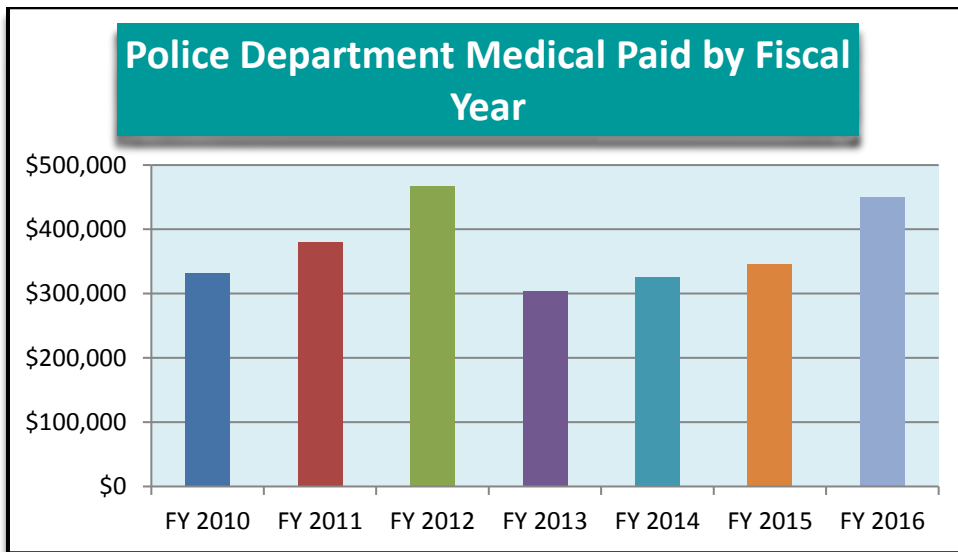
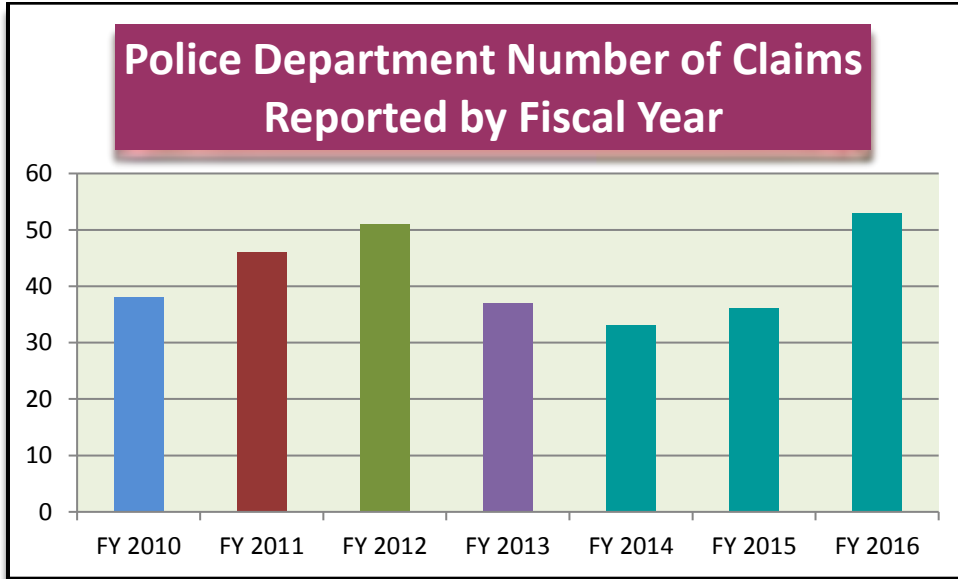
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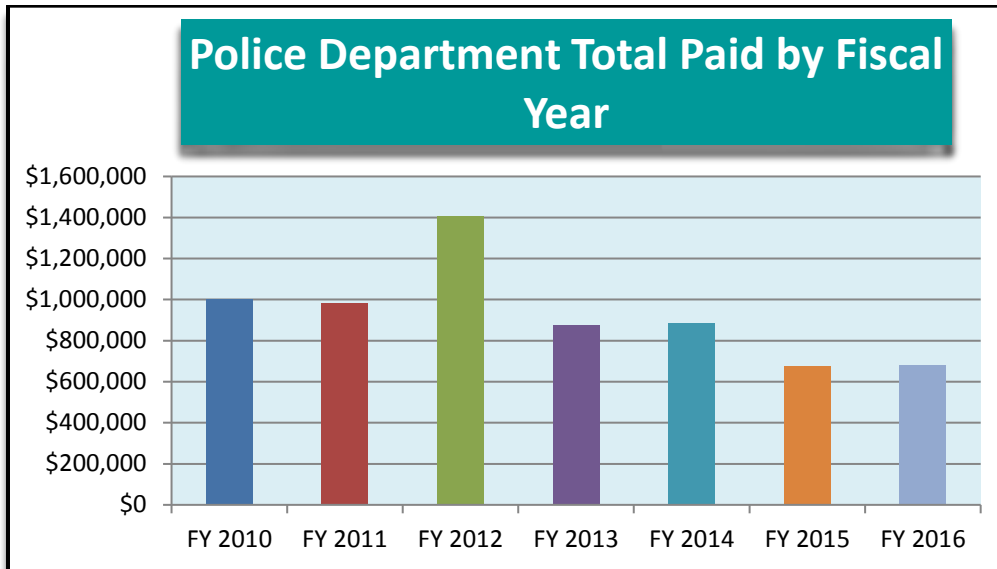
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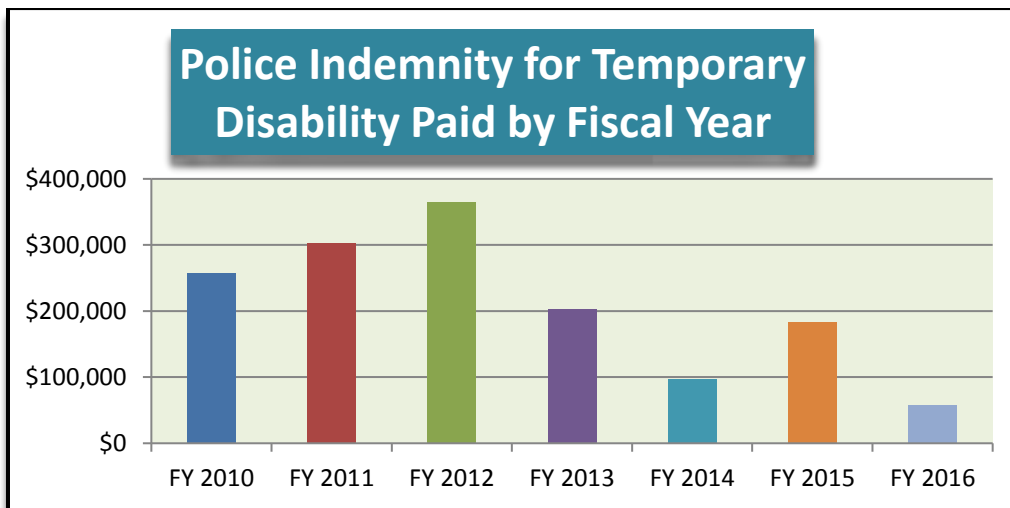
Clovis Police Department

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



Original Contribution

The Association of Aerobic Fitness With Injuries in the Fire Service

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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

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.

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); $P < 0.001$).

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 VO_{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 VO_{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 VO_{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 VO_{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						
	VO_{2max} ^a			VO_{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; VO_{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

VO _{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, VO_{2max}, relative aerobic capacity.

^a All models were adjusted for sex and age.

^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.

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 VO_{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 VO_{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 a 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

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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 outnumbered 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

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1537-890x/1003/167-172

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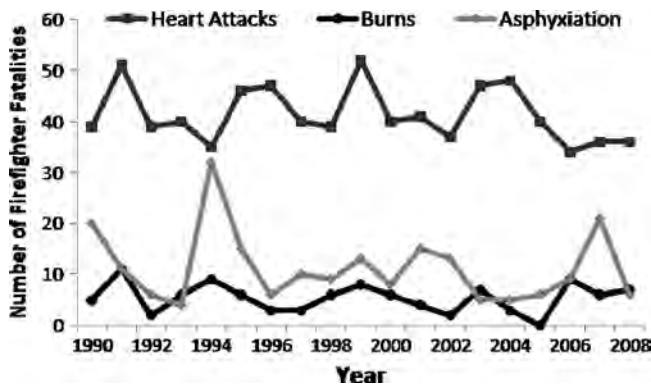


Figure 1: Firefighter casualty statistics from 1990 to 2008. Based on data from The National Fire Protection Association (NFPA).

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

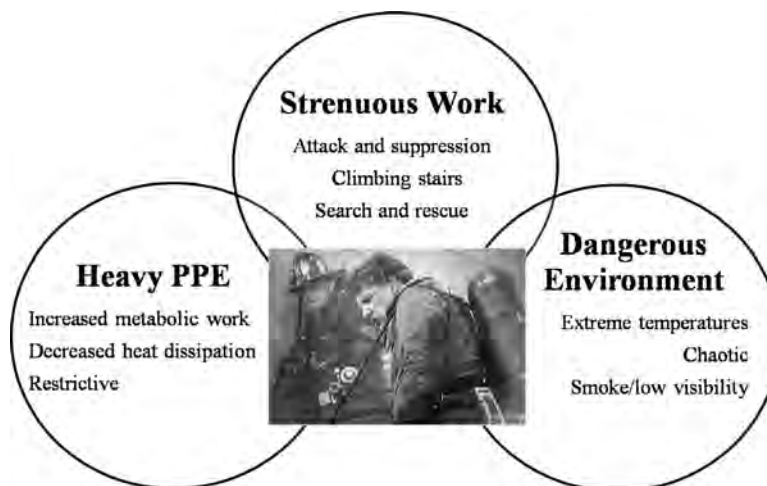


Figure 2: Unique job stressors. Stressors associated with firefighting include strenuous muscular work, heavy personal protective equipment (PPE), and a hot and dangerous environment.

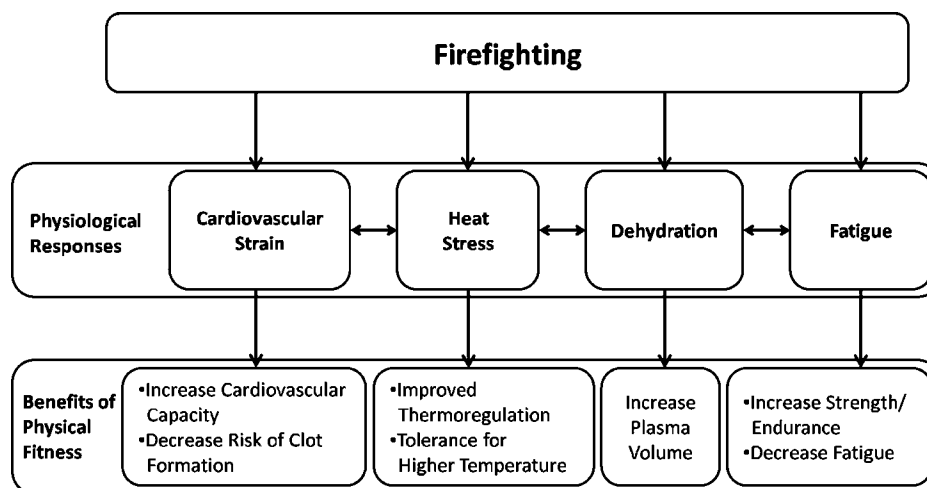


Figure 3: Primary physiological responses to firefighting and the benefits of physical fitness. Firefighting results in considerable physiological strain. A well-designed fitness program provides multiple benefits and helps prepare the firefighter for the demands of firefighting.

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·kg⁻¹·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 $\dot{V}O_{2\max}$ of 39.9 mL·kg⁻¹·min⁻¹ and worked at approximately 76% of their $\dot{V}O_{2\max}$ to complete the simulated drills (44). To validate a minimum $\dot{V}O_{2\max}$ requirement, the researchers recruited another group of firefighters ($\dot{V}O_{2\max}$ range 26–51 mL·kg⁻¹·min⁻¹) and had them perform the fire-suppression drills. Seven of 10 firefighters with a $\dot{V}O_{2\max}$ of 33.5 to 41.0 mL·kg⁻¹·min⁻¹ were able to successfully complete the drills within the allotted time. All participants with a $\dot{V}O_{2\max}$ greater than 41 mL·kg⁻¹·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·kg⁻¹·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·kg⁻¹·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·kg⁻¹·min⁻¹) to the 30- to 35-yr-old group (37.9 mL·kg⁻¹·min⁻¹) and from the 35-yr-old group to the 40- to 45-yr-old group (31.5 mL·kg⁻¹·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 $55.9 \text{ mL}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ and that the oldest group, 50–59 yr, had an oxygen uptake of $40.4 \text{ mL}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ (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 $35 \text{ mL}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ (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, $\dot{V}O_{2\text{max}}$ 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 ≥ 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 measurable 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

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¹Health and Exercise Sciences, Skidmore College, Saratoga Springs, NY; ²University of Illinois Fire Service Institute, Champaign, IL; ³Department of Environmental Health, Harvard TH Chan School of Public Health, Boston, MA; ⁴Occupational 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

Editor's note: Go online to view the Journal Club questions in the Supplemental Digital Content: see <http://links.lww.com/ESSR/A19>.

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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

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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

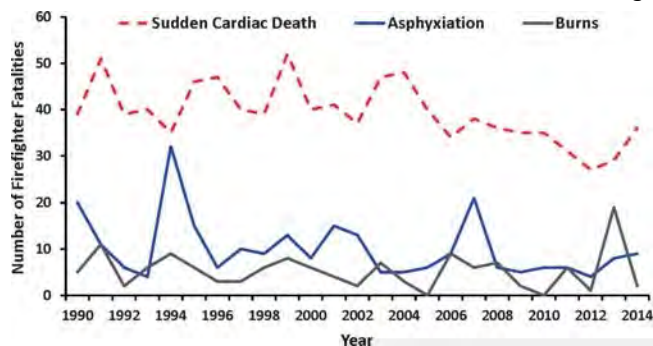


Figure 1. Line-of-duty deaths by major cause since 1990.

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

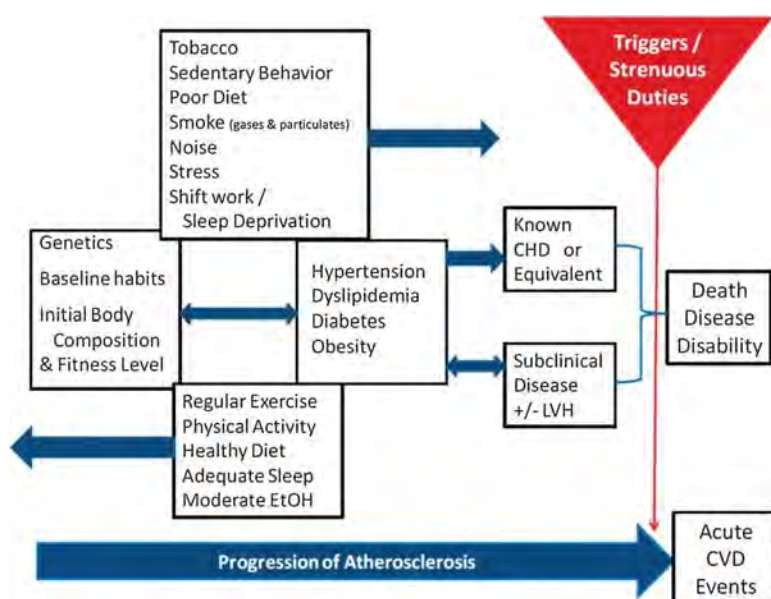


Figure 2. Theoretical model of occupational, medical and behavioral risk factors that contribute to sudden cardiac events following firefighting activities. Note that there is overlap between occupational and lifestyle risk factors. Arrows indicate that factors can be associated with progression or regression 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.)

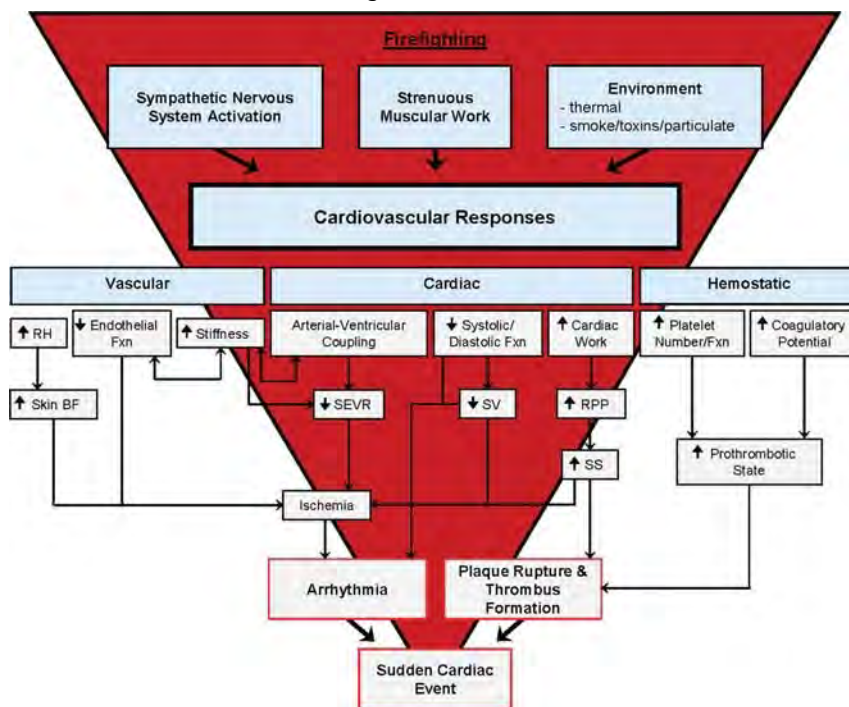


Figure 3. Theoretical interplay between cardiac, vascular, and hemostatic responses to firefighting and sudden cardiac events in susceptible individuals. RH, reactive hyperemia; BF, blood flow; Fxn, function; SEVR, sub-endocardial viability ratio; SV, stroke volume; RPP, rate pressure product; SS, shear 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 $40 \text{ mL}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ (24). The strenuous work of firefighting is performed while wearing heavy ($\geq 25 \text{ kg}$) 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 ($\leq 20 \text{ min}$) 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 $37.1 \pm 0.5^\circ\text{C}$ to $38.9 \pm 0.6^\circ\text{C}$. 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 $37.8 \pm 0.1^\circ\text{C}$ 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 hypercoagulable state that is normally offset by simultaneous increases in fibrinolysis (16). This hypercoagulable 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 percentage 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), $\geq 30 \text{ kg} \cdot \text{m}^{-2}$) 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·m ⁻²	3.1 (1.5–6.6)	3.6 (2.0–6.4)	1.4 (0.96–1.93)
Cholesterol ≥ 5.18 mmol·L ⁻¹ (200 mg·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·L⁻¹ (150 mg·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 anti-hypertensive 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·m⁻²). We found increased arterial stiffness in the obese (≥ 29.5 kg·m⁻²) and overweight (25.9–29.4 kg·m⁻²) firefighters compared with that in lean (<25.9 kg·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 five-fold 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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REVIEW

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Prostate cancer in firefighting and police work: a systematic review and meta-analysis of epidemiologic studies

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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

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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 I^2 statistic were reported. Ninety-five percent confidence intervals for the I^2 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

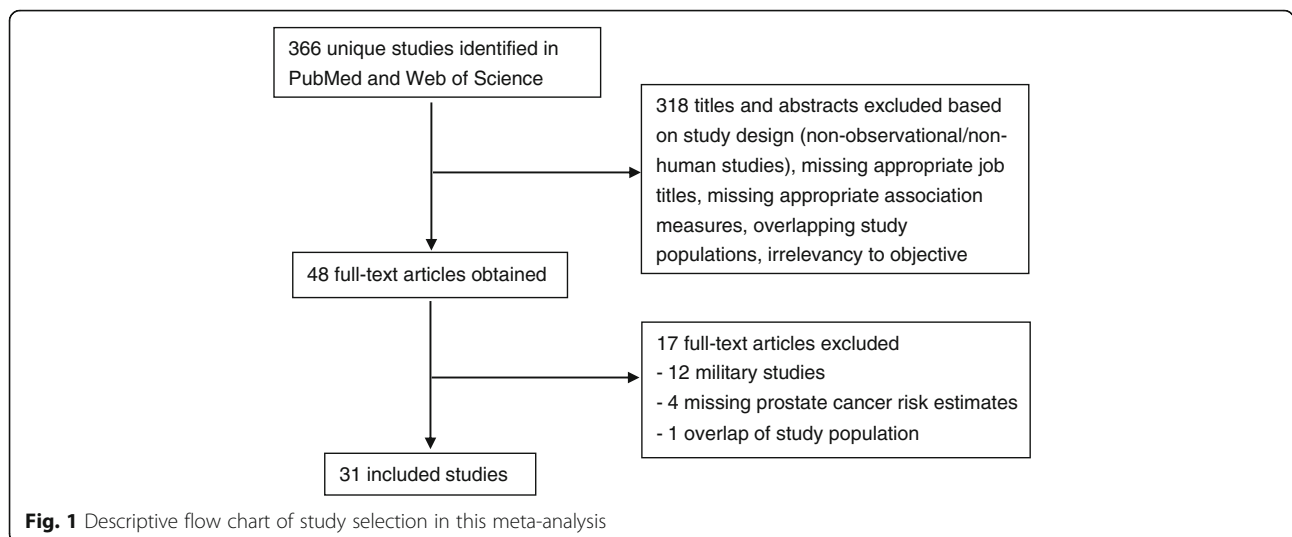


Table 1 Characteristics of included studies on firefighting and prostate cancer risk (*N* = 19)

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

^acohort size represents the total sample size in only cohort studies, and the total number of cases is only applicable to case–control studies

^bHR – 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

^acohort size represents the total sample size in only cohort studies, and the total number of cases is only applicable to case–control studies

^bHR – 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
Sriitharan 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
Sriitharan 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
Sriitharan 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

^acohort size represents the total sample size in only cohort studies, and the total number of cases is only applicable to case–control studies

^bHR – 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	
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

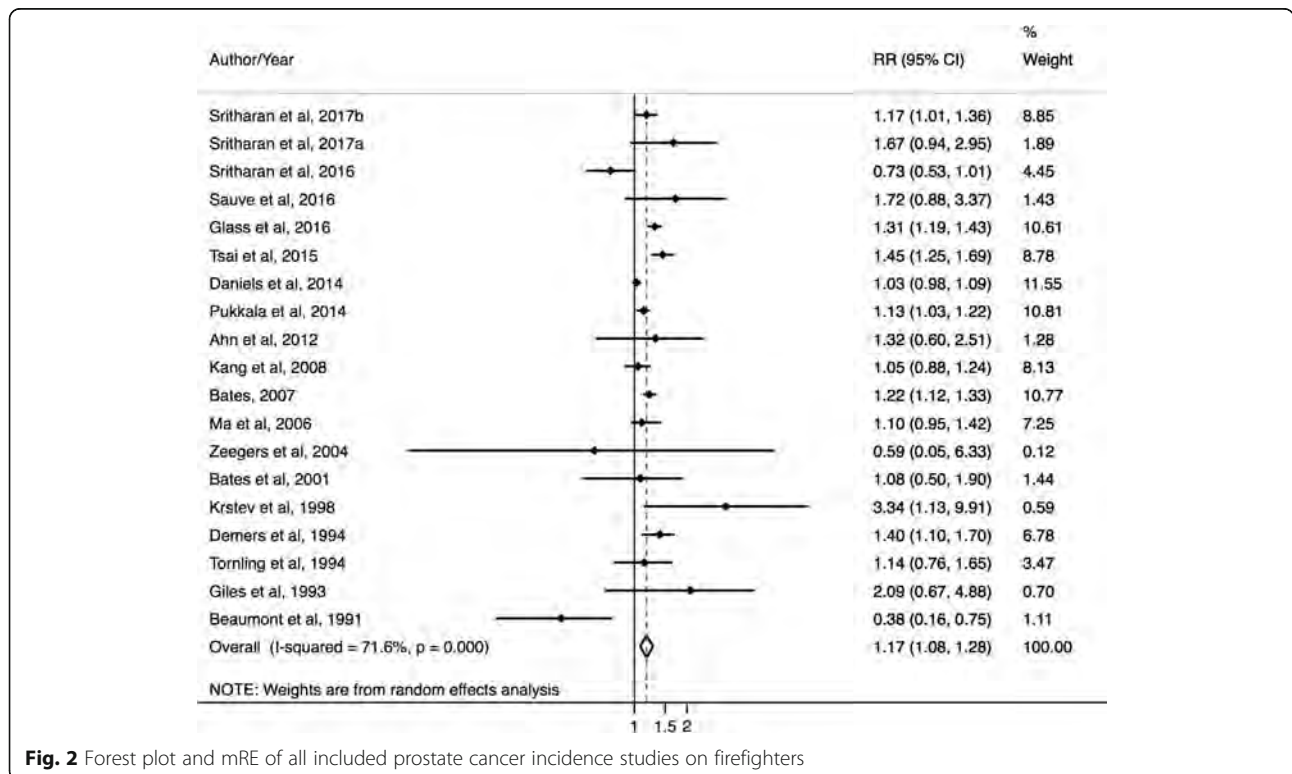


Fig. 2 Forest plot and mRE of all included prostate cancer incidence studies on firefighters

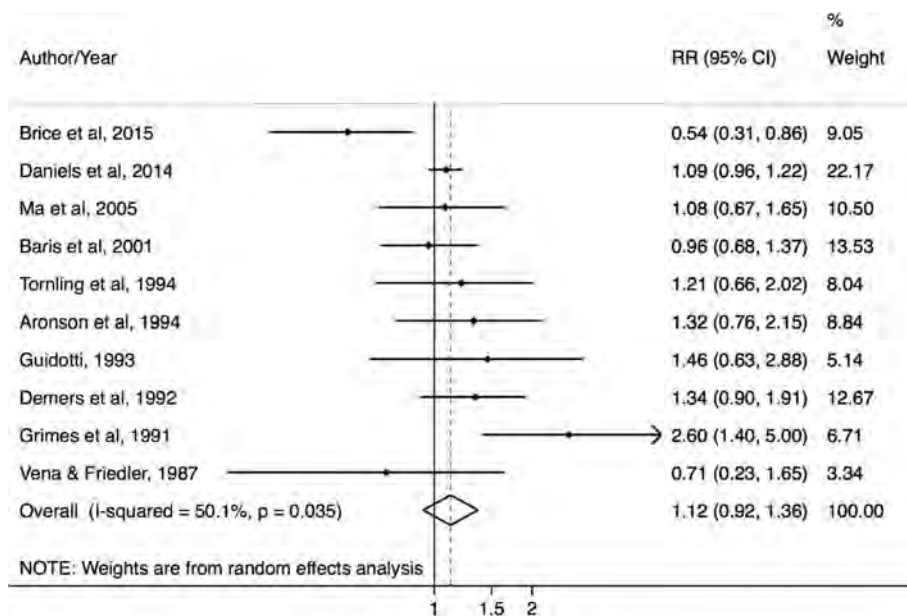


Fig. 3 Forest plot and mRE of all included prostate cancer mortality studies on firefighters

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;

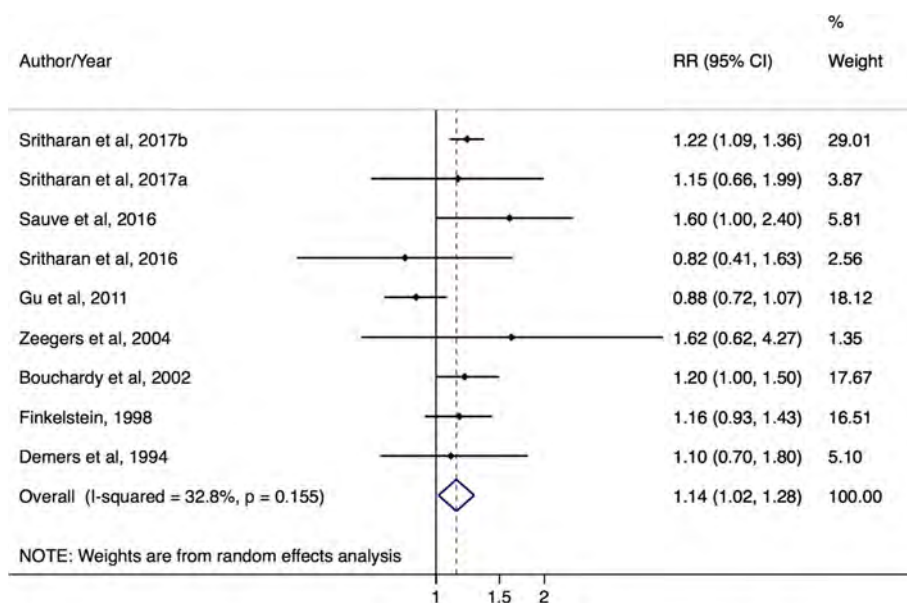


Fig. 4 Forest plot and mRE of all included prostate cancer incidence studies on police workers

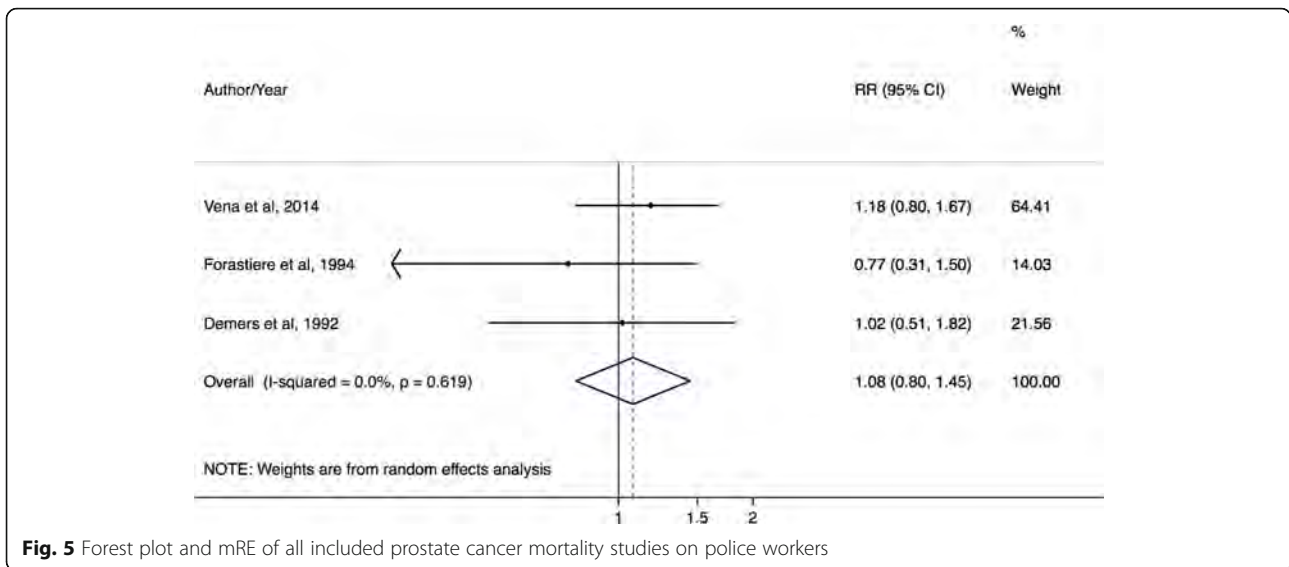


Fig. 5 Forest plot and mRE of all included prostate cancer mortality studies on police workers

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 NO₂ 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.

Publisher’s Note

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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

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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

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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-Marín 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

^aIndividuals 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.

^bSubtotal after benign/in-situ tumors, non-first primary cancer, multiple record, and gender exclusions.

Odds Ratios for Various Cancers Among Firefighters—All Races Combined, California, 1988–2007

TABLE II

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.

^aControls 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%, 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).

^bAdjusted for age of diagnosis, race, and year of diagnosis.

^cHistorical 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.

^dHistorical 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; 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

Cancer	SEER code	Number of firefighters		
		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; 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%, 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

CONSENT CALENDAR
February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Dee Williams-Ridley, City Manager
 Submitted by: Abraham Roman, Fire Chief
 Subject: Contract – Wildland Res Mgmt. for Community Wildfire Protection Plan (CWPP)

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.

FISCAL IMPACTS OF RECOMMENDATION

The base term of this contract is one year and runs from February 9, 2022 to February 8, 2023 in an amount not to exceed \$200,000. There is an option to extend for an additional four years for a total term of five years. Funding for the employee wellness program is budgeted in the from the Measure FF, 164-72-742-835-0000-000-422-612990.

CURRENT SITUATION AND ITS EFFECTS

There are extreme threats to the entire Berkeley community from a wildfire that starts in or adjacent one of the City's hazardous fire zones. The fire threat is complex and dynamic as the environment changes with global warming. While effective prevention measures may seem obvious, contracting with experts to review the threat of wildfire, risk analysis, need for action, and community support is the proper way to proceed prior to spending a large amount of tax payer funding.

The community voted to support a comprehensive approach to this risk by passing Measure FF in November of 2020. This contract will provide the Department and the community with a roadmap to becoming as fire safe and resilient as possible through engagement of relevant stakeholders, initial and on-going risk and hazard analysis and a comprehensive CWPP.

The Department expects to have an actionable CWPP within nine (9) months.

BACKGROUND

The community voted to support a comprehensive approach to this risk by passing Measure FF in November of 2020. This contract will provide the Department and the Community with the roadmap to becoming as fire safe and resilient as possible through engagement of relevant stakeholders, expert analysis and a comprehensive CWPP.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Preventing or limiting the size of a wildfire within our community has enormous positive impacts to the environment.

RATIONALE FOR RECOMMENDATION

The Department applied for and was granted a waiver of solicitation by the City Manager. After analysis, the Department suggested contracting with Wildland Res Mgt who has a long history of identifying Wildland Fire Hazard and risk in our local region, and across the state.

Wildland Res Mgt is a consulting firm that emphasizes wildland fire management in the urban-wildland interface. Several projects entailed preparation of fire management plans for large landowners in areas of sensitive species and concerned communities. Other projects have involved the use of state-of-the-art fire behavior prediction systems or developed training programs.

Carol Rice, and Wildland Res Mgt have developed a notable "track record" and is respected for the quality of work produced; a section of projects follows. In addition, Cheryl Miller, RLA will be assisting this effort. Ms. Miller is currently the staff providing essential services to the Hills Emergency Forum, and is the Executive Director of the Diablo Fire Safe Council. In these capacities, she has worked with all jurisdictions neighboring the City of Berkeley to secure funding, develop Community Wildfire Protection Plans and develop Firewise Communities.

Below you will find a partial list of their projects including many that involve the City of Berkeley and its neighbors. Wildland Res Mgt is a local expert with significant existing regional knowledge and contacts would add significant value to the Berkeley project.

- Fire Mitigation Program Support, University of California, Berkeley
- Technical Support for Preparation of Environmental Documents, City of Oakland, Hills Emergency Forum, and Claremont Canyon Conservancy
- Wildland Fire Management Plan and Update to the Fire Hazard Reduction Plan, Lawrence Berkeley National Laboratory
- Wildfire Hazard Reduction and Resource Management Plan and Programmatic EIR/EIS East Bay Regional Park District, through LSA, Inc.
- Fire Behavior Modeling of Wildland Interface Fuels, Moraga Orinda Fire Department
- Fire Hazard Reduction Study, Orlando Lawrence Berkeley National Laboratory
- Environmental Compliance Strategy and Best Management Practices Development for Fire Management Projects in Alameda and Contra Costa Counties, Diablo Fire Safe Council, through EDAW, Inc. (now AECOM)

- Parcel-based Risk Assessment, Contra Costa Consolidated Fire Protection District
- Fire Behavior Modeling, Gaming, City of Oakland, through Amphion, Inc.
- Vegetation Management Plan of the East Bay Hills, Consortium of the Cities of Berkeley, Oakland, Piedmont, and East Bay Regional Park District, East Bay Municipal Utilities District, and University of California, through Amphion, Inc.
- Litigation Support For Fire Management Considerations After the Oakland Fire. Larson & Burnham.
- Homeowner Education Program and Hazard Reduction Guidelines Development; Berkeley City Fire Department
- Evaluation of Fire Behavior in the Berkeley/Oakland Hills; East Bay Regional Park District

ALTERNATIVE ACTIONS CONSIDERED

None.

CONTACT PERSONS

Abraham Roman, Fire Chief, (510) 981-3473

Chris Pinto, Retired Annuitant, (510) 981-3473

Attachments:

1. Resolution

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

CONTRACT: WILDLAND RES MGMT. FOR A COMMUNITY WILDFIRE PROTECTION PLAN AND ASSOCIATED ANALYTICS

WHEREAS, there are extreme threats to the entire Berkeley community from a wildfire that starts in or adjacent to one of the City’s hazardous fire zones, and

WHEREAS, the fire threat is complex and dynamic as the environment changes with global warming, and

WHEREAS, while effective prevention measures may seem obvious, contracting with experts to review the threat of wildfire, values at risk, need for action, and community support is the proper way to proceed prior to spending a large amount of tax payer funding, and

WHEREAS, the community voted to support a comprehensive approach to this risk by passing Measure FF in November of 2020, and

WHEREAS, this contract will provide the Department and the community with a roadmap to becoming as fire safe and resilient as possible through engagement of relevant stakeholders, initial and on-going risk and hazard analysis and a comprehensive CWPP.

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 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.



Office of the City Manager

CONSENT CALENDAR
February 8, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Donald E. Ellison, Interim Director of Human Resources

Subject: 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

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.

FISCAL IMPACTS OF RECOMMENDATION

The cost of this increase will be paid from salary savings derived from open positions that exist within the Human Resource Department.

CURRENT SITUATION AND ITS EFFECTS

The Public Employees' Pension Reform Act of 2013 (PEPRA) made substantial changes to public employee pension laws in California. One of those changes requires retired annuitants to be separated from employment for at least 180 days before returning to work for an employer in the same retirement system from which they receive a pension. An exception may be made if the governing body adopts a resolution to waive the waiting period for separation. The waiver allows an employer to hire a retired annuitant to perform work of limited duration, such as the elimination of backlogs, limited term special projects, and work that is in excess of what regular staff can reasonably perform.

The Human Resource Department is formally requesting Mr. Kirk Whitfield to return as a retired annuitant to support our department and the City of Berkeley with the following matters:

Mr. Whitfield will assist the Human Resource Department with access to various drives and folders needed to accomplish the many requests from external and internal customers. Having our own Information Technology person on site will help us tremendously as we onboard new employees in Human Resources, and provide quick access to the Human Resources Information System. A sample of tasks that will be fulfilled by this retiree, assists with the development and creation of Berkeley Matters,

equipment orders for laptops, computers, phones, copiers and set ups for all new employees. Lastly, Mr. Whitfield will update Ektron Intranet and City of Berkeley Human Resources website with classification specifications, memorandum of understandings and salary schedules

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable environmental effects or opportunities associated with the subject of this report.

RATIONALE FOR RECOMMENDATION

This recommendation supports the City Council's mission to provide Quality Municipal Services and a City government that is financially sound with a superior workforce

ALTERNATIVE ACTIONS CONSIDERED

None

CONTACT PERSON

Donald E. Ellison, Interim Human Resources Director, 510-981-6807.

Attachments:

1: Resolution

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

APPROVING EXCEPTION TO THE 180-DAY WAITING PERIOD TO HIRE A
CALPERS RETIRED ANNUITANT IN ACCORDANCE WITH GOVERNMENT CODE
SECTIONS 7522.56 AND 21224

WHEREAS, in compliance with Government Code Section 7522.56 the City of Berkeley must provide CalPERS this certification resolution when hiring a retiree before 180 days has passed since his or her retirement date; and

WHEREAS, Kirk Whitfield has retired from the City of Berkeley, Human Resources Department, from the position of Information Systems Support Technician, effective October 1, 2021; and

WHEREAS, Section 7522.56 requires that post-retirement employment commence no earlier than 180 days after the retirement date, which is October 1, 2021, without this certification; and

WHEREAS, the City of Berkeley hereby appoints Kirk Whitfield as an extra-help retired annuitant to perform similar duties to an Information Systems Support Technician, for the City of Berkeley of Human Resources under Government Code Section 21224, effective February 14, 2022; and

WHEREAS, the employment shall be limited to 960 hours per fiscal year; and

WHEREAS, the compensation paid to retirees cannot be less than the minimum nor exceed the maximum monthly base salary paid to other employees performing comparable duties; and

WHEREAS, the maximum base salary for this position is \$7168.00 per month and the hourly equivalent is \$41.3522, and the minimum base salary for this position is \$86,018.; and

WHEREAS, the hourly rate paid to Kirk Whitfield will be \$41.3522; and

WHEREAS, Kirk Whitfield has not and will not receive any other benefit, incentive, compensation in lieu of benefit or other form of compensation in addition to this hourly pay rate.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Berkeley as follows:

The City of Berkeley hereby certifies the nature of the appointment of Kirk Whitfield

as an extra-help retired annuitant to perform similar duties to an Information Systems Support Technician, for the City of Berkeley of Human Resources under Government Code Section 21224, effective February 14, 2022, earlier than 180 days after the retirement date, which is October 1, 2021 and that this appointment is necessary to maintain compliance with the necessary functions of the Human Resource Department as it relates to the needs of Information Technology.



Office of the City Manager

11

CONSENT CALENDAR

February 8, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Jennifer Louis, Interim Chief of Police

Subject: Contract No. 31900207 Amendment: Recruiting Advertising and Marketing Strategy for the Berkeley Police Department

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.

FISCAL IMPACTS OF RECOMMENDATION

The amendment will add \$120,000 to cover the continuation of the police recruiting campaign through FY 2023. Funds for this contract will be allocated in General Fund Budget Code: 011-71-704-816-0000-000-421-612990.

CURRENT SITUATION AND ITS EFFECTS

On February 19, 2019, the City Council adopted Resolution No. 68,758 authorizing the City Manager to execute a contract with Epic Recruiting to provide a digital marketing campaign in support of recruiting police and professional staff for the Berkeley Police Department. The contract has provided the Police Department with a professional recruiting website; cinema quality recruitment video production; branding design and photography; search engine optimization, development and launch of recruiting social media accounts; strategic ad placement campaigns using sites such as Google, YouTube, Facebook, and Instagram; assistance with posting and engaging on social media; website data analytics; a job fair booth banner, 500 recruiting pamphlets and monthly performance reports since the launch of the digital marketing campaign in September 2019.

The Berkeley Police Department must continue to be diligent and creative with its recruiting efforts in order to fill current and anticipated police and professional staff vacancies. In 2021, over 64,000 users clicked on our advertisement displayed in search engines and on all major social media platforms. Of the 64,000 users that visited the Berkeley Police Department recruitment website, approximately 4,000 users stayed and browsed the webpage. 1,602 went to the Berkeley recruitment website and clicked on *Apply Now* and provided personal contact information to Berkeley Police recruiters.

Numerous prospects have mentioned Epic's digital marketing campaign as a significant factor in considering employment at BPD.

BACKGROUND

On December 7, 2018 the City of Berkeley issued Request for Proposal No. 19-11276 for a Recruiting Advertising and Marketing Strategy for the Berkeley Police Department. After receiving four bidders, staff selected Epic Recruiting as the proposal that best met the criteria contained in the RFP.

Epic Recruiting is a digital marketing firm, and recently focuses their work towards providing online police organization recruiting services. Unlike other recruiting agencies, Epic targets the next generation of law enforcement and supports our efforts to improve and modernize existing hiring strategies. Epic uses online technologies and strategies such as online search, recruitment videos, and social networking. Professional recruitment videos for both sworn and professional employees produced by Epic can be placed on electronic billboards and on social media for a good return on investment.

This contract is a Strategic Plan Priority Project, advancing our goal to attract and retain a talented and diverse City government workforce.

The Scope of Services for the existing contract will be fulfilled in April 2022 at the conclusion of the current contract with EPIC. Additional services are required in order to continue to support recruiting efforts through an online media presence.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable environmental effects or opportunities associated with the subject of this report.

RATIONALE FOR RECOMMENDATION

The law enforcement job market is extremely competitive, with agencies across the region, state, and country aggressively recruiting the best qualified candidates from a limited pool of applicants. The Berkeley Police Department has become far more competitive and agile in its recruitment efforts, in no small part due to improved recruiting efforts by using the specialty services of Epic Recruiting. Innovative Police Officer and Public Safety Dispatcher recruiting strategies are the cornerstone for reaching and soliciting potential candidates. By continuing our digital marketing and social media advertising campaigns, the department will have a greater chance to share unique aspects of our department and our community, and highlight professional and desirable opportunities for those considering joining the department. We will remain highly competitive in our recruitment and hiring efforts, with the ultimate goal of attracting highly qualified individuals whose interests and ambitions resonate with the messages we convey. Extending the contract to April 30, 2023 will allow us to continue to recruit qualified candidates in this competitive environment.

Contract No. 31900207 Amendment: Epic Recruiting for
Recruiting Advertising and Marketing Strategy for the
Berkeley Police Department

CONSENT CALENDAR
February 8, 2022

ALTERNATIVE ACTIONS CONSIDERED

To not extend the contract, which would leave Police Department staff without strategic advertising placement, and require staff to navigate and manage social media channels and our recruiting website without the specialized support of a professional marketing firm. There would be no digital marketing or strategic ad placement, thereby returning recruiting strategies to the less effective means used in the past.

CONTACT PERSON

Peter Lee, Sergeant, Police, 510-981-5734

Attachments:

1: Resolution

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

CONTRACT NO 31900207 AMENDMENT: EPIC RECRUITING FOR RECRUITING
ADVERTISING AND MARKETING STRATEGY FOR THE BERKELEY POLICE
DEPARTMENT

WHEREAS, Epic Recruiting has provided professional, cinema quality recruiting videos, developed social media and recruiting products, and provides specialized online police recruiting services for the Berkeley Police Department; and

WHEREAS, the Berkeley Police Department has had an increase in the number of potential applicant contacts through Epic Recruiting's branding and marketing strategies; and

WHEREAS, in 2018, four prospective vendors submitted proposals in response to the RFP to provide Recruiting Advertising and Marketing Strategies; and

WHEREAS, Epic Recruiting was ranked highest by the selection panel as the vendor that best met the criteria listed in the RFP; and

WHEREAS, June 17, 2019, the City entered into a contract with Epic Recruiting to provide the Berkeley Police Department with web design, video production, photography, branding, and social media/digital marketing with the goal of increasing the number of qualified recruit and lateral applicants; and

WHEREAS, the Scope of Services for the contract will be fully met on April 30, 2022, and is approaching the authorized not to exceed amount of \$190,000, and additional advertising and recruiting services are required to fill Police Department vacancies; and

WHEREAS, funds for the additional Scope of Work in the amount of \$120,000 will be provided from the following General Fund Budget Code: 011-71-704-816-0000-000-421-612990.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is hereby authorized to execute an amendment, and any follow up amendments to Contract No. 31900207 with Epic Recruiting in an amount of \$120,000 for a total contract amount not-to-exceed \$310,000 for continued recruiting, advertising and marketing strategies and extending the term through April 30, 2023.



Peace and Justice Commission

CONSENT CALENDAR

February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Peace and Justice Commission
 Submitted by: George Lippman, Chair, Peace and Justice Commission
 Subject: Resolution supporting immigration reform for the U.S.

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.

FISCAL IMPACTS OF RECOMMENDATION

None

CURRENT SITUATION AND ITS EFFECTS

Refugees fleeing dire situations in their home countries are receiving inhumane treatment upon arriving at the borders of the United States. President Biden has retained Donald Trump's Title 42 policy, which misuses public health authority to violate refugee law, block asylum at U.S. ports of entry, and expel people seeking refuge from danger.

At its regular meeting of November 1, 2021, the Peace and Justice Commission adopted the attached resolution:

M/S/C: (Bohn/Meola)

Ayes: Bohn, Gussman, Jacquilin, Lee, Leon-Maldonado, Lippman, Maran, Meola, Morizawa, Rodriguez.

Noes: None.

Abstain: None.

BACKGROUND

When entering office, President Biden promised a humane immigration policy and a departure from the previous administration's cruelty toward migrants, specifically pledging to pursue policies that safeguard our security, provide a fair and just system that helps to grow and enhance our economy, and secure our cherished values.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable environmental effects related to the recommendation in this report.

RATIONALE FOR RECOMMENDATION

When entering office, President Biden promised a humane immigration policy and a departure from the previous administration's cruelty toward migrants, but has not made adequate changes.

ALTERNATIVE ACTIONS CONSIDERED

None

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission's Report.

CONTACT PERSON

Okeya Vance-Dozier, Peace and Justice Commission Secretary, City Manager's Office,
(510) 529-5376

Attachment

1: Resolution

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

SUPPORT IMMIGRATION REFORM FOR THE U.S.

WHEREAS, the Peace and Justice Commission advises the City Council on all matters relating to the City of Berkeley's role in issues of peace and social justice (Berkeley Municipal Code Chapter 3.68.070); and

WHEREAS, when entering office, President Biden promised a humane immigration policy and a departure from the previous administration's cruelty toward migrants, pledging specifically to pursue the following policies that safeguard our security, provide a fair and just system that helps to grow and enhance our economy, and secure our cherished values:

- Take urgent action to undo Trump's damage and reclaim America's values
- Modernize America's immigration system
- Welcome immigrants in our communities
- Reassert America's commitment to asylum-seekers and refugees
- Tackle the root causes of irregular migration
- Implement effective border screening;¹ and

WHEREAS, many months into the Biden Administration, migrants continue to face mass deportation and detention camps operated under Trump have been reopened;² and WHEREAS, Congressmembers Zoe Lofgren and Lou Correa led an additional 22 Members of the California Delegation, including U.S. Senator Alex Padilla, in sending a letter to the Department of Homeland Security Secretary Alejandro Mayorkas urging the immediate closure of two privately owned and operated ICE detention facilities, Adelanto ICE Processing Center and Otay Mesa Detention Facility, and an end to the Intergovernmental Service Agreement (IGSA) between ICE and Yuba County Jail, the last ICE contract with a public facility in California, all cited by courts and ICE itself for multiple constitutional violations;³ and

¹ "The Biden Plan for Securing Our Values as a Nation of Immigrants," 2020, <https://joebiden.com/immigration/>

² "Biden and the Border: Immigration and Border Policy Under Biden," Institute for Policy Studies, October 19, 2021, <https://ips-dc.org/events/biden-and-the-border-immigration-and-border-policy-under-biden/> and

"'We're done:' Immigration advocates stage walkout on Biden administration," [Politico, October 16 2021, https://www.politico.com/news/2021/10/16/immigration-advocates-walk-out-biden-516122,](https://www.politico.com/news/2021/10/16/immigration-advocates-walk-out-biden-516122)

³ California Collaborative for Immigrant Justice, October 21, 2021, <https://ccijjustice.org/breaking-24-members-of-congress-led-by-lofgren-and-correa-urge-closure-of-3-ice-detention-centers-in-ca/>

WHEREAS, on October 15, 2019, the Council of the City of Berkeley adopted a resolution in support of protections from deportation and a path to permanent residency for beneficiaries of Deferred Action for Childhood Arrivals (DACA), Temporary Protected Status (TPS), and Deferred Enforced Departure (DED);⁴ and

WHEREAS, according to Human Rights First, “President Biden’s administration continues to embrace and defend, rather than end, the Trump administration’s ‘Title 42’ policy, which misuses public health authority to violate refugee law, block asylum at U.S. ports of entry, and expel people seeking refuge from danger. The suffering of families, adults, and children subjected to this policy continues to mount, with at least 7,647 kidnappings and other attacks on people blocked or expelled under Title 42 [or other U.S. immigration programs] since President Biden took office.” In September 2021 alone, “the Biden administration used this policy to illegally expel nearly 8,000 Haitians to life-threatening insecurity in Haiti. The U.S. Department of State’s top legal expert, former Yale Law School Dean Harold Koh, resigned from the Department in October 2021 after concluding that the Biden administration’s continued use of Title 42 to expel people seeking protection is illegal and inhumane;”⁵ and

WHEREAS, United States government documents detail over 160 internal reports of misconduct and abuse of asylum seekers at the hands of U.S. officials, Human Rights Watch said in a report released October 21. The documents report abuse by Customs and Border Protection (CBP) officers, Border Patrol agents, and Immigration and Customs Enforcement (ICE) officials, primarily between 2016 and 2021.⁶

THEREFORE BE IT RESOLVED that the Council of the City of Berkeley requests the City Clerk to send a copy of this resolution to President Biden to urge him to honor his promise for a humane immigration policy and a departure from the previous administration’s cruelty toward migrants, support of protections from deportation, and a path to permanent residency for beneficiaries of Deferred Action for Childhood Arrivals, Temporary Protected Status, and Deferred Enforcement Departure, and for the closure

⁴ “Resolution: Protect from deportation beneficiaries of DACA, TPS, and DED,” Berkeley City Council, October 15, 2019, https://www.google.com/url?client=internal-element-cse&cx=017385055954264103894:kn5xiwd8ubm&q=https://www.cityofberkeley.info/Clerk/City_Council/2019/10_Oct/Documents/2019-10-15_Item_16_Resolution_Protect_from_Deportation.aspx&sa=U&ved=2ahUKEWj684yr9d7zAhVZpniEHVT6COUQFnoECAQQAg&usg=AOvVaw2qNYQATN_6gYxkGEt-Gw_k

⁵ “‘Illegal and Inhumane:’ Biden Administration Continues Embrace of Trump Title 42 Policy as Attacks on People Seeking Refuge Mount,” Human Rights First, October 2021, <https://www.humanrightsfirst.org/sites/default/files/IllegalandInhumane.pdf> “

⁶ “US Records Show Physical, Sexual Abuse at Border: Newly Obtained Documents Reveal Urgent Need for Justice, Reform,” <https://www.hrw.org/news/2021/10/21/us-records-show-physical-sexual-abuse-border>

of ICE detention facilities Adelanto ICE Processing Center and Otay Mesa Detention Facility, and the Yuba County Jail, and that copies of this resolution also be sent to Senator Dianne Feinstein, Senator Alex Padilla, and Representative Barbara Lee.



Peace and Justice Commission

13

CONSENT CALENDAR
February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Peace and Justice Commission
 Submitted by: George Lippman, Chair, Peace and Justice Commission
 Subject: Resolution in Support of Justice for Haitian Refugees

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.

BACKGROUND

On September 19, 2021 images emerged “which appear to show border agents on horseback driving migrants [from Haiti] back to a river;”¹ according to the BBC, and “Border Patrol agents on horseback [hounded] Haitian migrants near the US-Mexico border, more than 14,000² of whom were camped under the Del Rio bridge....” according to Vox.com.

According to Vox.com, “Haitians have sought asylum at US borders for decades, but every presidential administration since the 1970s has treated Haitians differently than other migrant groups, rejecting asylum claims, holding them longer in detention, and making it harder for them to settle down in safety.”³

At its regular meeting of October 4, 2021, the Peace and Justice Commission unanimously proposed the attached resolution for the City Council to condemn the policy and tactics of deporting Haitian immigrants underway on American soil.

¹ <https://www.bbc.com/news/world-us-canada-58637116>: “The pictures taken by AFP photographer Paul Ratje show Haitians going back and forth across the border to get food for their families, and finding themselves blocked by the horses.” <https://www.vox.com/22689472/haitian-migrants-asylum-history-violence>: “The uniformed men swung their long horse reins — which many interpreted as whips — to keep the migrants from crossing into Texas. In one photo, an agent grabbed the T-shirt of a migrant, while another shouted in a video, “Get out now! Back to Mexico!”

² <https://www.nytimes.com/2021/09/23/us/haitian-migrants-texas-camp.html>

³ <https://www.vox.com/22689472/haitian-migrants-asylum-history-violence>

M/S/C: (Tregub/Rodriguez)

Ayes: Gussman, Jacquelin, Lee, Lippman, Maran, Meola, Morizawa, Perry, Rodriguez, Tregub

Noes: None.

Abstain: None.

FISCAL IMPACTS OF RECOMMENDATION

Minimal staff time associated with the sending of a letter.

CURRENT SITUATION AND ITS EFFECTS

The Haitian refugee crisis is rooted in recent as well as historical events. The current wave of migrants is fleeing a nation that just this summer experienced both a magnitude 7.2 earthquake and storm that killed approximately 2200 people and the assassination of Haiti's former president, which exacerbated violence and instability, all while the nation has yet to recover from a 2010 earthquake that affected three million people and irreparably destroyed infrastructure.⁴

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable direct environmental impacts or opportunities associated with the subject of this report.

RATIONALE FOR RECOMMENDATION

Both the Peace and Justice Commission and City Council have a long history of standing up for the rights of refugees, and the City of Berkeley has been proud to be designated a sanctuary city since the 1970s. Regardless of which presidential administration is in power, this recommendation is consistent with numerous resolutions and letters sent by the City of Berkeley on similar subject over the course of several decades.

ALTERNATIVE ACTIONS CONSIDERED

None.

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission's Report.

⁴ <https://www.vox.com/22689472/haitian-migrants-asylum-history-violence>

CONTACT PERSON

George Lippman, Chair, Peace and Justice Commission.

Okeya Vance-Dozier, Peace and Justice Commission Secretary, City Manager's Office,
(510) 529-5376.

Attachments:

1. Resolution

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

SUPPORT OF JUSTICE FOR HAITIAN REFUGEES

WHEREAS on September 19, 2021 images emerged “which appear to show border agents on horseback driving migrants [from Haiti] back to a river;”^[1] according to the BBC, and “Border Patrol agents on horseback [hounded] Haitian migrants near the US-Mexico border, more than 14,000^[2] of whom were camped under the Del Rio bridge...” according to Vox.com; and

WHEREAS according to Vox.com, “Haitians have sought asylum at US borders for decades, but every presidential administration since the 1970s has treated Haitians differently than other migrant groups, rejecting asylum claims, holding them longer in detention, and making it harder for them to settle down in safety;”^[3] and

WHEREAS the wave of Haitian migrants is fleeing a nation that just this summer experienced both a magnitude 7.2 earthquake and storm that killed approximately 2200 people and the assassination of its Haiti’s former president which exacerbated violence and instability, all while the nation has yet to recover from a 2010 earthquake that affected 3 million people and irreparably destroyed infrastructure.^[4]

NOW THEREFORE BE IT RESOLVED by the Council of the City of Berkeley that the City of Berkeley condemns the policy and tactics of deporting Haitian immigrants that are underway on American soil, is pained at the parallels between the images that came to light on September 19, 2021 and the tumultuous and traumatic past of American slavery, and questions the stark contrast between the treatment of migrants from Haiti and those seeking asylum from many other countries.

BE IT FURTHER RESOLVED that the City of Berkeley shall send to President Biden, Senators Feinstein and Padilla, and Congresswoman Barbara Lee a copy of this resolution along with a call to cease all deportation efforts against our fellow humans and respect their right to seek asylum in this country.



Peace and Justice
Commission

14

CONSENT CALENDAR
February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Peace and Justice Commission
 Submitted by: George Lippman, Chairperson, Peace and Justice Commission
 Subject: Normalize Diplomatic and Economic Relations with Cuba

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.

FISCAL IMPACTS OF RECOMMENDATION

Minimal impact to staff time.

CURRENT SITUATION AND ITS EFFECTS

The Trump administration imposed 243 new sanctions upon Cuba. Despite campaign promises, President Biden has failed to reverse the sanctions that former President Trump imposed on Cuba. Travel by American citizens to Cuba remains restricted, and Cuba remains on the state sponsors of terrorism list where Trump placed it.

The embargo continues to inflict extreme hardship on the Cuban people by creating shortages of food and medicine, severely restricting financial and trade opportunities and has even prevented Cuba from obtaining medical equipment and supplies to address the COVID-19 pandemic.

A majority of House Democrats wrote President Biden on December 16, 2021, led by four members including Rep. Barbara Lee, asking him to suspend U.S. regulations that prevent food, medicine, remittances, and other humanitarian assistance from reaching the Cuban people.

At its regular meeting of December 13, 2021, the Peace and Justice Commission unanimously proposed the attached resolution for the City Council to call for normalization of diplomatic and economic relations between the U.S. and Cuba.

M/S/C: (Bohn/Morizawa)

Ayes: Bohn, Gussman, Lippman, Maran, Morizawa, Rodriguez

Noes: None.

Abstain: None.

BACKGROUND

Beginning in October 1960, the United States government imposed an economic, commercial and financial embargo on Cuba that not only prevents most engagement and trade with the United States, but also punishes other countries that continue to engage with Cuba.

This embargo continues to inflict extreme hardship on the Cuban people by creating shortages of food and medicine, severely restricting financial and trade opportunities and has even prevented Cuba from obtaining medical equipment and supplies to address the COVID-10 pandemic.

In December 2014, U.S. President Barack Obama and Cuban President Raúl Castro announced that they would begin normalizing relations between the two countries and would establish diplomatic relations, an agreement that was enthusiastically embraced by the Cuban people.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

No identifiable impact.

RATIONALE FOR RECOMMENDATION

The Peace and Justice Commission is charged in its mandate to “advise the City Council and Berkeley Unified School District on all matters relating to peace and social justice...support for human rights and self-determination around the world...help develop proposals for the City Council and the School Board for actions in furtherance of the goals of peace and justice, and help publicize such actions in the community...initiate and develop cultural and educational foreign exchange.” It is time for the people of the U.S. and Cuba to replace embargo, sanction, and blockade with positive international exchange.

ALTERNATIVE ACTIONS CONSIDERED

None

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission’s Report.

CONTACT PERSON

Okeya Vance-Dozier, Peace and Justice Commission Secretary, City Manager's Office,
(510) 529-5376

Attachments:

1: Resolution

Exhibit A: Cuba Fact Sheet

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

NORMALIZE DIPLOMATIC AND ECONOMIC RELATIONS WITH CUBA

WHEREAS, the Peace and Justice Commission advises the City Council on all matters relating to the City of Berkeley's role in issues of peace and social justice (Berkeley Municipal Code Chapter 3.68.070); and

WHEREAS, beginning in October 1960, the United States government imposed an economic, commercial and financial embargo on Cuba that not only prevents most engagement and trade with the United States, but also punishes other countries that continue to engage with Cuba; and

WHEREAS, this embargo continues to inflict extreme hardship on the Cuban people by creating shortages of food and medicine, severely restricting financial and trade opportunities and has even prevented Cuba from obtaining medical equipment and supplies to address the COVID-19 pandemic;¹ and

WHEREAS, both the Cuban government and the United Nations have estimated that the embargo has cost the Cuban economy \$130 billion over six decades;² and

WHEREAS, in December 2014, President Barack Obama and Cuban President Raúl Castro announced that they would begin normalizing relations between the two countries and would establish diplomatic relations, an agreement that was enthusiastically embraced by the Cuban people;³ and

WHEREAS, President Obama removed Cuba from the United States state sponsors of terrorism list; and

¹ "Amnesty International Urges End to US Embargo on Cuba," February 19, 2011, <https://medicc.org/ns/amnesty-international-urges-end-to-us-embargo-on-cuba-cites-medicc/>

² "U.S. trade embargo has cost Cuba \$130 billion, U.N. says," Reuters, May 8, 2018, <https://www.reuters.com/article/us-cuba-economy-un/u-s-trade-embargo-has-cost-cuba-130-billion-u-n-says-idUSKBN11A00T>

³ "McGovern, Meeks, Lee, Rush Lead 114 Members of Congress Calling for Biden Administration to Support Human Rights & Humanitarian Needs in Cuba," December 16, 2021, <https://mcgovern.house.gov/news/documentsingle.aspx?DocumentID=398780>

WHEREAS, most Americans, including Cuban Americans, oppose the United States embargo and tens of thousands have visited the island when travel restrictions were relaxed;⁴ and

WHEREAS, the Trump administration imposed 243 new sanctions upon Cuba, including restrictions on Cuban-Americans to send remittances to families and businesses in Cuba, and reinstated Cuba to the state sponsor of terrorism list; and

WHEREAS, for each of the last 29 years, the United Nations General Assembly has overwhelmingly voted to support the end of the United States blockade against Cuba; and

WHEREAS, despite campaign promises, President Biden has failed to reverse the sanctions that former President Trump imposed on Cuba.⁵

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the Council urges President Biden to restore diplomatic relations with Cuba, including restoring the full operations of the United States Embassy in Havana; and that the well-being of the Cuban people shall be the centerpiece of United States policies towards Cuba.

BE IT FURTHER RESOLVED that the Council of the City of Berkeley urges President Biden and Congress to remove Cuba from the United States list of state sponsors of terrorism; and to immediately close the United States military base at Guantanamo Bay and return the occupied territory in Guantanamo to Cuba.

BE IT FURTHER RESOLVED that the Council of the City of Berkeley urges President Biden and Congress to immediately reverse all sanctions against Cuba by the United States and end all aspects of the United States embargo against Cuba, including restrictions on travel to Cuba by U.S. citizens and residents, so that the peoples of Cuba and the United States can freely travel between the countries.

BE IT FURTHER RESOLVED that the Council of the City of Berkeley asks the City Clerk send a copy of this resolution to President Joseph R. Biden, Secretary of State Antony J. Blinken, Senators Dianne Feinstein and Alex Padilla, and Representative Barbara Lee.

⁴ "Most Americans Support Ending Cuba Embargo Times Poll Finds," New York Times, March 21, 2016, <https://www.nytimes.com/interactive/projects/cp/international/obama-in-cuba/most-americans-support-ending-cuba-embargo-nyt-poll-finds>

⁵ McGovern letter

EXHIBIT A**Fact Sheet on U.S.-Cuba Relations****THE U.S. ECONOMIC BLOCKADE AGAINST CUBA**

The U.S. embargo and policies operate as a blockade against Cuba. It creates shortages of food, medicine, financial and trade opportunities and continues to inflict hardship on the men, women, and children of Cuba.

In 1960, the United States government imposed an economic, commercial, and financial embargo against Cuba. The 1996 Helms Burton Act extended the extraterritorial application of the initial embargo to apply to foreign companies trading with Cuba.

On December 17, 2014, U.S. President Barack Obama and then Cuban President Raul Castro announced a new era of relations between the two countries and agreed to reestablish diplomatic relations. Accordingly, Cuba and the U.S. re-opened their respective embassies in 2015.

The Trump administration reversed course and tightened the blockade by instituting 243 additional sanctions, including many during the pandemic. In the final days of his term, Trump placed Cuba back on the "State Sponsors of Terrorism" list. Being placed on this list exposes countries to numerous other sanctions, including restrictions on U.S. foreign assistance; a ban on defense exports and sales; certain controls over exports of dual use items; and miscellaneous financial and other restrictions.

Despite campaign promises, the Biden administration has failed to reverse any of Trump's actions and has done nothing to alleviate hardship.

On June 23, 2021, in the United Nations General Assembly a total of 184 countries supported Cuba's motion for the end of the U.S. blockade. It was the 29th year that the vote to end the embargo was overwhelming supported by the world's delegates. Only the U.S. and Israel voted to maintain the U.S. embargo. The majority of the people of the United States and the world believe this embargo is ineffective, inhumane and in violation of U.S. laws and international conventions.

CUBA'S HISTORY OF MEDICAL ACHIEVEMENTS AND INTERNATIONAL AID TO OTHER COUNTRIES

Cuba has a long history of providing international medical aid to other countries. Many of its medical personnel are directly involved in the fight against COVID-19 as members of the specially trained Henry Reeve International Medical Brigade against Disasters and Serious Epidemics. One of the first countries to offer aid to the U.S. after Hurricane

Katrina, Cuba offered to send 1,586 doctors and 26 tons of medicine. This aid was rejected by the State Department.

Over the past year alone, Cuba has sent 3,700 health workers in 52 international medical brigades to 39 countries overwhelmed by the pandemic. Cuba's international medical brigades have treated patients and saved lives for the past 15 years in 53 countries confronting natural disasters and serious epidemics, such as the Ebola crisis in West Africa. It has assisted in many epidemics around the world, including dengue fever, HIV, swine flu, and hepatitis. Despite the importance of international Cuban medical assistance, the U.S. has attempted to stop other countries from accepting Cuban medical brigades, even claiming that Cuba's medical brigades represent a form of human trafficking.

In 2015 the World Health Organization recognized Cuba's medical system as a worldwide leader in biotechnology, and Cuba has made significant contributions to the international medical field, including a drug that prevents 77% of diabetic amputations.

Early in the pandemic, Cuba developed effective treatment regimens for patients and prevention protocols for health workers, including its drug Interferon Alpha 2B Recombinant and community-based treatment and contact tracing.

Cuba has developed five internationally recognized candidate COVID-19 vaccines. By the end of October 2021 more than 98% of Cuba's 11.3 million people had received at least a first shot of a three-dose immunization regimen with Cuban-made vaccines (Abdala, Soberana-2 and Soberana-plus). More than 60% of the population, ages 2 and older, had been fully vaccinated. Cuba is very likely to reach its goal of 98% fully vaccinated by December 2021. Cuba also plans to produce millions of doses of its vaccines, beyond what is needed domestically, to meet its commitment to sharing its low-cost vaccines with poor countries in the developing world.

There is precedent for collaborative initiatives between Cuba and U.S. cities. A few examples include San Francisco CA, Seattle WA, Minneapolis MN, Chicago IL, Pittsburgh PA, Cambridge, MA, which all overwhelmingly passed a resolution supporting medical collaboration.

There have also been multi-year joint ventures between Cuba's Center for Molecular Immunology and Buffalo's Roswell Park Comprehensive Cancer Center in developing CIMAvax, the Cuban lung cancer vaccine, as well as a collaboration between medical personnel from Cuba and the University of Illinois on infant mortality in Chicago.

The U.S. blockade of Cuba has severely restricted collaboration on scientific and medical research. The blockade not only causes great harm to Cuba, it also denies U.S. citizens access to Cuban medical technology such as the diabetes drug Heberpot-P, vaccines for meningitis B and hepatitis B, monoclonal antibodies for kidney transplants, as well as the

only therapeutic vaccine in the world against advanced lung cancer, called CIMA V AX-EGF.

EFFORTS IN THE U.S. TO END THE BLOCKADE AND PROVIDE HUMANITARIAN RELIEF TO CUBA

There are hundreds of organizations throughout the world that are working to end the blockade against Cuba. In the U.S., the National Network on Cuba (NNOC) and its 58 local, state and national organizations throughout the country stand in solidarity with Cuba and have been working diligently to end the blockade:

- Over 40 resolutions have been passed by churches, city councils, labor unions, state legislators and school boards to call for the end of the U.S. blockade against Cuba. These resolutions represent the will of 41 million people in the United States.
- Car and bike caravans in support of Cuba occur monthly in Miami and other cities across the U.S. and around the world.
- The University of Minnesota leaders commenced and continue formal medical collaboration with Cuba to battle COVID-19.
- Federal legislation to end the embargo (S.249, H.R.3625) and other bills in support of Cuba (S.1694, H.R.198) is pending,
- U.S. residents generously donated more than \$680,000 to send over 6 million syringes to Cuba to enable Cuba to administer its COVID-19 vaccines to its people
- U.S. residents are providing humanitarian aid to Cuba by raising funds to purchase and ship food and medical supplies to counter the shortages caused by the blockade and Trump sanctions.
- IFCO/Pastors for Peace, Code Pink, Altruistas, Marazul Tours, and Building Relations with Cuban Labor have regular delegations to Cuba so that U.S. residents can experience Cuba themselves and see how the U.S. blockade affects the people of Cuba.

Rev.20211108

Sources:

National Network on Cuba

<http://nnoc.info>

IFCO-Pastors for Peace

<https://ifconews.org>



Peace and Justice
Commission

15

CONSENT CALENDAR
February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Peace and Justice Commission
 Submitted by: George Lippman, Chairperson, Peace and Justice Commission
 Subject: Japanese American Day of Remembrance

RECOMMENDATION

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.

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.

FISCAL IMPACTS OF RECOMMENDATION

Minimal impact to staff time.

CURRENT SITUATION AND ITS EFFECTS

On the 80th anniversary of Executive Order 9066, it is important to remember the unconstitutional and ethnically discriminatory incarceration of 120,000 people of Japanese ancestry at the onset of World War II.

Up to the present day, the U.S. government has failed to meet international obligations to make reparation for wartime human rights violations to over 2200 Japanese Latin Americans forcibly deported to the U.S.

The incarceration of Japanese Americans and Japanese Latin Americans is part of a long history of racial prejudice and hate that continues to today. In 2020, there was a rise in anti-Asian hate and violence across the United States, resulting in people of AAPI ancestry being killed, beaten, and harassed without provocation.

At its regular meeting of December 13, 2021, the Peace and Justice Commission unanimously proposed the attached resolution for the City Council to address anti-Asian racism, and to adopt in perpetuity February 19 as the Japanese American Day of Remembrance in Berkeley.

M/S/C: (Morizawa/Rodriguez)

Ayes: Bohn, Gussman, Lippman, Maran, Morizawa, Rodriguez

Noes: None.

Abstain: None.

BACKGROUND

On February 19, 1942, President Franklin Roosevelt signed Executive Order 9066, which resulted in the federal government forcibly removing and incarcerating around 120,000 people of Japanese ancestry, including 75,000 United States citizens and 1,300 Berkeley residents solely because of their Japanese ancestry.

Despite thousands of Japanese Americans losing their homes and economic livelihoods, many thousands of young Japanese American people bravely took up arms and sacrificed their lives to defend this country which wrongly incarcerated them.

The US government instituted an extraordinary rendition program during World War II whereby over 2200 people of Japanese ancestry were seized from 13 Latin American countries, transported to the US and interned in Department of Justice camps, and over 800 were used in hostage exchanges for US citizens.

The Civil Liberties Act of 1988, signed into law by President Ronald Reagan, states that the United States apologizes for the forced removal and incarceration of the Japanese Americans.

In 2017, the City of Berkeley acknowledged a day of remembrance for those affected by Japanese American mass incarceration and recognized the Japanese community's rich history and profound contributions to the City of Berkeley.

While racism and scapegoating increased in 2020-21, it is not new and is part of an over 150-year history of violence and hate against AAPI people and even longer for other communities who continue to be marginalized.

The unjust incarceration of around 120,000 Japanese Americans without charge or a fair hearing must serve as a potent reminder that this nation's character is reflected in how it treats its citizens, immigrant residents, and those seeking safety and refuge from violence, hate, and climate change.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

No identifiable impact.

RATIONALE FOR RECOMMENDATION

The Peace and Justice Commission is charged in its mandate to “advise the City Council and Berkeley Unified School District on all matters relating to peace and social justice...support for human rights and self-determination around the world...help develop proposals for the City Council and the School Board for actions in furtherance of the goals of peace and justice, and help publicize such actions in the community...initiate and develop cultural and educational foreign exchange.”

Reconciliation must come from speaking truth. Without recognition of the human rights violations that our government committed against Japanese Americans 80 years ago, we cannot hope to end the continuing pattern of anti-Asian racism in the community.

ALTERNATIVE ACTIONS CONSIDERED

None

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission’s Report.

CONTACT PERSON

Okeya Vance-Dozier, Peace and Justice Commission Secretary, City Manager’s Office,
(510) 529-5376

Attachments:

1: Resolution

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

JAPANESE AMERICAN DAY OF REMEMBRANCE

WHEREAS, the Peace and Justice Commission advises the City Council on all matters relating to the City of Berkeley's role in issues of peace and social justice (Berkeley Municipal Code Chapter 3.68.070); and

WHEREAS, 80 years ago, on February 19, 1942, President Franklin D. Roosevelt signed Executive Order 9066, which resulted in the federal government forcibly removing and incarcerating around 120,000 people of Japanese ancestry, including 75,000 United States citizens and 1,300 Berkeley residents solely because of their Japanese ancestry; and

WHEREAS, this Executive Order was in violation of United States Constitutional rights and human rights, the government removed and incarcerated an entire ethnicity claiming it was on the grounds of national security and military necessity; and

WHEREAS, despite thousands of Japanese Americans losing their homes and economic livelihoods, many thousands of young Japanese American people bravely took up arms and sacrificed their lives to defend this country which wrongly incarcerated them; and

WHEREAS, the US government instituted an extraordinary rendition program during World War II whereby over 2200 people of Japanese ancestry were seized from 13 Latin American countries, transported to the US and interned in Department of Justice camps, and over 800 were used in hostage exchanges for US citizens;¹ and

WHEREAS, after WWII, while most interned Japanese Latin Americans were forcibly deported to US-occupied Japan, over 300 were able to remain in the US, some in the San Francisco Bay Area, including in the city of Berkeley; and

WHEREAS, in 1983, the federal Commission on the Wartime Relocation and Internment of Civilians found that the incarceration of Japanese Americans was not justified by military necessity and were not based in military analysis; instead, the unjust incarceration was based on "race prejudice, war hysteria, and a failure of political leadership;" and

¹ For more information see "Americans Forgotten Internment," *Politico*, December 5, 2021, <https://www.politico.com/news/magazine/2021/12/05/japanese-latinos-us-war-hostages-history-523711>

WHEREAS, the Civil Liberties Act of 1988, signed into law by President Ronald Reagan, states that the United States apologizes for the forced removal and incarceration of the Japanese Americans; and

WHEREAS, the US government failed to include Japanese Latin American internees in its initial redress bill and continues to disregard the 2019 decision of the Inter-American Commission on Human Rights (a body of the Organization of American States) affirming its obligation to make reparation for both “material and moral dimensions” of wartime human rights violations perpetrated against Japanese Latin Americans; and

WHEREAS, in 2017, the City of Berkeley acknowledged a day of remembrance for those affected by Japanese American mass incarceration and recognized the Japanese community’s rich history and profound contributions to the City of Berkeley; and

WHEREAS, the incarceration of Japanese Americans and Japanese Latin Americans is part of a long history of racial prejudice and hate that continues to today; in 2020, there was a rise in anti-Asian hate and violence across the United States, resulting in people of AAPI ancestry being killed, beaten, and harassed without provocation; and

WHEREAS, this rise in racial prejudice and hate was due to the media and rhetoric used by past political leaders resulting in the first spike in hate crimes in March and April 2020, whereas the reported hate crimes against AAPI people in 16 of the United States’ largest cities and counties were up 145% in 2020.²

WHEREAS, Stop AAPI Hate, a national coalition aimed at addressing anti-Asian discrimination amid the pandemic, documented 10,370 incidents of hate incidents from March 19, 2020, to September 30, 2021; and

WHEREAS, while racism and scapegoating increased in 2020-21, it is not new and is part of an over 150-year history of violence and hate against AAPI people and even longer for other communities who continue to be marginalized; and

WHEREAS, for decades, systemic oppression and implicit bias against people of AAPI ancestry has resulted in the silencing of AAPI voices, the stifling of careers, and contributing to the invisibility of AAPI achievements and struggles; and

² Center for the Study of Hate and Extremism at California State University, San Bernardino.
<https://search.yahoo.com/yhs/search?hspart=mnet&hsimp=yhs-001&type=type9099612-spa-3503-84593¶m1=3503¶m2=84593&p=Center+for+the+Study+of+Hate+and+Extremism+at+California+State+University%2C+San+Bernardino>

WHEREAS, in 1882, the Chinese Exclusion Act banned all Chinese people from immigrating to the United States, which led to the Immigration Act of 1924, which banned immigration from all Asian or Pacific countries; and

WHEREAS, throughout the United States' history, this prejudice, discrimination, and violence have impacted all people of AAPI descent; and

WHEREAS, the U.S. government, including law enforcement, has discriminated against the AAPI, Black, Latin, Native American, LGBTQ+ and other marginalized communities, escalating the hate and violence they are supposed to prevent; and

WHEREAS, the incarceration of around 120,000 Japanese Americans without charge or a fair hearing must serve as a potent reminder that this nation's character is reflected in how it treats its citizens, immigrant residents, and those seeking safety and refuge from violence, hate, and climate change; and

WHEREAS, the Berkeley Chapter of the Japanese American Citizens League and the UC Berkeley Nikkei Student Union have requested that the Berkeley City Council take this action.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that Berkeley calls on local and national media outlets, elected officials, and community leaders to denounce racial discrimination, white supremacy, and xenophobia and continue to highlight stories of achievements and experiences of hate crimes, violence, and harassment based on one's ancestry or appearance.

BE IT FURTHER RESOLVED by the Council of the City of Berkeley that Berkeley collaborate with AAPI communities, including Pacific Islanders, Native Hawaiians, and all immigrant communities, as well as all marginalized communities to create community programs and advocate for policy and legislation that will support community building and safety.

BE IT FURTHER RESOLVED by the Council of the City of Berkeley that Berkeley collaborate with community-based organizations to address systemic barriers for reporting anti-Asian hate crimes by mitigating language or cultural barriers, or fear of immigration status repercussions.

BE IT FURTHER RESOLVED by the Council of the City of Berkeley that Berkeley adopt in perpetuity February 19 as the Japanese American Day of Remembrance in recognition of Japanese Americans and Japanese Latin Americans who were victims of mass incarceration in this country; and in 2022 urge Berkeley residents to tour the UC Bancroft Library exhibit, *Uprooted: The Incarceration of Japanese Americans* and attend the UC Berkeley Nikkei Student Union (<https://nsu.berkeley.edu/>) and the Bay Area annual Day of Remembrance (njahs.org) commemorations.



Kate Harrison
Councilmember District 4

16

CONSENT CALENDAR
February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Vice Mayor Harrison, Mayor Arreguín, Councilmembers Bartlett and Wengraf
 Subject: Budget Referral and Resolution Establishing City Process for Siting and Developing Public Electric Vehicle DC Fast-charging Hubs

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.

PROPOSED POLICY COMMITTEE

Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee.

CURRENT SITUATION, EFFECTS, AND RATIONALE FOR RECOMMENDATION

The world is facing a grave climate emergency, requiring municipalities to transition to a zero-carbon economy by 2030. According to Berkeley's 2019 greenhouse gas emissions (GHGs) inventory, 60% of Berkeley's sector-based¹ emissions result from

¹ Emissions created in the City, as opposed to consumption-based emissions, i.e., those created by the goods Berkeleyans consume.

transportation.² In addition to public transportation, walking, biking and scooters, replacing internal combustion engine cars with EVs will be a major factor in reducing emissions. EVs are significantly less carbon intensive to operate and save drivers money through reduced fuel, operations and maintenance costs.

EVs also represent an increasing share of registered vehicles as a result of market forces and state regulations. The latest models of battery electric vehicles (BEV) feature extended range that rivals internal combustion engine cars at competitive pricing, especially when factoring federal and state incentives, and volatile gasoline cost savings. Most major automobile manufacturers in the United States plan to offer full lines of battery electric vehicles (BEVs) at a similar price to internal combustion engine cars, without subsidies, by 2030. Finally, per Governor Newsom's Zero-Emission by 2035 Executive Order (N-79-20) the California Air Resources Board is expected to develop regulations that mandate that all in-state sales of new passenger cars and trucks be zero-emission by 2035.³

According to U.S. Department of Energy data from 2020, 42% of all EVs in the United States are registered in California.⁴ BEV sales in Alameda County have increased nearly 430% since 2015, and for the first three quarters of 2020 Alameda County saw 8,624 BEV sales.⁵ By the end of 2020 there were 46,239 BEV and plug-in hybrid vehicles (PHEV) countywide, or approximately 4% of all existing vehicles. Of the over 60,000 vehicles registered in Berkeley,⁶ approximately 3,650 are EVs (both BEVs and PHEVs).⁷ Berkeley's Climate Action Plan sets a goal of 15,229 BEVs by 2025; achieving this will require a significant increase in publicly available fast-charging stations to ensure all residents, especially renters without access to at-home charging, have convenient refueling options.

² Berkeley's 2019 Community-Wide Greenhouse Gas Emissions Inventory, OESD, November 2021, https://www.cityofberkeley.info/uploadedFiles/Clerk/Level_3_-_City_Council/2021-11-30%20Item%2032%20Berkeley%E2%80%99s%202019%20Community-Wide%20Greenhouse%20Gas%20Emissions%20Inventory.pdf.

³ Governor Newsom's Zero-Emission by 2035 Executive Order (N-79-20), January 2021, <https://www2.arb.ca.gov/resources/fact-sheets/governor-newsoms-zero-emission-2035-executive-order-n-79-20>.

⁴ Electric Vehicles by State, U.S. Department of Energy, June 2021, <https://afdc.energy.gov/data/10962>

⁵ <https://www.energy.ca.gov/data-reports/energy-insights/zero-emission-vehicle-and-charger-statistics>

⁶ Based on DMV data.

⁷ As part of its Electric Mobility Roadmap report, OESD estimated that 3.7% of registered vehicles in Berkeley were EVs as of late 2018, Berkeley Electric Mobility Roadmap, July 2020, https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/City%20of%20Berkeley%20Electric%20Mobility%20Roadmap_2020.pdf

However, access to charging infrastructure is the primary barrier to broadscale EV adoption. Installing Level 1 or Level 2⁸ charging infrastructure in multifamily housing properties is a significant equity issue. Due to their age,⁹ many multifamily buildings require an expensive electric panel upgrade. Renters in single family homes may face the same challenge. Single family homes in Berkeley that are owner occupied but without garages also face hurdles because installing curbside charging is extremely expensive and challenging on many levels. Charging infrastructure in Berkeley is also necessary to meet the needs of visitors and commuters doing business in the city and traveling through our community. Therefore, if we are to achieve the state's goals of 1.5 million zero-emission vehicles on the road by 2025 (and 5 million by 2030), and Berkeley's CAP goals, deployment of public fast-charging infrastructure near term is critical.

In Berkeley today there are just two public direct current fast-charging (DCFC) locations at each of Berkeley's Whole Foods Market locations).¹⁰ These do not have adequate capacity to serve increasing demand for public fast-charging.

The City of Berkeley and its public power provider, EBCE, are well positioned to fill this gap by partnering to provide cost effective, conveniently located, accountable, and equitable fast-charging hubs.

EBCE and the City of Berkeley have developed the proposed non-binding term sheet under which EBCE will develop, operate, maintain and market up to three fast-charging hubs in exchange for a Site License with the city to provide EBCE with access and use of public land for the fast-charging hubs.

BACKGROUND

In 2016, Alameda County and eleven of its cities, including Berkeley, entered into a Joint Powers Agreement to form an independent public agency known as the East Bay Community Energy Authority (Authority).¹¹ The Authority launched a Community Choice Energy program, East Bay Community Energy. The purpose of EBCE is to secure electrical energy supply for residents and businesses and manage energy related

⁸ AC Level 2 EV charging offers charging through 240V or 208V electrical service (like a dryer plug) at 12-80 amps (typically 32 amps). For every hour, Level 2 EV charging can provide about 10-20 miles of range. (See Berkeley Electric Mobility Roadmap, p. 10).

⁹ Data from EBCE indicates that 90% of the multi-unit buildings in its service territory are more than 50 years old.

¹⁰ Electric Vehicle Charging Station Locations, U.S. Department of Energy, https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?fuel=ELEC&location_mode=address&location=2180%20milvia%20st.&radius=2&ev_levels=1&ev_levels=2&ev_levels=legacy

¹¹ EBCE JPA Agreement, Effective December 1, 2016 as amended by Resolution No. 2018-23 dated June 20, 2018, https://res.cloudinary.com/diactiwk7/image/upload/fl_sanitiz_e,q_auto/east-bay-community-energy-authority-jpa-agreement-12-14-19-with-newark-pleasanton-tracy-1.pdf.

climate change programs like transportation electrification. As the nonprofit, default Load Serving Entity in Berkeley, EBCE delivers electricity with higher renewable energy content at a reduced cost to residents and businesses through PG&E's transmission and distribution system.¹² In 2019, EBCE's service area expanded into San Joaquin County with the City of Tracy. Today EBCE meets the electricity needs of 60,735 commercial accounts and over 565,000 residential accounts representing 1.6 million people throughout its service area. EBCE is governed by a Board of Directors, with appointed municipal leaders from each of the Authority's member communities. As a public agency with no shareholders, EBCE reinvests revenue from the sale of electricity back into the community to help its member cities achieve their climate action and economic development goals more quickly.

As Berkeley's appointee to the EBCE Board of Directors, Vice Mayor Harrison's office and the City's Office of Energy and Sustainable Development have engaged in multiyear conversations with EBCE staff to explore options for providing Berkeley residents with affordable, equitable EV charging infrastructure. This work occurred alongside ongoing efforts by EBCE to help the City electrify its municipal fleet and building stock, and the recently adopted Council policy to upgrade citywide accounts to 100% renewable electricity.

In the summer of 2021, EBCE presented Vice Mayor Harrison with a potential partnership proposal to site EV fast-charging hubs at to be determined city-owned parking lots and garages. EBCE has provided a non-binding term sheet¹³ outlining the respective proposed responsibilities of both parties. Adopting the term sheet will facilitate a subsequent binding Service Agreement.

EBCE intends to work with the City to site the fast-charging hubs in areas with a dense concentration of multifamily housing to ensure renters, who represent nearly 50% of the population in EBCE's service territory, have equitable access to the benefits of EVs near term. To date, these areas are significantly underserved by charging infrastructure, representing a critical barrier in achieving the State of California's EV adoption goals. Each EBCE fast-charging hub will consist of 10-15 dual-port DCFC stations (up to 30 ports total).

EBCE intends to scale this approach with each of its Authority member communities Berkeley would likely be the first to move forward with this non-binding term sheet.

¹² Assembly Bill 117 (Stat. 2002, ch. 838, codified at Public Utilities Code Section 366.2)

¹³ Non-comprehensive and subject to change pursuant to ongoing conversations between the City and EBCE.

Overview of Non-binding Term Sheet

Building EV fast-charging hubs across EBCE's service territory will require significant project capital. EBCE seeks to raise this capital using a *public-public partnership* with member communities signing a Service Agreement with EBCE. The Service Agreement and associated fees (described below) will allow EBCE to raise low-cost capital and provide dividends to EBCE's Authority member communities through a profit-sharing agreement. Under the draft proposal, EBCE would develop, interconnect, own, operate and maintain the fast-charging hubs. EBCE would also finance the project(s) with their own capital, private equity and debt. EBCE will book, claim and sell Low Carbon Fuel Standard (LCFS) credits (provided through the California Air Resources Board's LCFS program) to help fund project operations.

In addition, EBCE will be responsible for procuring wholesale renewable electricity (e.g., Renewable 100) for each fast-charging hub and associated rate structures to encourage maximum utilization. EBCE will also market the fast-charging hubs, and will partner with the City and private sector stakeholders to increase EV adoption and fast-charging hub utilization.

The City of Berkeley would be responsible for an annual Service Agreement Fee of \$100,000 per EV fast-charging Hub. The contracted revenues from Service Agreement Fees will allow EBCE to raise low-cost capital to develop the fast-charging hub. Scaling this model to other member agencies will facilitate the development of a network of hubs across Alameda County.

Concurrent to the Service Agreement, EBCE and the City will execute Site License Agreements to provide access to EBCE to up to three City parking lots and/or garages to site and operate EV fast-charging hubs. The Site License will include a Site License Fee which will be paid to the City once the Net Operating Income¹⁴ from the project exceeds EBCE's annual debt service of \$500,000. As EBCE fast-charging hub utilization increases over time the Site License Fees are expected to meet and then exceed the Service Agreement fees resulting in net annual revenue to the City. The City of Berkeley will receive 40% of net proceeds from the projects. The City will also receive additional Utility Users Tax revenue and any sales tax associated with related economic activity.

¹⁴ Net Operating Income as the sum total of electricity sales and LCFS revenue minus operating costs such as electricity procurement, operations and maintenance

Under the Low Utilization Case¹⁵, the City is expected to receive a net investment profit of approximately \$51,000. Under a high utilization scenario,¹⁶ net profit is estimated at \$851,000. EBCE plans to provide the City with more detailed financing estimates. See Appendix p. 1 for details for Site License Revenue formula.

EBCE will utilize project revenue, Service Fees and EBCE capital to:

- 1) fund project operations and service debt
- 2) fund a Reserve balance equal to one year of Project Debt Service, and 3) pay dividends to EBCE (60%) and City of Berkeley (40%)

The City’s total revenue is represented by the following formula:

$$\text{Berkeley Total Revenue} = \text{Site License Revenue} + \text{Marginal UUT Revenue}$$

EBCE proposes that each fast-charging hub will have a minimum of 10 dual port charging stations and each fast-charging station will require two parking spaces. Each allocated parking space must be EV Only for the purpose of charging, and each EV fast charge hub will require compliance with the Americans with Disability Act (ADA). The City would provide free access to lots and/or garages to EV drivers for a minimum of one hour to enable use of the fast-charging stations. While the City could experience some loss of parking revenues for those individual spaces, it is expected, based on the experience of other parking structures with fast charging capacity, that more overall traffic will be driven to the parking lots for a net gain in parking revenue.

The City would work with EBCE to expedite permitting of the EV fast-charging hub(s). It would also commit to increase awareness of EV fast-charging hub availability to residents, businesses and visitors. EBCE has access to data about current EV owners and will provide targeted marketing to them as well as extensive marketing to the general public to encourage EV ownership.

EBCE has mapped multi-family housing against City-owned third-party parking lots, multi-unit dwellings, and concentration of TNC passenger pick-up and drop-off (see Appendix, p. 2). Each site will be assessed by EBCE in collaboration with City staff for technical feasibility, public service attributes (e.g., multi-family housing and retail proximity) and installation costs. EBCE’s technical assessment of proposed sites, should any of the City of Berkley’s lots and/or garages be determined infeasible for project deployment, the City would assist EBCE with connecting with other public

¹⁵ This scenario assumes an initial utilization of EV charging spaces of 1.5%, with a 1.5% growth in utilization of each space each year.

¹⁶ This scenario assumes an initial utilization of EV charging spaces of 5%, with a 1.5% growth in utilization of each space each year.

agency and/or private sector stakeholders who own strategic real estate assets suitable for EV fast-charging hub development.

Overview of Process for Supporting Non-Binding Term Sheet, Negotiating Service Agreement and Budgeting for Berkeley's Expected Service Fee

Vice Mayor Harrison's Office has convened and will continue to hold meetings between EBCE leadership and staff, the City Manager's Office, OESD, and the City Attorney's Office to review and finalize the scope of the non-binding term sheet.

This Resolution requests that the non-binding term sheet be referred to the FITES Committee to hold at least two public hearings to consider this item and the term sheet, with expected submission for Council for consideration in March, 2022. Council approval of the term sheet at that time will provide direction about the allocation to be referred to the budget process and will provide EBCE and City staff with direction to negotiate and finalize a Service Agreement following adoption of the FY '23 - '24 budget. A final Service Agreement would be submitted by staff for Council adoption.

Council adoption of this item and Resolution in support of the term sheet is a good faith effort towards partnership and reaching a binding agreement; however, it does not bind the City to any terms, agreements, or budgetary allocations.

Budgetary Considerations and Opportunities

EBCE forecasts that through the recent citywide decision to upgrade community accounts to its Renewable 100 electricity product, and the ongoing adoption of EVs, UUT revenues could increase by \$400,000-\$600,000 annually over the next 2-3 years. This does not include any additional revenue resulting from the operation of the proposed fast-charging hubs.

EBCE estimates that UUT revenues from existing Berkeley EV drivers charging on Renewable 100 would generate approximately \$105,000 per year based on 2021 EV registration figures. Therefore, a General Fund allocation of \$100,000 times three hubs per year could be justified on existing and projected UUT income from EVs alone. Further, EBCE estimates that Berkeley's ambitious goal of 15,000 EVs by 2025 could generate approximately \$1.3 million in UUT per year, plus any additional revenue from visitors who charge their EVs in Berkeley.

The City's engagement in this partnership represents an innovative and bold realization of the original premise of EBCE's founding—providing residents with affordable and clean publicly-procured electricity that reduces GHG emissions and criteria air pollutants. It also furthers the City's goals of equity and equality by providing residents

who are renters access to a zero-carbon transportation fuel that will significantly reduce emissions from Berkeley's transportation sector.

ALTERNATIVES CONSIDERED

The City could try to raise capital to fund fast-charging hub development on its own and receive LCFC credits. However, the City would need to make a significant upfront investment without the same initial level of capital access enjoyed by EBCE. The City also lacks certain expertise in terms of operating utility-level services.

The City could wait for the private market to build fast-charging infrastructure at scale. However, there are no guarantees that this will materialize in the timeframe needed to meet state and local climate action goals. Private sector owned fast-charging will not necessarily be sited in convenient or equitable locations that serve renters in multifamily housing. The City would forgo the benefits to residents of EV adoption at scale and the potential revenue from the proposed public-public profit-sharing agreement with EBCE.

JUST TRANSITION

Substituting passenger vehicle miles traveled with zero-carbon mobility will reduce GHG emissions and air pollution, which disproportionately impact frontline communities.

The item prioritizes deployment of fast-charging hubs in areas with dense concentrations of multifamily properties which will enable lower-income residents that need access to a personal vehicle to transition to EVs.

Consistent with City values and equity initiatives, the City should strive with EBCE to ensure that project investments support prevailing wage and other labor standards, and minority-owned contractors.

FINANCIAL IMPLICATIONS

This item would result in investments of \$100,000/year per hub across three hubs for 10 years, reduced by any Site License Fee revenues remitted by EBCE to the City. Under the low and high hub utilization scenarios, EBCE estimates the City will likely recoup its investment via Site License fees after 8-10 years, depending on utilization.¹⁷ The City would likely see net profits from Site License Revenue estimated at between \$51,000 and \$851,000. In addition, EBCE estimates that there will be an additional \$400k-\$600k in Utility User Tax proceeds annually over next 2-3 years due to existing City policies, and up to \$1.3 million per year by 2025 if Berkeley meets its EV adoption goals.

ENVIRONMENTAL SUSTAINABILITY

Supporting incentives for building decarbonization will complement and accelerate

¹⁷ Not including any increase in UUT that the City collects.

Budget Referral and Resolution Establishing City Process for Siting and
Developing Public Electric Vehicle DC Fast-charging Stations

CONSENT CALENDAR
February 8, 2022

Berkeley's ongoing efforts to reduce carbon emissions at an emergency and equitable pace in line with the Climate Action Plan, Climate Emergency Declaration, and Electric Mobility Roadmap.

CONTACT PERSON

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

ATTACHMENTS

1. Resolution
2. Appendix

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

RESOLUTION ESTABLISHING CITY PROCESS FOR SITING AND DEVELOPING
PUBLIC ELECTRIC VEHICLE DC FAST CHARGING HUBS

WHEREAS, the world is facing a grave climate emergency, requiring municipalities to rapidly and justly transition towards a zero-carbon economy by 2030; and

WHEREAS, 60% of Berkeley's sector-based greenhouse gas (GHG) emissions as of 2019 result from the transportation sector, and in addition to public transportation, walking, biking and scooters, replacing internal combustion vehicles with electric vehicles will be a major factor in reducing emissions; and

WHEREAS, transitioning Berkeley's economy will require significant investment on the part of both government and residents and low-carbon technology, including electric vehicle charging infrastructure, which is underdeveloped in Berkeley and can often be out of reach for many households; and

WHEREAS, the primary hurdle to widespread electric vehicle adoption moving forward will be the availability of reliable and convenient fast charging infrastructure for residents who are renters who do not have access to charging at home and commuters, visitors and businesses; and

WHEREAS, City's Electric Mobility Roadmap and Climate Action goals provides a goal of having 15,000 electric light-duty vehicles registered in Berkeley by 2025, which according to California Energy Commission modeling would require a significant investment in public direct current fast charging (DCFC) ports; and

WHEREAS, Alameda County's default public power provider, East Bay Community Energy (EBCE), is proposing a public-public partnership with the City to develop and operate up to three DCFC hubs, that EBCE will own and operate, across Berkeley in areas with a dense concentration of multifamily housing that are near amenities desired by drivers; and

WHEREAS, the proposed public-public partnership would provide Berkeley residents and visitors with state-of-the-art fast charging infrastructure, enabling the transition from internal combustion vehicles for those who were not early adopters and reducing GHG emissions from the transportation sector; and

WHEREAS, EBCE and the City of Berkeley have developed the proposed non-binding term sheet describing how EBCE would develop, operate and market up to three DCFC hubs under a Service Agreement; and

WHEREAS, in parallel EBCE will negotiate a Site License Agreement with the City providing EBCE with access and use of public land for EBCE's DCFC hubs, and once the project is generating revenues above EBCE's annual project costs, EBCE will share revenue with the City via the Site License Agreement; and

WHEREAS, the Site License Agreement revenue payments and Utility Users Tax proceeds, resulting from increased electricity consumption as a transportation fuel at EBCE's DCFC hubs, can provide the City of Berkeley with new revenue sources; and

WHEREAS, it is in the public interest for the City to proceed to negotiate a Service Agreement with EBCE as generally proposed by the non-binding term sheet.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager or their designee is authorized to negotiate a Service Agreement with EBCE subject generally to the non-binding terms included in the attached term sheet and any subsequent amendments or modifications thereto, as the City and EBCE may deem appropriate, and that execution of the Service Agreement is contingent upon Council allocation of funding for the City's Service Fee as part of the FY 2023-2024 budget process and subsequent adoption of the Service Agreement by Council.

Attachment:

A: Non-binding Public Electric Vehicle DC Fast Charging Hub Term Sheet between EBCE and the City of Berkeley

TERM SHEET FOR PUBLIC DC FAST CHARGING (DCFC) PARTNERSHIP

Overview

East Bay Community Energy (“EBCE”) seeks to partner with its Joint Powers Authority member cities and the County of Alameda to develop, own, and operate a network of publicly available electric vehicle (“EV”) fast charging projects, or “EV Fast Charge Hubs”, sited at municipally owned parking lots and garages across the EBCE Service Territory. EBCE will site EV Fast Charge Hubs in areas with a dense concentration of multifamily housing to ensure renters, who represent nearly 50% of the population in EBCE’s service territory, have equitable access to the benefits of EVs. To date, these areas are significantly underserved by charging infrastructure which represents a critical barrier in achieving the State of California’s EV adoption goals due to the fact that renters do not have access to charging where they live. Each EV Fast Charge Hub will consist of a minimum of 10 dual-port fast charging stations. EBCE intends to develop up to three (3) EV Fast Charge Hubs per JPA member community.

Building EV Fast Charging Hubs across EBCE’s service territory will require significant project capital. EBCE seeks to raise this capital using a public-public partnership with member communities providing a revenue guarantee, or “backstop,” to cover project debt service (described below). This backstop will yield a lower cost of capital and can provide dividends to our City and County partners through a profit sharing mechanism.

To develop EBCE’s EV Fast Charge Hubs, we envision entering into a Services Agreement and Site License Agreement(s) with the City of Berkeley that will include the following terms:

EBCE Responsibilities:

- Develop, interconnect, own, operate and maintain EV Fast Charge Hubs
- Finance project development and operations with EBCE capital, private equity and debt
 - EBCE will fund working capital and a reserve account sufficient to cover one year of debt service
 - EBCE will book, claim and sell Low Carbon Fuel Standard credits to fund project operations
- EBCE will pay the City of Berkeley an annual Site License fee starting the year after project Net Operating Income exceeds EBCE’s cost to service Debt.
 - The Site License fee will be calculated by the following formula:
 - Once 'year N' Project Net Operating Income > EBCE Annual Project Debt Service payment, then:
 - Site License fee (year N+1) = 40% * [Net Operating Income (year N) – EBCE Annual Project Debt Service payment (year N)]
 - Net Operating Income is the sum total of electricity sales and LCFS revenue minus operating costs such as electricity procurement, operations and maintenance.
- Procure wholesale renewable electricity (e.g., Renewable 100) for use as a transportation fuel
- Develop EV specific charging rates, that are beneficial to all drivers, to encourage utilization
- Market EV Fast Charge Hubs to drivers across EBCE territory
- Partner with private sector stakeholders to increase EV adoption and EBCE EV Fast Charge Hub utilization

City of Berkeley Responsibilities:

- City of Berkeley will sign a Service Agreement with EBCE to provide Public DC Fast Charging with an annual Service Fee of \$100,000 per EV Fast Charging Hub
 - The Service Fee will be billed on the first day of commercial operation and billed annually henceforth
 - EBCE will reduce the annual Service Fee by the amount of the Site License fee.
 - The Annual Site License fee may exceed the Annual Service fee, resulting in net payments to City of Berkeley from EBCE
- Provide EBCE access to the City of Berkeley’s parking lot and/or garage real estate portfolio for siting EV Fast Charge Hubs (e.g., host site).
 - The number of parking spaces at each host site (e.g., lot/garage) must be sufficient to support the deployment of EBCE’s EV Fast Charge Hubs.
 - Each Fast Charge Hub will have a minimum of 10 charging stations and each dual port fast charging station will require 2 parking spaces
 - Each parking space must be EV Only for the use case of charging
 - Each EV Fast Charge Hub will require compliance with the Americans with Disability Act (ADA), which mandates allocation of additional EV Only parking spaces.
 - Provide free access to lots/garages to EV drivers for a minimum of one (1) hour for the use of EV charging
 - Allow access 24 hours per day / 7 days per week
- Work with EBCE to expedite permitting of the EV Fast Charge Hub(s)
- Increase awareness of EV Fast Charge Hub availability to residents, businesses and visitors
- After EBCE site technical assessment, should any of the City of Berkeley lot/garage(s) be determined infeasible for project deployment, assist EBCE with connecting with other public agency and/or private sector stakeholders who own strategic real estate assets suitable for EV Fast Charge Hub development

Next Steps and Proposed Schedule:

Action Item	Timing (in sequence)
EBCE and City of Berkeley execute Services Agreement	2-4 months
EBCE identifies siting priorities	2 months
EBCE and City of Berkeley execute Site License Lease Agreement	4 months
EBCE develops EV Fast Charge Hubs	6-12 months

The following departments, at minimum, will need to be engaged in the negotiation and development process:

Department	Include: (Y/N)	Lead Contact
Sustainability Office:		
City Manager:		

City Attorney:		
Finance Department:		
Public Works:		
City Council:		
Other:		

Conclusion:

In addition to the terms described above for the Services and Site License Agreements, each will also include terms such as indemnification, insurance, and default provisions which will be negotiated between EBCE and the City of Berkeley. The terms included in this Term Sheet serve as a summary, are not all-inclusive and do not constitute a binding commitment at this time between EBCE and the City of Berkeley.

Appendix

Proposed Site License Fee (Paid to City of Berkeley) Formula

The City's Site License Fee is calculated in the following manner:

$$\text{Site License fee (year N+1)} = 40\% * [\text{Net Operating Income (year N)} - \text{EBCE Annual Project Debt Service payment (year N)}]$$

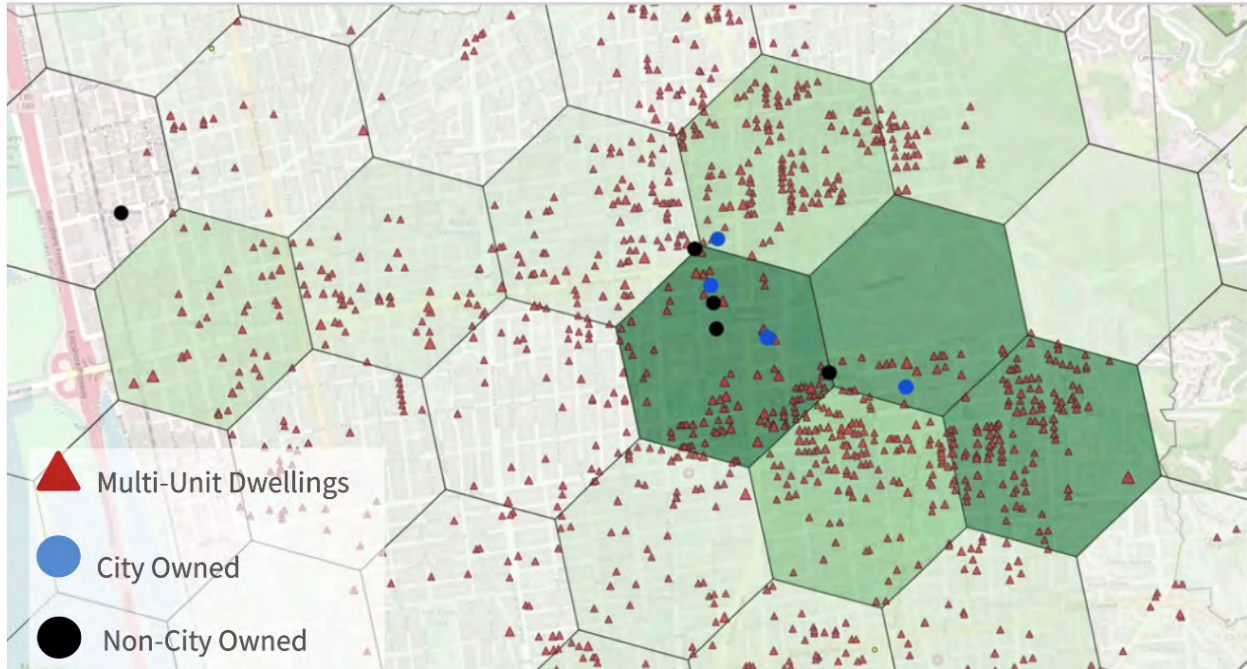
Whereby:


(NOI) = Net Operating Income: the sum total of electricity sales and LCFS revenue minus operating costs such as electricity procurement, operations and maintenance.

Year N = Project year where NOI > EBCE Project Debt Service

Appendix

EBCE Mapping of Berkeley Multi-Unit Dwellings, Favorable City-Owned and Non-City-owned Parking Lots/Garages, and Concentration of TNC Passenger Pick-up and Drop-off



 Proprietary data from Transportation Network Company regarding concentration of pick-up and drop-off activities (provided to EBCE via non-disclosure agreement)



Office of the City Manager

17

ACTION CALENDAR
February 8, 2022
(Continued from November 30, 2021)

To: Honorable Mayor and Members of the City Council
From: Dee Williams-Ridley, City Manager
Submitted by: Jordan Klein, Director, Department of Planning and Development
Subject: Berkeley's 2019 Community-Wide Greenhouse Gas Emissions Inventory

SUMMARY

City staff conducts an annual greenhouse gas (GHG) emissions inventory to understand the sources of community-wide GHG emissions, to measure progress towards meeting the City's Climate Action Plan (CAP) goals, and to move toward becoming a Fossil Fuel-Free city. Like previous annual inventories, Berkeley's 2019 community-wide GHG inventory focuses on emissions specifically occurring within the City and includes the following sources: transportation (on-road vehicles and public transit), building electricity usage, building natural gas consumption, landfill solid waste, and emissions from water consumption and wastewater treatment.

Total community-wide GHG emissions in 2019 decreased 26% from the 2000 baseline, and decreased 4% from 2018. The GHG emissions inventory for 2019 was the last inventory before the COVID-19 pandemic, which will impact the data found in future inventories, particularly in the transportation and building sectors.

CURRENT SITUATION AND ITS EFFECTS

Berkeley's community-wide GHG emissions inventory is a Strategic Plan Priority Project, advancing our goal to be a global leader in addressing climate change, advancing environmental justice, and protecting the environment.

2019 Community-Wide Greenhouse Gas Emissions Inventory

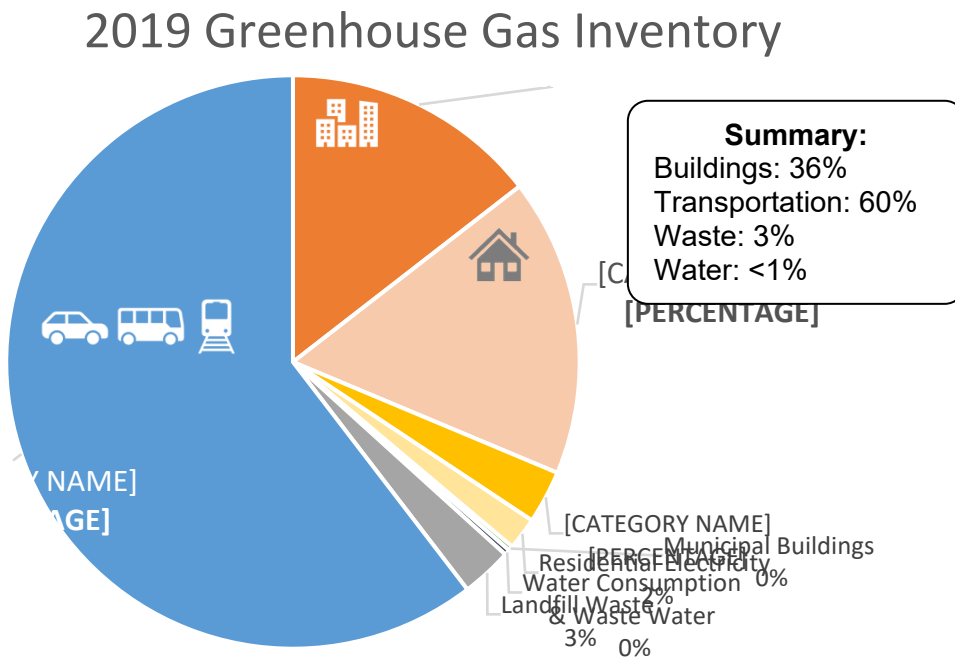
In 2019, Berkeley's community-wide greenhouse gas emissions totaled 540,569 metric tons of carbon dioxide equivalent (mtCO₂e).

The distribution of Berkeley's emissions seen below in **Figure 1** is similar to previous years, with the majority of emissions coming from Berkeley's transportation sector and the natural gas consumed within buildings. Emissions from the transportation sector, which includes on-road vehicles, BART, AC Transit, Amtrak and maritime vessels, accounted for 60% (326,568 mtCO₂e) of the overall emissions.

Energy usage data for Berkeley buildings, provided by East Bay Community Energy (EBCE) and PG&E, is broken down into residential, municipal, and commercial

(including industrial) buildings—for both electricity use and natural gas combustion. The built environment is the second largest source of emissions at 36% (196,819 mtCO₂e). As the electricity grid becomes cleaner, the combustion of fossil fuels (i.e., natural gas) within Berkeley's buildings becomes the primary source of the building sector's emissions, accounting for 32% of Berkeley's overall greenhouse emissions.

Figure 1: Pie chart of 2019 community-wide GHG emissions inventory, broken down by sector and fuel.



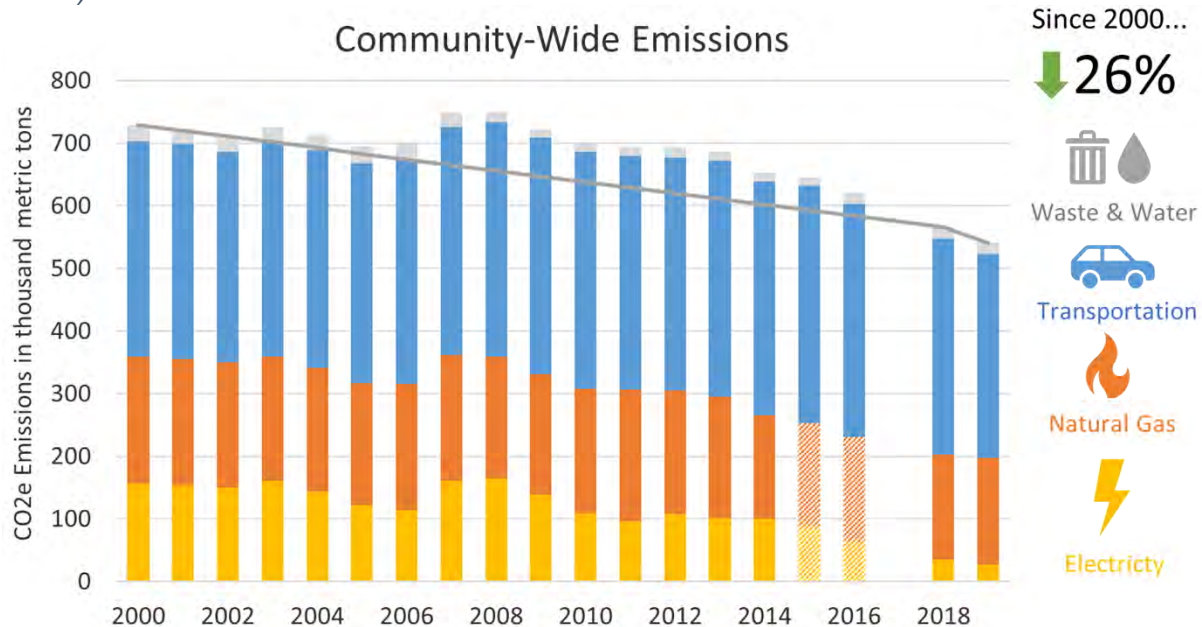
Emissions from Berkeley's municipal buildings account for 0.3% (1,442 mtCO₂e) of the 2019 community-wide emissions. See **Attachment 1** for additional information on Berkeley's municipal building energy efficiency and electrification projects.

The remaining 4% (17,182 mtCO₂e) of Berkeley's community-wide emissions come from landfill solid waste, water consumption, and waste water treatment.

Current Community-Wide Sector-Based GHG Emission Trends

The most current community emissions from 2019 are compared to the Climate Action Plan (CAP) baseline year of 2000, to identify reductions achieved thus far. A historic summary of Berkeley's annual emissions inventories from 2000 to 2019 is provided in **Figure 2**. Please note that due to data access issues, building energy use data for 2015 and 2016 was developed with assumptions and is represented with shaded coloring. No inventory was calculated for 2017, so that year of data is omitted.

Figure 1: *Historic Berkeley emissions inventories back to 2000, broken out into building natural gas and electricity, transportation, and other (water, wastewater treatment and landfill solid waste).*



Community-wide emissions in 2019 decreased 26% from the 2000 baseline and decreased 4% from 2018. Berkeley has moved beyond its initial emissions reduction goal, 80% GHG emissions reduction by 2050, established by the CAP. On May 11, 2021, Berkeley City Council committed to become zero net emissions by 2045 or sooner¹, requiring an additional 74% reduction of GHG emissions over the next 24 years.

Buildings

Overall greenhouse gas emissions from Berkeley's building sector decreased by 3% from 2018 to 2019, placing our current building sector emissions 45% below our 2000 baseline. Total community-wide electricity usage decreased 4% while total community-wide natural gas usage increased by 1% from 2018 to 2019.

Impacts to Berkeley's Building sector emissions:

- PG&E Electricity Emission Factor - While the majority of the community-wide electricity is provided by EBCE, 7% was provided by PG&E in 2019. PG&E's default electricity product for 2019 was initially calculated to be nearly emissions-free through a new calculation methodology, but is currently being re-evaluated

¹Commit to Race to Zero Council Report and Resolution, May 11, 2021:
https://www.cityofberkeley.info/Clerk/City_Council/2021/05_May/Documents/2021-05-11_Item_19_Commit_to_C40_Race_to_Zero_Campaign.aspx

by the Climate Registry². Until the 2019 emission factor is published, the Climate Registry has specified that PG&E's 2018 emission factor should be used for 2019 calculations.

- Continual Roll-out of East Bay Community Energy – In 2018, 31% of our community-wide electricity usage was provided by EBCE, with 1% of that usage provided by one of EBCE's emissions-free products, Renewable 100 and Brilliant 100. The automatic roll-out, switching both residential and commercial accounts from electricity purchased through PG&E to EBCE, continued into 2019. Due to this rollout, electricity provided by EBCE increased to 93% of community-wide electricity usage for 2019 and the usage provided by one of EBCE's emissions free products increased to 3%.
- EBCE Bright Choice Electricity Emission Factor – The emission factor for EBCE's default electricity product, Bright Choice, increased by 34% in 2019. The Bright Choice product accounts for 90% of our 2019 community-wide electricity consumption. Even with the emission factor increasing from 2018 to 2019 it still remains significantly lower than PG&E's emission factor for 2018. The increase is related to the changing procurement costs and loss of nuclear allocation in the 2019 electricity mix. EBCE is committed to providing 100% emission-free Bright Choice by 2030. Additionally, during 2022, all Berkeley Customers will be automatically opted-up into EBCE's Renewable 100³.

Transportation

A new data source and methodology was used to calculate community-wide emissions from the transportation sector. Using the new methodology, total community-wide transportation emissions decreased 5% from 2018 to 2019 due in part to more sustainable modes of commuting.

The City has historically used the Bay Area's Metropolitan Transportation Commission (MTC), Travel Model One, to calculate emissions for the transportation sector. Travel Model One is based on a simulation model of typical weekday travel, created to assist in regional planning activities. The model's projections use historic data, and estimate total vehicle miles on 5-year increments. As a result, using this model makes it difficult to track the impact of new transportation policies, yearly changes to commuting patterns, or impacts from events like the COVID-19 pandemic.

² Emission factors for both PG&E and EBCE electricity are verified by a third-party and publicly reported through the Climate Registry: <https://www.theclimateregistry.org/our-members/cris-public-reports/>

³ Energy Commission Report to Council: Adopt a Resolution to Upgrade Residential and Commercial Customers to East Bay Community Energy (EBCE) Renewable 100 Plan, June 29, 2021: https://www.cityofberkeley.info/Clerk/City_Council/2021/06_June/Documents/2021-06-29_Item_24_Adopt_a_Resolution_to_Upgrade_Residential.aspx

In December 2018, Google launched the Environmental Insights Explorer (EIE). Google EIE is a free tool that helps cities measure emissions from both building energy usage and on-road transportation. Google EIE estimates vehicle miles based on aggregated and anonymized location history data⁴. Since the data is based on continuous observation, Google EIE data is a more accurate indicator of year-to-year changes to local transportation activity and the commuting impacts from COVID-19.

In addition to providing vehicle miles, Google EIE data provides the share of miles traveled through sustainable modes of transportation (see **Figure 3**). The total number of miles traveled through sustainable modes of transportation, which includes public transit, cycling, and walking, increased by 13% from 2018 to 2019, with the majority of these miles being taken on BART and/or on foot (see **Figure 4**). During that same time period, the total number of miles driven by people in automotive vehicles decreased by 4%. This is the first year Berkeley has been able to track these modes at this level of detail.

Impacts to Berkeley's Transportation sector emissions:

- Switching from MTC to Google EIE model - 2018 is the first available year for Google's EIE data and Berkeley's 2018 emissions inventory was updated with the new methodology. Inventories prior to 2018 will remain on the MTC modeled transportation emissions. Switching to the Google EIE data has slightly increased the transportation sector emissions for both 2018 and 2019. The 2018 transportation sector emissions calculated with Google EIE data was 7% higher than the MTC modeled emissions, and the 2019 transportation emissions with Google EIE data was only 2% higher than the MTC modeled emissions.
- Using National Defaults – The 2019 transportation emissions were calculated using total vehicle miles traveled from Google EIE and national default values for determining vehicle categories and their average fuel economy. Over the next year, staff will work to develop and vet a

Figure 2: Total miles traveled via automotive and sustainable modes of transportation.

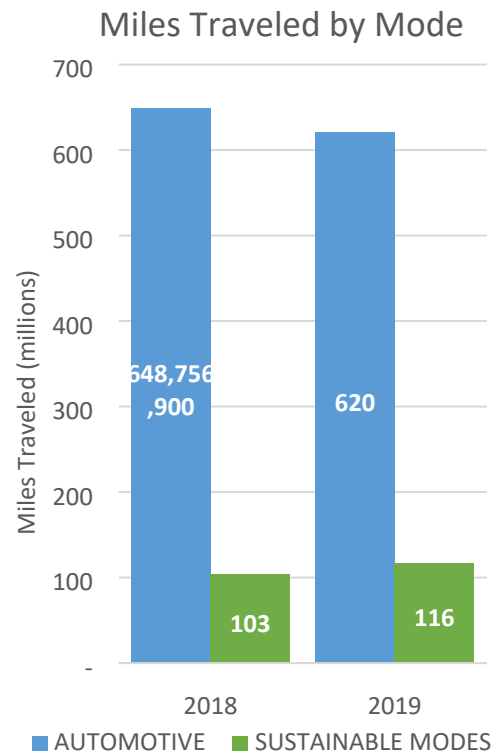
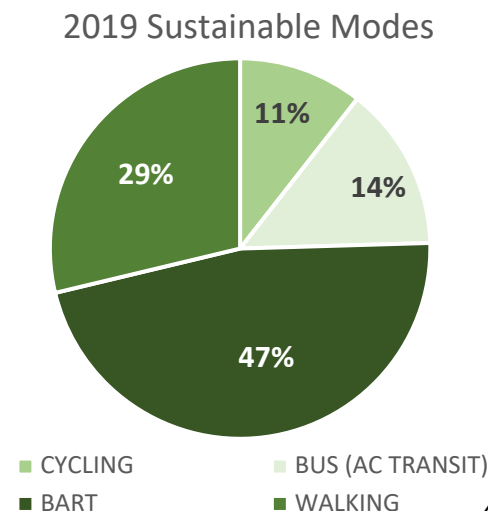


Figure 3: Proportion of miles traveled on sustainable modes of transportation by type for 2019.



⁴ [Technical Review of Google Environmental Insights Explorer](#)

new methodology to replace the national defaults with local values.

Landfill Solid Waste

Total community-wide landfill solid waste and overall emissions from the waste sector decreased by 3.6% in 2019 compared to 2018, placing our current waste sector emissions 35% below our 2000 baseline.

Additional Context

- Race to Zero – The Race to Zero is global campaign run by the COP26 Presidency and High-Level Climate Champions to rally non-state entities, including companies, cities and regions, to take immediate action to halve global emissions by 2030 and be net zero emissions by 2050. The City of Berkeley joined⁵ the Race to Zero initiative on May 11, 2021, committing to reach net zero emissions by 2045 and to set an interim 2030 target consistent with a fair share of 50% global emission reductions.
- Consumption-Based GHG Emissions Inventory - Although the more traditional emission inventory that Berkeley uses—known as a “production-based” or “sector-based” inventory—lays a foundation for key climate policy and program planning, taking a look at the emissions beyond Berkeley’s borders is necessary to address the climate crisis as a regional or global issue. Consumption-based inventories consider the entire life cycle of a specific product to calculate its GHG emissions. Included are goods and services such as air travel (even if, as for Berkeley, the airport is located outside of a jurisdictional boundary), food, appliances, and construction of buildings. An inventory of all Alameda County cities was created by the CoolClimate Network in 2018⁶ and was reported in Berkeley’s Community-wide Greenhouse Gas Emissions Inventory that year. Capturing this data accurately has been proven very complex and there is currently no standardized methodology to account and report across cities.
- Embodied Carbon – Embodied carbon is the carbon dioxide equivalent (CO₂e) emissions associated with the materials and construction process for buildings or infrastructure. Only operational carbon, from building energy consumption, is captured through Berkeley’s building sector emissions and emissions related to a building’s embodied carbon are not included in Berkeley’s annual emissions inventory.
- Interest in Regional/State inventories – There is increasing interest in transitioning annual local greenhouse gas inventories to a regional or state entity, such as the California Air Resources Board (CARB). These inventories would continue to provide sector-based emissions at the city-level jurisdictional

⁵ Commit to Race to Zero Council Report and Resolution, May 11, 2021:
https://www.cityofberkeley.info/Clerk/City_Council/2021/05_May/Documents/2021-05-11_Item_19_Commit_to_C40_Race_to_Zero_Campaign.aspx

⁶ Bay Area Air Quality Management District, Consumption-Based GHG Emissions Inventory:
<https://www.baaqmd.gov/about-air-quality/research-and-data/emission-inventory/consumption-based-ghg-emissions-inventory>

boundary but the data collection, processing, and reporting would be completed by a regional or state entity. These groups have better access to the data needed for this work and it would increase standardization of the varying inventory methodologies across local jurisdictions, allowing for meaningful cross-jurisdictional comparisons.

Staff will continue to work with regional and other partners, such as StopWaste, the Local Government Commission, and the Urban Sustainability Director's Network, to monitor advances in greenhouse inventory models, tools, and frameworks that would improve Berkeley's understanding and efforts to capture community-wide emissions.

BACKGROUND

Since Berkeley's adoption of its historic Climate Action Plan in 2009, city staff has conducted an annual GHG emissions inventory in order to understand the sources of community-wide GHG emissions, and the impacts of local, regional, and larger efforts to reduce emissions. Data is gathered from regional entities on sector-specific activities, and is then converted to metric tons of carbon dioxide equivalent (mtCO₂e). The inventory utilizes the best available data and follows the Global Covenant of Mayors for Climate & Energy protocol which allows the City to report consistently to the community and to other agencies.

Although this inventory does not include UC Berkeley and The Berkeley Lab, as they are outside the City's jurisdiction, they continue to be valued partners in efforts working to improve Berkeley's shared community emissions and combat climate change.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Berkeley's community-wide annual greenhouse gas inventory allows the city to measure and track its progress for implementing Berkeley's Climate Action Plan and reaching zero net emissions by 2045.

POSSIBLE FUTURE ACTION

The Race to Zero initiative requires Cities to establish an interim science-based 2030 target that is consistent with a fair share of 50% global emission reductions. Staff is working with ICLEI, a global network of local governments, to create the required science-based 2030 target. Accompanying the 2019 GHG inventory report, staff will bring the 2030 emission reduction target to Council for consideration.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

There are no direct fiscal impacts to establishing the science-based 2030 target.

CONTACT PERSON

Billi Romain, Manager, Office of Energy & Sustainable Development – Planning Department, (510) 981-9732

Attachments:

1: Municipal Facilities Emissions Savings Upgrades (2019)

Attachment 1: Municipal Facilities Emissions Savings Upgrades (2019)

The City continues to make improvements to its municipal facilities to increase energy efficiency, lower energy costs, reduce greenhouse gas (GHG) emissions, and transition buildings toward being all-electric powered by clean electricity. Municipal buildings use emissions-free electricity from East Bay Community Energy (EBCE), purchasing the Brilliant 100 product in 2019 and the Renewable 100 product as of 2021.

Energy upgrades, including efficiency and electrification, were integrated into building renovations and capital improvement projects during 2019. Those projects and others funded through incentives and grants, are highlighted below:

Mental Health Adult Services Clinic, 2640 Martin Luther King Jr. Way

Significant building renovation, with the intent of being an all-electric zero emissions building, was started in 2018. Older plumbing equipment was replaced with high efficiency products and inefficient natural gas systems were replaced with efficient electric heat pump technology. All of the natural gas end uses were eliminated and the gas meter was removed. Electric service was increased to accommodate new heating and cooling energy loads, and a solar electric system was installed that is intended to offset 100% of the electric energy used at this site. The building will have a formal case study done, as part of the Lawrence Berkeley National Labs grant, which also includes energy monitoring for several years.

Live Oak Recreation Center, 1301 Shattuck Avenue

Renovations during 2019 included energy upgrades and partial electrification of the heating systems to remove gas wall furnaces in the recreation center. Gas heat remains in the theater portion of the building, which is leased to various entities. Water heating has been electrified and a new roof with insulation was installed to reduce summer solar heat gain and preserve winter heat provided by the heat pump. Large ceiling-mounted fans were installed in the gymnasium area to increase occupant comfort and save on cooling loads. A full cost and energy analysis will be done for 2020.

North Berkeley Senior Center, 1901 Hearst Avenue

This Senior Center closed for renovations in 2019 and will be an all-electric building when completed by 2022. The gas boilers were replaced with high efficiency heat pumps and a solar PV system has been added to offset annual energy use. An EBCE grant of \$49,000 for Commercial Kitchen Electrification was awarded in 2021 for both North and South Berkeley Senior Centers. The grant provides funding to replace the gas range with a new six-burner electric induction cooktop. It will also replace the original kitchen steam table, which used natural gas-heated hot water and electric resistance heaters to keep food warm, with a new dry well induction food warming table, thereby reducing electric load and eliminating this need for hot water, saving both gas and water costs.

South Berkeley Senior Center, 2939 Ellis Street

The South Berkeley Senior Center is also a recipient of the same Commercial Kitchen Electrification grant to the City from EBCE. This grant will cover some of the costs of new induction cooktop, a new drywell food warmer to replace the original steam table, the costs of all electrical induction cooking equipment, and labor to rewire circuits to these appliances.

Public Safety Building, 2100 Martin Luther King Jr Way

Beginning in 2018, the Public Safety Building (PSB) started participating in an Automated Demand Response (ADR) project that resulted in cost savings of about \$11,000 that year, plus a one-time incentive of \$1,400. A lighting upgrade to LEDs and better lighting controls was completed in the PSB in 2019, resulting in total cost savings of \$13,600 in 2019. The lighting upgrade was the City's first On Bill Financing (OBF) project. The total cost was \$250,000, with zero up-front costs; the City is repaying the loan on its monthly utility bill. The loan payment is roughly equal to the energy cost savings, resulting in no cost increase for the City, while reducing energy use and GHG emissions. Additional OBF projects are being developed as energy efficiency and electrification assessments are completed for other City buildings.

Dona Spring Animal Shelter, 1 Bolivar Drive

A complete energy assessment was done in 2018-2019 of all systems at the Animal Shelter, including HVAC, lighting, and plug loads. This study delineated the energy used by the AT&T cell phone tower on top of the building from the Animal Shelter operations.

Municipal Street Light Retrofit to Lower Wattage LEDs, citywide

Municipal street lights were originally converted to LEDs in 2010-2012. In 2018-2020, approximately 7,000 cobra head street light fixtures were replaced due to a manufacturing defect. The new, lower wattage fixtures, provided by the vendor to the City at no cost, meet CalTrans standards and will result in considerably less energy consumed and lower utility bills. A full cost and energy analysis of this project is pending, as PG&E is still correcting the billing and providing updated energy consumption for 2019.



Office of the City Manager

18

PUBLIC HEARING
February 8, 2022

To: Honorable Mayor and Members of the City Council
 From: Dee Williams-Ridley, City Manager
 Submitted by: Jordan Klein, Director, Planning & Development Department
 Subject: ZAB Appeal: 2956 Hillegass Avenue Use Permit #ZP2021-0068

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.

FISCAL IMPACTS OF RECOMMENDATION

None.

CURRENT SITUATION AND ITS EFFECTS

On September 9, 2021, ZAB conducted a public hearing and approved staff's recommendation to approve the Use Permit for the addition or enlargement to a lawfully non-conforming structure that exceeded the maximum allowable lot coverage, and the Administrative Use Permit (AUP) for a residential addition over 14 feet in average height with an added condition to provide additional screening on the west and north side of the balcony (see Exhibit A to the resolution, Condition #11). ZAB approved the project with a unanimous vote of 8-0-0-1, with one recusal by a member who lived with 500 feet of the project site. (Motion Tregub / Second Sanderson; Yes: Tregub, Duffy, Gaffney, Thompson, Olson, O'Keefe, Kim, Sanderson; Abstain: None; Absent: None; Recused: Khan.)

On September 21, 2021, staff issued the notice of the ZAB decision, which established a 14-day appeal period.

On October 4, 2021, an appeal was filed with the City Clerk/Council by the Barbara Romanowicz and Tamio Kajita, neighbors at 2954 Hillegass Avenue and 2523 Webster Street, respectively.

On or before January 25, 2022, staff posted the City Council notice of public hearing near the site and mailed notices to property owners and occupants within 300 feet of the project site and to all registered neighborhood groups that cover this area. This public hearing is required to resolve the appeal.

BACKGROUND

On April 26, 2021, Edward W. Buchanan (Buchanan Opalach Architects) submitted an AUP application to create a new upper-floor roof balcony, approximately 170 square feet in area, over the existing roof at the rear of the house. Staff determined that a Use Permit with a public hearing was required because the lot is non-conforming to the maximum allowable lot coverage (BMC 23C.04.070.C¹). An AUP was also required because the addition of the balcony, measured to the top of the railings, exceeded 14 feet in average height (BMC 23D.16.070.C).

On May 4, 2021, staff deemed the project application complete.

On August 26, 2021, staff posted the Zoning Adjustment Board (ZAB) Notice of Public Hearing near the site and mailed notices to property owners and occupants within 300 feet of the project site and to all registered neighborhood groups that cover this area.

At the time the staff report was written, 37 communications had been received expressing both support and opposition to the project. These were included as Attachment 4 of the September 9, 2021 staff report to the ZAB (see Attachment 2 to this report).

On September 9, 2021, the ZAB held a public hearing and approved staff's recommendation to approve Use Permit # ZP2020-0060 with an added condition to provide additional screening on the north and west side of the proposed balcony. As described in the staff report, the ZAB made the findings for an addition on a lot that is non-conforming to lot coverage, because the project would not increase the lot coverage nor would it exceed the height limit of the zoning district (BMC 23C.04.070). ZAB also made the general non-detriment finding (BMC 23B.32.040.A) because the property would continue to meet the R-1 (Single-Family Residential) development standards for density, height, and useable open space. The railings would be lower than the highest roof line and not impact the average or maximum structure height. Because the proposal would not increase the building footprint or add walls, potential impacts on light and air was found to be non-detrimental. Potential privacy impacts were found to be non-detrimental because the balcony would be located outside of all required setbacks. The ZAB added the condition for additional screening on the north and west sides of the balcony to address neighbor concerns related to noise and privacy.

Additional Permit History

¹ The prior Zoning Ordinance was in effect at the time this application was deemed complete and was heard by ZAB. The version of the BMC Title 23, Zoning Ordinance, that was in effect at the time this application was deemed complete is available online: [https://www.cityofberkeley.info/Planning_and_Development/Land_Use_Division/Zoning_Ordinance_Revision_Project_\(ZORP\).aspx](https://www.cityofberkeley.info/Planning_and_Development/Land_Use_Division/Zoning_Ordinance_Revision_Project_(ZORP).aspx)

On December 6, 2019, the same applicant had submitted Use Permit #ZP2019-0196 to enlarge the existing two-story 1,926 square foot single-family dwelling by converting 908 square feet of basement and crawl space area to habitable space, adding new openings to elevations within front and side non-conforming setbacks, increase the number of bedrooms from three to five, and establish an uncovered off-street parking space within the rear setback. On August 13, 2020, the ZAB held a public hearing and approved staff's recommendation to approve Use Permit # ZP2019-0196 on consent.

In February 2021, during the construction of the related improvements authorized under Building Permit No. B2019-03118, the existing windows were removed and replaced with sliding glass doors, which had not been shown in the approved zoning or building permits. This alteration was allowed by-right because it is not within a setback area and did not add any square footage or modify a roofline of the building over 14 feet in height but still needed to be permitted. The applicant was required to revise the previously approved building permit to include the sliding doors with a safety rail in front of them, on the exterior of the structure, for life-safety reasons. The changes were approved and the doors with the railings are now a legally permitted existing condition on the site. The applicant then applied for the use permit that is the subject of this appeal for the 170 square foot balcony with guardrails on the existing flat roof outside of the doors.

ZAB Action

The ZAB unanimously² voted to approve the project with an added condition that the applicant provide additional screening beyond the proposed railings on the west and north side of the proposed balcony.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

The project complies with all state and local environmental requirements.

RATIONALE FOR RECOMMENDATION

Applicant/Appellant's Appeal Issues and Staff Responses: The appellants raised one primary issue in their appeal letter: the proposed balcony will be a nuisance that impacts the privacy and peace of three neighboring sites at 2954 Hillegass Avenue, 2523 Webster Street, and 2525 Webster Street. They also offer an alternative proposal to enclose the proposed balcony area to make it a sunroom. The appeal letter is included here as Attachment 4.

The issues raised in the appellant's letter and staff's responses are as follows. For the sake of brevity, the appeal issues are not re-stated in their entirety. Please refer to the attached appeal letter for the full text.

Appeal Issues: The appellants state that the proposed balcony, due to its size and location, will impact the privacy and peace of three of the lots that share common lot

² 8-0-0-1 vote; one member recused because they reside within 500 feet of the subject lot.

lines. The issues raised include the height of the balcony in relation to the rear yards of the neighboring lots at 2523 and 2525 Webster Street (southwest), and that it is only separated by 15 feet from a home office and bedroom at 2954 Hillegass (north). They anticipate noise resulting from the use of the deck and outdoor conversations.

Staff Response: The proposed balcony is 17 feet wide by 10 feet deep (170 square feet in area) and is located on the existing roof of the two-story portion of the building below which contains the existing kitchen nook and laundry area on the main floor and the play room on the lower floor. The proposed balcony would be located off of and accessed only through the master bedroom on the third floor, and is located outside of all required setbacks. Portions of the existing residence are non-conforming to side setbacks, providing 2 feet from the right (north) and 1 foot, 1 inch from the left (south) side lot lines, respectively, where 3.5 feet is required. The proposed balcony, however, sits above an inset two-story portion of the structure that exceeds the side setback requirements and is located 9 feet, 3 inches from the right (north) and 6 feet, 6 inches from the left (south) side lot lines respectively. The required rear setback of 20 feet is met. The north side of the deck is located 15 from the closest structure to the north. Upper-level balconies are a common feature of the residences in the neighborhood, including a similar existing upper-floor balcony on the rear of the house at 2954 Hillegass, which is located behind the subject property.

Because the proposed deck is located on the roof of the existing two-story structure and outside of all required setbacks, it is situated on the lot in a manner that minimizes privacy impacts. The additional screening on the north and west sides of the proposed balcony required by the ZAB provides further measures to minimize potential privacy impacts. Activity on the residential balcony is not within the purview of the Zoning Ordinance.

Other Issues Raised in Appeal Letter:

- Piecemeal manner of improvements at project site since the initial proposal in 2019 including the upper-floor window modification to sliding doors before filing AUP application;
- Installation of an HVAC unit on the roof;
- Misleading information was presented to the ZAB:
 - Sliders shown as “original condition”
 - Room on neighbor’s lot is not a sunroom but a home office
 - Supporters lived far enough away as to not be impacted by the proposed balcony
- Tree removal w/out neighbor consultation
- New fence of poor material on lot line on street side and rear, removal of front landscaping
- Other properties have balconies

Staff Response: The balcony was not part of the original proposal in the 2019 application which included a larger scope of work, including converting existing

basement and crawl space into habitable area. The proposed balcony does not constitute a major residential addition, and only requires a use permit because of the existing condition being non-conforming to lot coverage due to the small lot area. The AUP for the addition of the railings is required because the railings go above 14 feet in average height, however there is no additional footprint or changes to the roofline. The proposed balcony is a relatively small project.

The installation of the HVAC unit on the roof is not subject to land use requirements as it is located outside of all required setbacks and does not constitute floor area or roof area.

The ZAB conducted a public hearing and deliberated based on all of the evidence including the Staff Report, testimony and the findings. For the witness testimony please refer to Attachment 3, the Captioner's record.

The City of Berkeley does not have a tree protection ordinance, and only provides limitations on the removal of live coast oak trees under Ordinance 6,905-N.S. No coast live oak trees were identified on the site prior to any applications or during permitting.

Fences 6 feet or less in height are permitted within required setbacks, and the existing fence was not part of the subject use permit.

Appellant Recommendation: Appellants request that the proposed balcony instead be an enclosed sunroom.

Staff Response: Enclosing the balcony could result in other impacts and is not necessary to avoid any detriment, as determined by the ZAB and staff. It is not appropriate to require building additional floor area as a solution.

ALTERNATIVE ACTIONS CONSIDERED

Pursuant to BMC Section 23.410.040(G), the Council may (1) continue the public hearing, (2) modify, reverse, or affirm, wholly or partly, any decision, determination, condition or requirement of the ZAB, or (3) remand the matter to the ZAB.

Action Deadline:

Pursuant to BMC Section 23.410.040(I), if the disposition of the appeal has not been determined within 30 days from the date the public hearing was closed by the Council (not including Council recess) then the decision of the Board shall be deemed affirmed and the appeal shall be deemed denied.

CONTACT PERSONS

Jordan Klein, Director, Planning & Development Department, (510) 981-7534
Steven Buckley, Land Use Planning Manager, (510) 981-7411
Samantha Updegrave, Zoning Officer, (510) 981-7414

Attachments:

1. Draft Resolution
 - Exhibit A: Findings and Conditions
 - Exhibit B: Project Plans dated April 21, 2021
2. ZAB Packet dated September 9, 2021
3. Captioner's Record, ZAB Hearing September 9, 2021
4. Applicant's Appeal Letter dated October 2, 2021
5. Index to Administrative Record
6. Administrative Record
7. Public Hearing Notice

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

AFFIRMING THE ZONING ADJUSTMENTS BOARD'S APPROVAL OF 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; AND DISMISSING THE APPEAL.

WHEREAS, on April 26, 2021, Edward W. Buchanan (Buchanan Opalach Architects) filed a zoning application to create a new upper-floor roof balcony, approximately 170 square feet in area, over the existing roof at the rear of the house on a lot that is non-conforming to lot coverage; and

WHEREAS, on May 4, 2021, staff deemed this application complete; and

WHEREAS, on August 26, 2021 staff posted the Zoning Adjustment Board (ZAB) Notice of Public Hearing near the site and mailed notices to property owners and occupants within 300 feet of the project site and to all registered neighborhood groups that cover this area; and

WHEREAS, on September 9, 2021, the ZAB conducted the public hearing in accordance with BMC Section 23B.32.030, determined that the project is categorically exempt from the California Environmental Quality Act ("CEQA") under Section 15301 of the CEQA Guidelines ("Existing Facilities") and approved staff's recommendation to approve Use Permit # ZP2020-0060 with an added condition to provide additional screening on the north and west side of the proposed balcony; and

WHEREAS, on September 21, 2021, staff issued the notice of the ZAB decision, which established a 14-day appeal period; and

WHEREAS, on October 4, 2021, an appeal was filed with the City Clerk/Council by the Barbara Romanowicz and Tamio Kajita, neighbors at 2954 Hillegass Avenue and 2523 Webster Street, respectively; and

WHEREAS, on or before **January 25, 2022**, staff posted the public hearing notice near the site in three locations and mailed notices to property owners and occupants within 300 feet of the project site and to interested neighborhood organizations; and

WHEREAS, on February 8, 2022, the Council held a public hearing to consider the ZAB's decision, and, in the opinion of this Council, the facts stated in, or ascertainable from the public record, including the staff report and comments made at the public hearing, warrant denying the project.

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Berkeley that the City Council hereby adopts the findings made by the ZAB in Exhibit A to affirm the decision of the ZAB to approve Use Permit # ZP2020-0060 as shown in the project plans in Exhibit B, and dismisses the appeals.

Exhibits

A: Findings and Conditions

B: Project Plans, dated April 21, 2021

FINDINGS AND CONDITIONS

SEPTEMBER 9, 2021

2956 Hillegass Avenue

Use 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.

PERMITS REQUIRED

- Use Permit, under [Berkeley Municipal Code \(BMC\)](#) Section 23C.04.070.C, for additions or enlargements to lawful non-conforming structures that are non-conforming by exceeding the maximum allowable lot coverage; and
- Administrative Use Permit, under BMC Section 23D.16.070.C, for additions over 14 feet in average height

I. CEQA FINDINGS

1. The project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code §21000, et seq. and California Code of Regulations, §15000, et seq.) pursuant to Section 15301 of the CEQA Guidelines (“Existing Facilities”).
2. Furthermore, none of the exceptions in CEQA Guidelines Section 15300.2 apply, as follows: (a) the site is not located in an environmentally sensitive area, (b) there are no cumulative impacts, (c) there are no significant effects, (d) the project is not located near a scenic highway, (e) the project site is not located on a hazardous waste site pursuant to Government Code Section 65962.5, and (f) the project would not affect any historical resource.

II. FINDINGS FOR APPROVAL

1. As required by Section 23B.32.040.A of the BMC, the project, under the circumstances of this particular case existing at the time at which the application is granted, would not be detrimental to the health, safety, peace, morals, comfort, and general welfare of the persons residing or working in the neighborhood of such proposed use or be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood, or to the general welfare of the City because:
 - A. The property will continue to conform to the R-1 development standards regarding density, height, and usable open space (BMC 23D.16.070). Although the addition will increase the height of a portion of the building in the rear, its roofline would be lower than the dwelling’s highest roofline and will not impact the average or maximum height. It will continue to provide usable open space beyond the 400 square foot minimum required for the existing single-family dwelling. One off-street parking space is provided where one is required (BMC 23D.16.080.A). The addition is allowed on a lot with a legal non-conforming lot coverage, subject to issuance of a Use Permit because the proposed project will not increase lot coverage or exceed the height limit. Therefore, air and light impacts to surrounding properties due to the project are determined to not be detrimental.

Privacy:-The proposed balcony will be on the rear (west) elevation in the west would be 9'-3" ft. from the side property line to the north where 3.5 ft. is required, 20 ft. from the rear property line to the west where 20 feet is required and 6'-6" ft. from the south property line where 3.5 ft. is required. It is separated from the closest three-story neighboring property at 2954 Hillegass Avenue by approximately 15 ft. Since the proposed balcony will be located outside of all the required setbacks, it will not create detrimental impacts to privacy of neighboring dwellings.

2. Sunlight, Air and View: The proposed addition will increase a portion of the building's height in the rear, however, it will not create new sunlight, air, or view impacts on the neighboring dwellings because the overall height will be lower than the existing dwelling's highest roofline, it will not expand the building footprint, will be located outside required setbacks, and will be separated from the closest neighbor property to the north by about 15 feet. Therefore air and light impacts to surrounding properties due to the project will not be detrimental.
 3. Pursuant to Berkeley Municipal Code Section 23C.04.070.C, the Zoning Adjustments Board finds that the addition is permissible because the addition will not increase coverage or exceed the height limit.
-

III. STANDARD CONDITIONS OF APPROVAL FOR ALL PROJECTS

The following conditions, as well as all other applicable provisions of the Zoning Ordinance, apply to this Permit:

1. Conditions Shall be Printed on Plans

The conditions of this Permit shall be printed on the *second* sheet of each plan set submitted for a building permit pursuant to this Use Permit, under the title 'Use Permit Conditions.' *Additional sheets* may also be used if the *second* sheet is not of sufficient size to list all of the conditions. The sheet(s) containing the conditions shall be of the same size as those sheets containing the construction drawings; 8-1/2" by 11" sheets are not acceptable.

2. Applicant Responsible for Compliance with Conditions

The applicant shall ensure compliance with all of the following conditions, including submittal to the project planner of required approval signatures at the times specified. Failure to comply with any condition may result in construction being stopped, issuance of a citation, and/or modification or revocation of the Use Permit.

3. Uses Approved Deemed to Exclude Other Uses (Section 23B.56.010)

- A. This Permit authorizes only those uses and activities actually proposed in the application, and excludes other uses and activities.
- B. Except as expressly specified herein, this Permit terminates all other uses at the location subject to it.

4. Modification of Permits (Section 23B.56.020)

No change in the use or structure for which this Permit is issued is permitted unless the Permit is modified by the Board, except that the Zoning Officer may approve changes that do not expand, intensify, or substantially change the use or building.

Changes in the plans for the construction of a building or structure, may be modified prior to the completion of construction, in accordance with Section 23B.56.030.D. The Zoning Officer may approve changes to plans approved by the Board, consistent with the Board's policy adopted on May 24, 1978, which reduce the size of the project.

5. Plans and Representations Become Conditions (Section 23B.56.030)

Except as specified herein, the site plan, floor plans, building elevations and/or any additional information or representations, whether oral or written, indicating the proposed structure or manner of operation submitted with an application or during the approval process are deemed conditions of approval.

6. Subject to All Applicable Laws and Regulations (Section 23B.56.040)

The approved use and/or construction is subject to, and shall comply with, all applicable City Ordinances and laws and regulations of other governmental agencies. Prior to construction, the applicant shall identify and secure all applicable permits from the Building and Safety Division, Public Works Department and other affected City divisions and departments.

7. Exercised Permit for Use Survives Vacancy of Property (Section 23B.56.080)

Once a Permit for a use is exercised and the use is established, that use is legally recognized, even if the property becomes vacant, except as set forth in Standard Condition #8, below.

Prior to Issuance of Any Building Permit:

11. Low-Carbon Concrete. The project shall verify compliance with the Berkeley Green Code (BMC Chapter 19.37) including use of concrete mix design with a cement reduction of at least 25%.
12. Recycling and Organics Collection. Applicant shall provide recycling and organics collection areas for occupants, clearly marked on site plans, which comply with the Alameda County Mandatory Recycling Ordinance (ACWMA Ordinance 2012-01).

During Construction:

13. Construction Hours. Construction activity shall be limited to between the hours of 8:00 AM and 6:00 PM on Monday through Friday, and between 9:00 AM and Noon on Saturday. No construction-related activity shall occur on Sunday or any Federal Holiday.
14. Public Works - Implement BAAQMD-Recommended Measures during Construction. For all proposed projects, BAAQMD recommends implementing all the Basic Construction Mitigation Measures, listed below to meet the best management practices threshold for fugitive dust:
 - A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
 - B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 - C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 - D. All vehicle speeds on unpaved roads shall be limited to 15 mph.
 - E. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
 - F. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
 - G. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
 - H. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.
15. Construction and Demolition Diversion. Divert debris according to your plan and collect required documentation. Get construction debris receipts from sorting facilities in order to verify diversion requirements. Upload recycling and disposal receipts if using [Green Halo](#) and submit online for City review and approval prior to final inspection. Alternatively, complete the second page of the original [Construction Waste Management Plan](#) and present it, along with your construction debris receipts, to the Building Inspector by the final inspection to demonstrate diversion rate compliance. The Zoning Officer may request summary reports at more frequent intervals, as necessary to ensure compliance with this requirement.
16. Low-Carbon Concrete. The project shall maintain compliance with the Berkeley Green Code (BMC Chapter 19.37) including use of concrete mix design with a cement reduction of at least 25%.

Documentation on concrete mix design shall be available at all times at the construction site for review by City Staff.

- 17. Transportation Construction Plan.** The applicant and all persons associated with the project are hereby notified that a Transportation Construction Plan (TCP) is required for all phases of construction, particularly for the following activities:
- Alterations, closures, or blockages to sidewalks, pedestrian paths or vehicle travel lanes (including bicycle lanes);
 - Storage of building materials, dumpsters, debris anywhere in the public ROW;
 - Provision of exclusive contractor parking on-street; or
 - Significant truck activity.

The applicant shall secure the City Traffic Engineer's approval of a TCP. Please contact the Office of Transportation at 981-7010, or 1947 Center Street, and ask to speak to a traffic engineer. In addition to other requirements of the Traffic Engineer, this plan shall include the locations of material and equipment storage, trailers, worker parking, a schedule of site operations that may block traffic, and provisions for traffic control. The TCP shall be consistent with any other requirements of the construction phase.

Contact the Permit Service Center (PSC) at 1947 Center Street or 981-7500 for details on obtaining Construction/No Parking Permits (and associated signs and accompanying dashboard permits). Please note that the Zoning Officer and/or Traffic Engineer may limit off-site parking of construction-related vehicles if necessary to protect the health, safety or convenience of the surrounding neighborhood. A current copy of this Plan shall be available at all times at the construction site for review by City Staff.

- 18. Archaeological Resources (Ongoing throughout demolition, grading, and/or construction).** Pursuant to CEQA Guidelines section 15064.5(f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore:
- A. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist, historian or paleontologist to assess the significance of the find.
 - B. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified professional would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Berkeley. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by the qualified professional according to current professional standards.
 - C. In considering any suggested measure proposed by the qualified professional, the project applicant shall determine whether avoidance is necessary or feasible in light of factors such as the uniqueness of the find, project design, costs, and other considerations.
 - D. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation measures for cultural resources is carried out.
 - E. If significant materials are recovered, the qualified professional shall prepare a report on the findings for submittal to the Northwest Information Center.

- 19. Human Remains (Ongoing throughout demolition, grading, and/or construction).** In the event that human skeletal remains are uncovered at the project site during ground-disturbing activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.
- 20. Paleontological Resources (Ongoing throughout demolition, grading, and/or construction).** In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards [SVP 1995,1996]). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.
- 21. Paleontological Resources (Ongoing throughout demolition, grading, and/or construction).**
- A. *Qualified Paleontologist.* The project applicant shall retain a Qualified Paleontologist prior to excavations or ground disturbance that will exceed three feet in depth. The Qualified Paleontologist shall direct all mitigation measures related to paleontological resources. A qualified professional paleontologist is defined by the SVP standards as an individual preferably with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least two years (SVP 2010).
 - B. *Paleontological Worker Environmental Awareness Program (WEAP).* Prior to ground disturbance, the applicant shall incorporate information on paleontological resources into the Project's Worker Environmental Awareness Training (WEAP) materials, or a stand-alone Paleontological Resources WEAP shall be submitted to the Department of Planning and Development at the City of Berkeley. The Qualified Paleontologist or his or her designee shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The Paleontological WEAP training shall be fulfilled simultaneously with the overall WEAP training, or at the first preconstruction meeting at which a Qualified Paleontologist attends prior to ground disturbance. Printed literature (handouts) shall accompany the initial training. Following the initial WEAP training, all new workers and contractors must be trained prior to conducting ground disturbance work.
 - C. *Paleontological Monitoring.* The extent of required paleontological monitoring for the project shall be determined by the Qualified Paleontologist based on an evaluation of the previously undisturbed geologic units exposed during ground disturbing activity. The Qualified

Paleontologist shall conduct and initial spot check and evaluation of geologic conditions for ground disturbing activity for excavations between 5-10 feet below ground surface (BGS). The evaluation shall be based on field evidence including lithology of geologic units and results of microscreening or other inspections for fossil resources. If the paleontologist determines that geologic units exposed between 5-10 feet BGS have high paleontological sensitivity, then full-time monitoring shall be conducted for the duration of ground disturbing activity. If sediments between 5-10 feet BGS are determined to not be paleontological sensitive, spot checks should be conducted again for ground disturbance between 10-15 feet BGS and again for ground disturbance between 15-20 feet BGS, and again to the full depth of ground disturbance. If spot checks indicate low or no paleontological sensitivity, or if full time monitoring results in no fossil discoveries once the full depth of ground disturbance has been reached, paleontological monitoring can be discontinued for the remainder of project activity. Monitoring shall be reinstated if any new ground disturbances are required to depths exceeding previous depths of previous work, and reduction or suspension shall be reconsidered by the Qualified Paleontologist at that time.

- D. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. A Qualified Paleontologist shall evaluate the find before restarting construction activity in the area. If it is determined that the fossil(s) is (are) scientifically significant, the Qualified Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:
- 1) *Salvage of Fossils.* If fossils are discovered, the paleontological monitor shall have the authority to halt or temporarily divert construction equipment within 50 feet of the find until the monitor and/or lead paleontologist evaluate the discovery and determine if the fossil may be considered significant. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the Construction Contractor may be requested to supply heavy equipment and an operator to assist in the rapid removal of a large fossil specimen(s) or sediment sample(s). Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically- sensitive Quaternary old alluvial deposits.
 - 2) *Preparation and Curation of Recovered Fossils.* Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the UCMP), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist.
- E. *Final Paleontological Mitigation Report.* Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the Department of Planning and Development at the City of Berkeley. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

- 22. Halt Work/Unanticipated Discovery of Tribal Cultural Resources.** In the event that cultural resources of Native American origin are identified during construction, all work within 50 feet of the discovery shall be redirected. The project applicant and project construction contractor shall notify the City Planning Department within 24 hours. The City will again contact any tribes who have requested consultation under AB 52, as well as contact a qualified archaeologist, to evaluate the resources and situation and provide recommendations. If it is determined that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with State guidelines and in consultation with Native American groups. If the resource cannot be avoided, additional measures to avoid or reduce impacts to the resource and to address tribal concerns may be required.
- 23. Public Works.** All piles of debris, soil, sand, or other loose materials shall be covered at night and during rainy weather with plastic at least one-eighth millimeter thick and secured to the ground.
- 24. Public Works.** The applicant shall ensure that all excavation takes into account surface and subsurface waters and underground streams so as not to adversely affect adjacent properties and rights-of-way.
- 25. Public Works.** The project sponsor shall maintain sandbags or other devices around the site perimeter during the rainy season to prevent on-site soils from being washed off-site and into the storm drain system. The project sponsor shall comply with all City ordinances regarding construction and grading.
- 26. Public Works.** Prior to any excavation, grading, clearing, or other activities involving soil disturbance during the rainy season the applicant shall obtain approval of an erosion prevention plan by the Building and Safety Division and the Public Works Department. The applicant shall be responsible for following these and any other measures required by the Building and Safety Division and the Public Works Department.
- 27. Public Works.** The removal or obstruction of any fire hydrant shall require the submission of a plan to the City's Public Works Department for the relocation of the fire hydrant during construction.
- 28. Public Works.** If underground utilities leading to adjacent properties are uncovered and/or broken, the contractor involved shall immediately notify the Public Works Department and the Building & Safety Division, and carry out any necessary corrective action to their satisfaction.

Prior to Final Inspection or Issuance of Occupancy Permit:

- 29. Compliance with Approved Plan.** The project shall conform to the plans and statements in the Use Permit. All landscape, site and architectural improvements shall be completed per the attached approved drawings dated May 4, 2021, except as modified by conditions of approval.

At All Times:

- 30. Exterior Lighting.** All exterior lighting shall be energy efficient where feasible; and shielded and directed downward and away from property lines to prevent excessive glare beyond the subject property.
- 31. Drainage Patterns.** The applicant shall establish and maintain drainage patterns that do not adversely affect adjacent properties and rights-of-way. Drainage plans shall be submitted for approval of the Building & Safety Division and Public Works Department, if required.

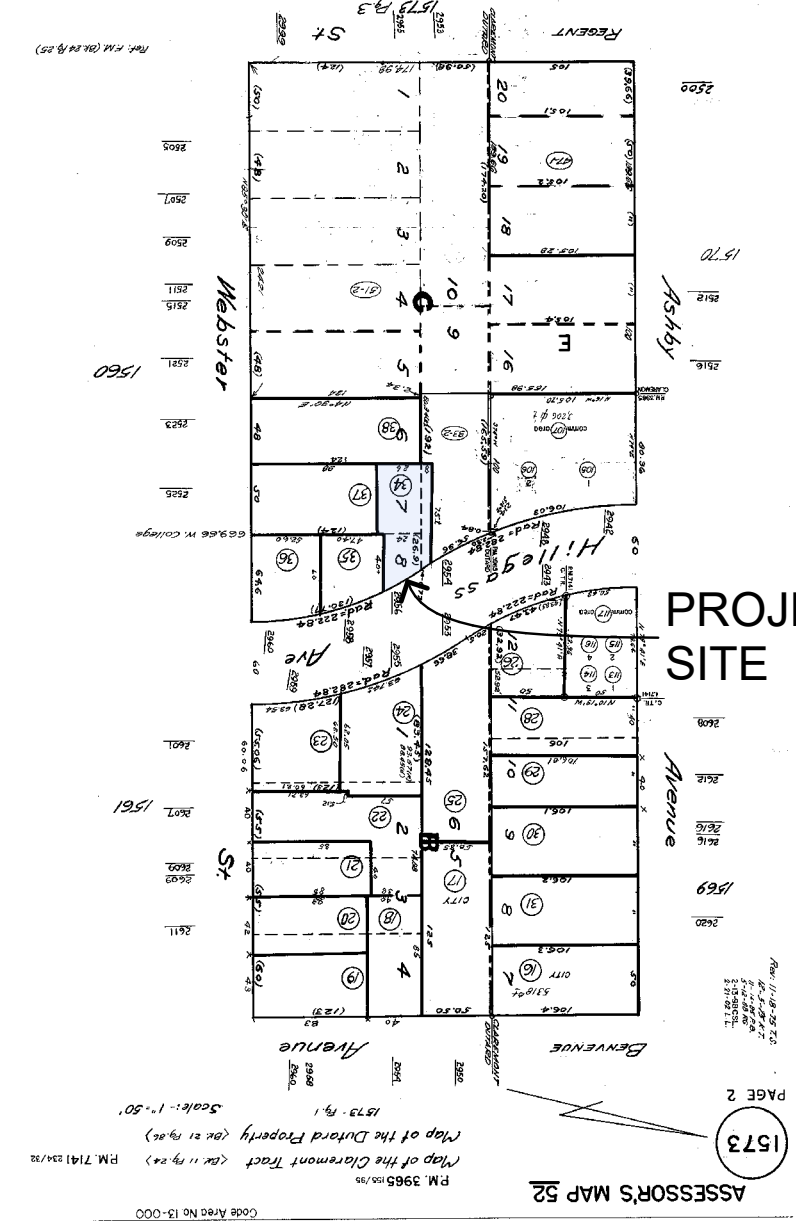
New Upper Roof Deck

Mollie & Adam Starr

2956 Hillegass Ave Berkeley CA 94705

General Notes:

- SITE CONDITIONS:**
Bidders shall visit the site and familiarize themselves with all existing limitations. All features of construction not fully shown shall be of the same type and character as that shown for similar conditions. For special conditions or discrepancies, notify the architect before bidding or proceeding with the work.
- PERMIT FEES AND INSURANCE:**
The contract shall include all permit fees unless specifically noted in the bid and contract. The contractor shall carry liability, property damage, and workers compensation insurance, and provide owner certificates for these policies. The owner shall carry fire insurance.
- BUILDING CODES:**
All work shall conform with all applicable current codes and ordinances. The contractor shall notify the architect of all modifications requested by the building department, the owner, consultants, and other parties.
- SUBCONTRACTORS SHALL PROVIDE SIGNED CF24R FORMS** to the general contractor upon completion of their scope of work.
- TRADE STANDARDS:**
Work shall be completed skillfully and in accordance with accepted trade standards. Standards for care and workmanship shall be as defined and outlined by the national trade body such as SMACNA, Tile Council of America, NWMA, NRCA, Lathing and Plaster Institute of Northern California, etc.
- MANUFACTURER'S INSTRUCTIONS:**
Follow the manufacturers' instructions carefully. Instructions and warranties shall be given to the owner upon substantial completion.
- SUBSTITUTIONS:**
Substitutions will be considered, but the contractor shall not substitute equipment, material, or methods without specific approval by the architect prior to execution of work.
- SCHEDULE:**
The contractor shall inform the owner and architect of the construction schedule prior to starting work. The contractor shall make every effort to minimize disruption to occupants and neighbors during construction.
- COORDINATION OF WORK:**
The contractor shall coordinate work between subcontractors, tradespeople, and suppliers as shown in the drawings, specifications, and contract.
- DIMENSIONS OR DISCREPANCIES:**
Contractor shall verify all dimensions in the field. Written dimensions have precedence over scaled dimensions. Dimensions are to the rough frame unless otherwise noted. Any discrepancies between the drawings and/or specifications must be brought to the attention of the architect for clarification, prior to proceeding with work.
- NOTCHES, BORES AND CUTS TO THE STRUCTURE:**
Do not notch, bore or cut members for pipes, ducts or other reasons except as shown on drawings without the specific advance approval of the architect.
- DEMOLITION:**
The contractor shall execute demolition work to ensure the safety of persons and adjacent property from damage by settlement, falling debris, and other causes in connection with this work. Where existing construction is cut, damaged, or remodeled, patch or replace with materials which match the kind, quality and performance of adjacent surfaces.
- LEAD PAINT:** Where existing painted materials are to be painted or have the paint removed and lead paint may be present, take proper precautions to ensure that the existing spaces, grounds and soil are not contaminated. Removal of lead paint and/or contaminated materials to be done using methods to minimize lead dust and flakes, airborne particles and exposure to technicians and residents. Dispose of contaminated materials in a lawful manner.
- ASBESTOS:**
If the contractor encounters asbestos, he or she shall warn all employees, subcontractors, owner, occupants, and architect prior to demolition and construction. Also, if during demolition or construction, materials containing asbestos become disturbed or airborne, they must be removed. Removal and disposal must conform to the latest requirements of the EPA, OSHA, California Department of Health Service and local authorities. Asbestos removal is the responsibility of the general contractor.
- CLEANUP:**
The contractor shall remove all construction debris at the end of the job and dispose of it legally. Clean all new windows and leave the job broom clean.
- WARRANTY:**
Contractor shall warrant all workmanship and materials for a period of one year from the date of substantial completion or from the commencement of specific warranties, and make corrections to the work during these periods.
- CHANGE ORDERS:**
All change orders shall be agreed to and in writing prior to execution of work.



Parcel Map 0521573.02
NOT TO SCALE

PLANNING & DEVELOPMENT
Land Use Planning, 1947 Center Street, Berkeley, CA 94704
Tel: 510.981.7410 TDD: 510.981.6903 Fax: 510.981.7420 Email: Planning@CityofBerkeley.info

TABULATION FORM

Project Address: 2956 Hillegass Ave Date: 4/01/21
Applicant's Name: Edward Buchanan, Architect
Zoning District: R-1

Please print in ink the following numerical information for your Administrative Use Permit, Use Permit, or Variance application:

	Existing	Proposed	Permitted/Required
Units, Parking Spaces & Bedrooms			
Number of Dwelling Units (#)	1	1	1
Number of Parking Spaces (#)	1	1	1
Number of Bedrooms (R-1, R-1A, R-2, R-2A, and R-3 only)	5	5	
Yards and Height			
Front Yard Setback (Feet)	11.6'	No Change	
Side Yard Setbacks (facing property)			
Left: (Feet)	1.11'	6'-6" ± at Deck	
Right: (Feet)	2.0'	9'-3" ± at Deck	
Rear Yard Setback (Feet)	20.8'	No Change	
Building Height* (# Stories)	3	3	
Average* (Feet)	22'-3" ±	No Change	
Maximum* (Feet)	31'-7" ±	No Change	
Areas			
Lot Area (Square-Feet)	2754 ± sf	No Change	
Gross Floor Area* (Square-Feet)	2834 ± sf	2834 ± sf	
Total Area Covered by All Floors			
Building Footprint* (Square-Feet)	1188 ± sf	No Change	
Total of All Structures			
Lot Coverage* (Footprint/Lot Area) (%)	43.1%	No Change	
Useable Open Space* (Square-Feet)	910 ± sf	1081 ± sf	
Floor Area Ratio* Non-Residential only (Except ES-R)			

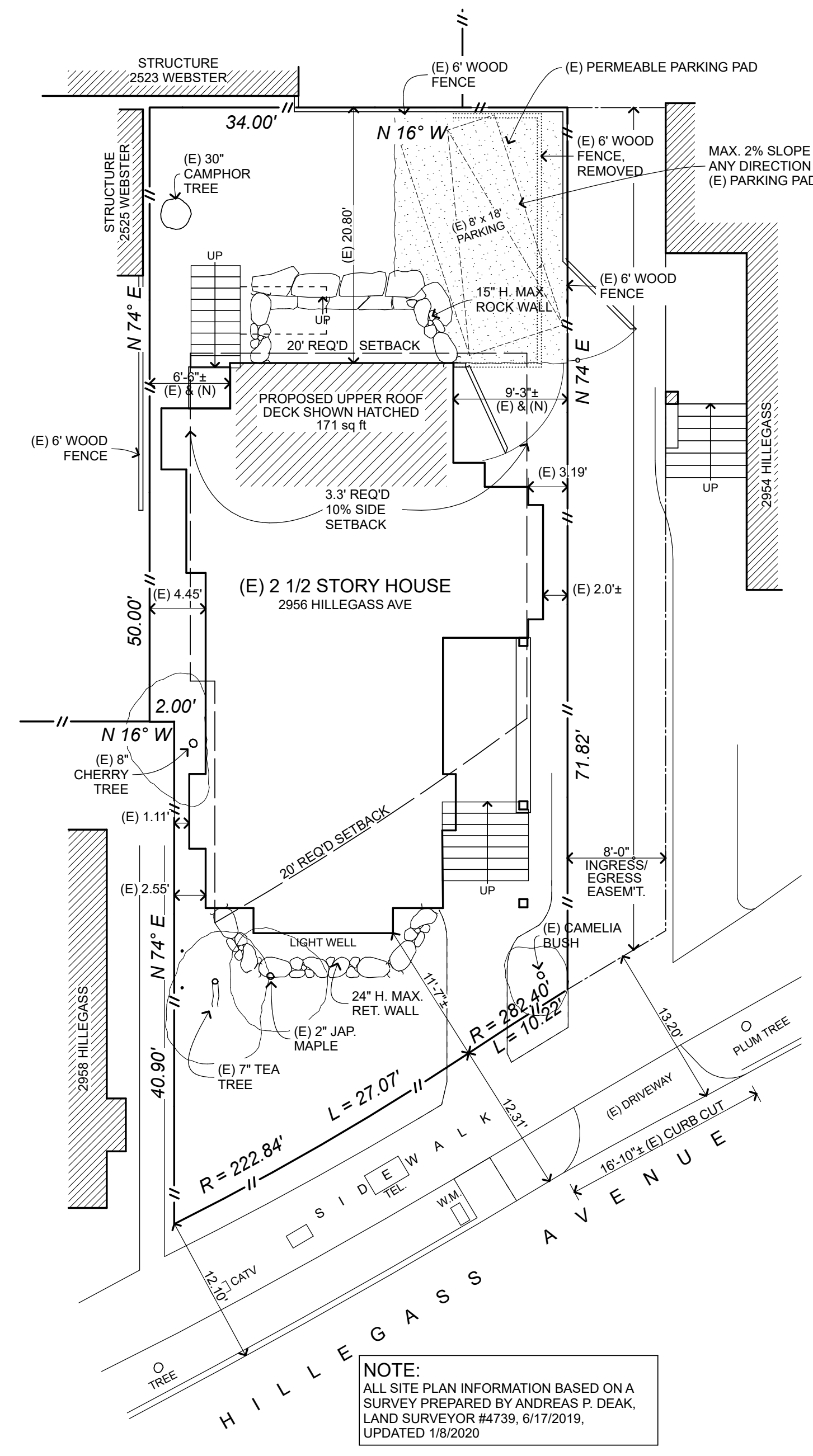
*See Definitions - Zoning Ordinance Title 23F. Revised: 05/15

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NAME (PRINTED)	SIGNATURE	ADDRESS	DATE	NO OBJECTIONS	HAVE OBJECTIONS, (STATE BRIEFLY)
EMILIO ESCUDERO	<i>Emilio Escudero</i>	2958 Hillegass	4/1/21	NONE	NA
Kurt Bigler	<i>Kurt Bigler</i>	2953 Hillegass	4/7/21	NONE	
		2954 Hillegass			
		2943 Hillegass			
		2525 Webster St			
TAMIO KASITA	<i>Tamio Kasita</i>	2523 Webster St	4/7/21	NONE	NA

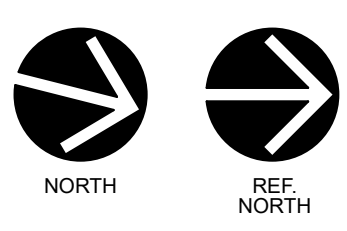
Work in Public Right-of-Way:

An Engineering Permit will be required for any work in the public right-of-way, including but not limited to construction staging, construction parking, sidewalk, shoring, drainage, or sewer work. The Engineering Permit can be issued after the Building Permit is approved and issued. Approval of this Building Permit does not authorize work in the public right-of-way.



NOTE:
ALL SITE PLAN INFORMATION BASED ON A SURVEY PREPARED BY ANDREAS P. DEAK, LAND SURVEYOR #4739, 6/17/2019, UPDATED 1/8/2020

Proposed Site Plan
SCALE 1/8" = 1'-0"



NOTE:
NEIGHBORS WHO HAVE NOT SIGNED, HAVE BEEN SENT THE DRAWINGS VIA USPS CERTIFIED MAIL.

Parties Involved:

- OWNER:** Mollie & Adam Starr
2956 Hillegass Ave
Berkeley CA 94705
415 602 4759
adam.m.starr@gmail.com
- ARCHITECT:** BUCHANAN OPALACH ARCHITECTS
580 2nd Street, Suite 275
Oakland, CA 94607
Contact: Edward Buchanan
ed@boa-inc.com
(510) 853-4567
- STRUCTURAL ENGINEER:** VAN MAREN AND ASSOC.
460 Boulevard Way
Oakland, CA 94610
Contact: Peter Van Maren
vmaengineers.peter@gmail.com
(510) 499-0300
- ENERGY CONSULTANT:** GABEL ASSOCIATES, LLC
20825 Nunes Avenue Suite A
Castro Valley, CA 94546
Contact: Michelle Austin
michelle@gabeleenergy.com
(510) 428-0803
- SOILS ENGINEER:** GEOTECNIA
Contact: Luis Moura
luis@geotecnia.com
(510) 913-1067
- SURVEYOR:** ANDREAS DEAK, LS
Contact: Andreas Deak
andreasdeak@yahoo.com
(510) 865-4289

Scope of Work:

Convert an existing rear main floor roof to a new upper floor roof deck off the existing master bedroom.



BUCHANAN OPALACH ARCHITECTS

580 2nd St, Suite 275
Oakland, CA 94607
510 595 1844

boa-inc.com

PROJECT & CLIENT:

New Upper Roof Deck

Mollie & Adam Starr
2956 Hillegass Ave
Berkeley, CA 94705

415 602 4759
adam.m.starr@gmail.com

DATE DESCRIPTION

DATE	DESCRIPTION
4/21/21	AUP APPLICATION

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SHEET TITLE:

Cover Sheet

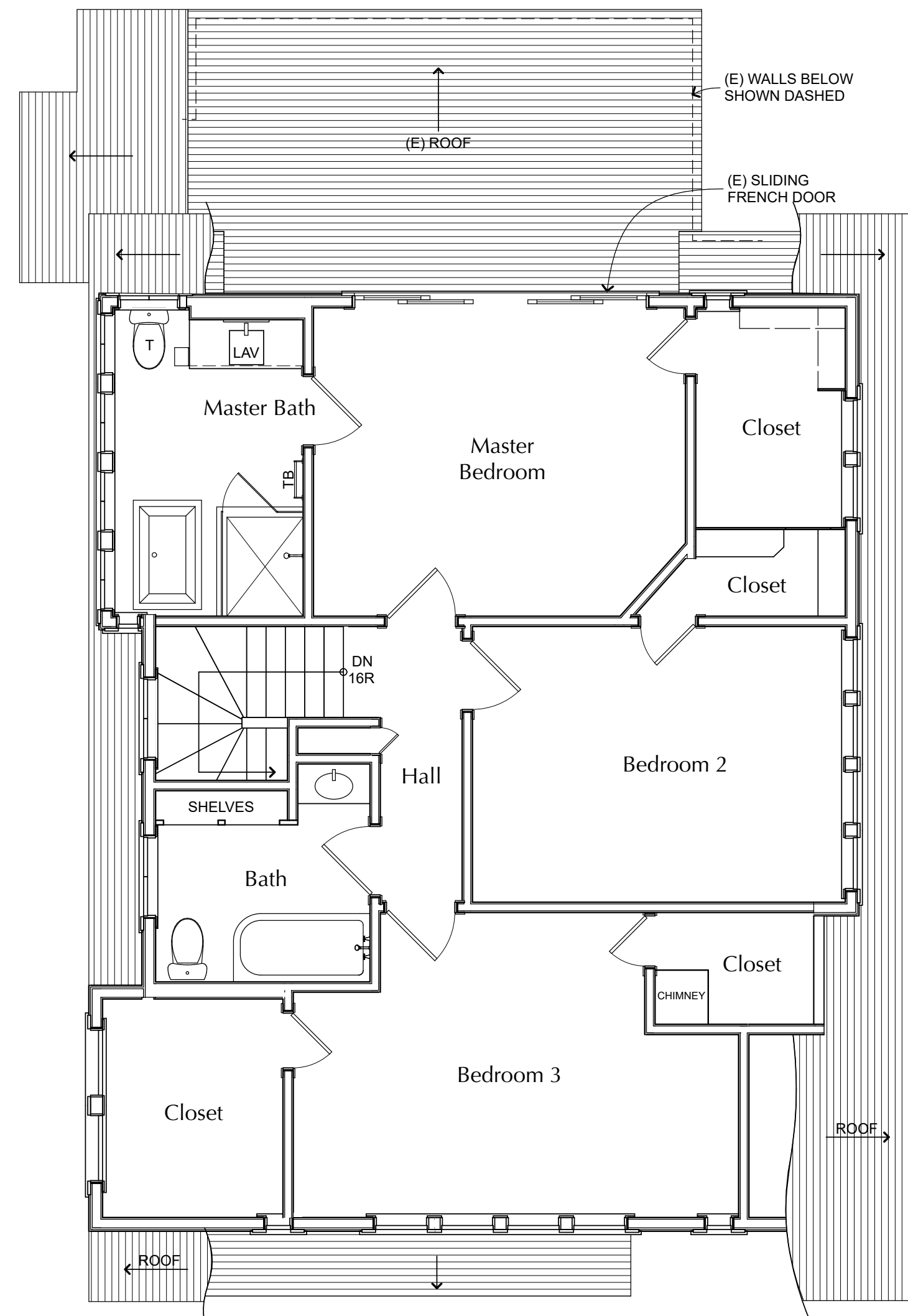
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1

Project Information:

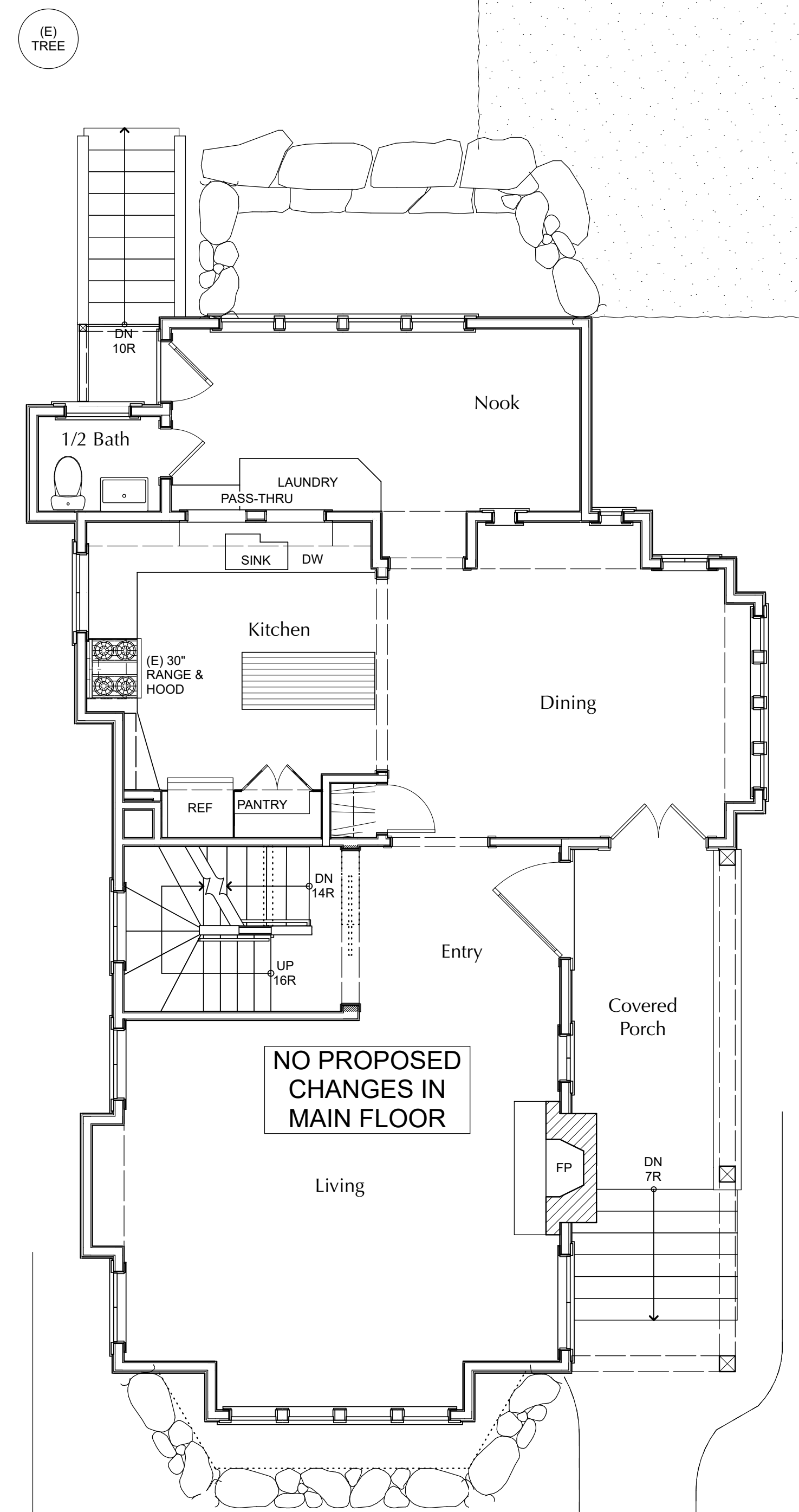
- BUILDING CODES:**
2019 California Residential Code
2019 California Building Code
2019 California Electrical Code
2019 California Mechanical Code
2019 California Plumbing Code
2019 California Energy Code
2019 California Fire Code
2019 California Green Building Standards Code
2019 California Building Code-Structural Provisions
All codes are as further modified by the City of Berkeley.
- BUILDING INFORMATION:**
OCCUPANCY: R-3
BUILDING TYPE: VB (non fire-rated construction)
SPRINKLERED: NO
FIRE ZONE: 1 (NOT WILDLAND URBAN INTERFACE)
- APPROVALS:**
USE PERMIT: ZP2019-0196 Approved 8/13/2020 for windows in setback, create 2 additional bedrooms, create parking space

Sheet Index

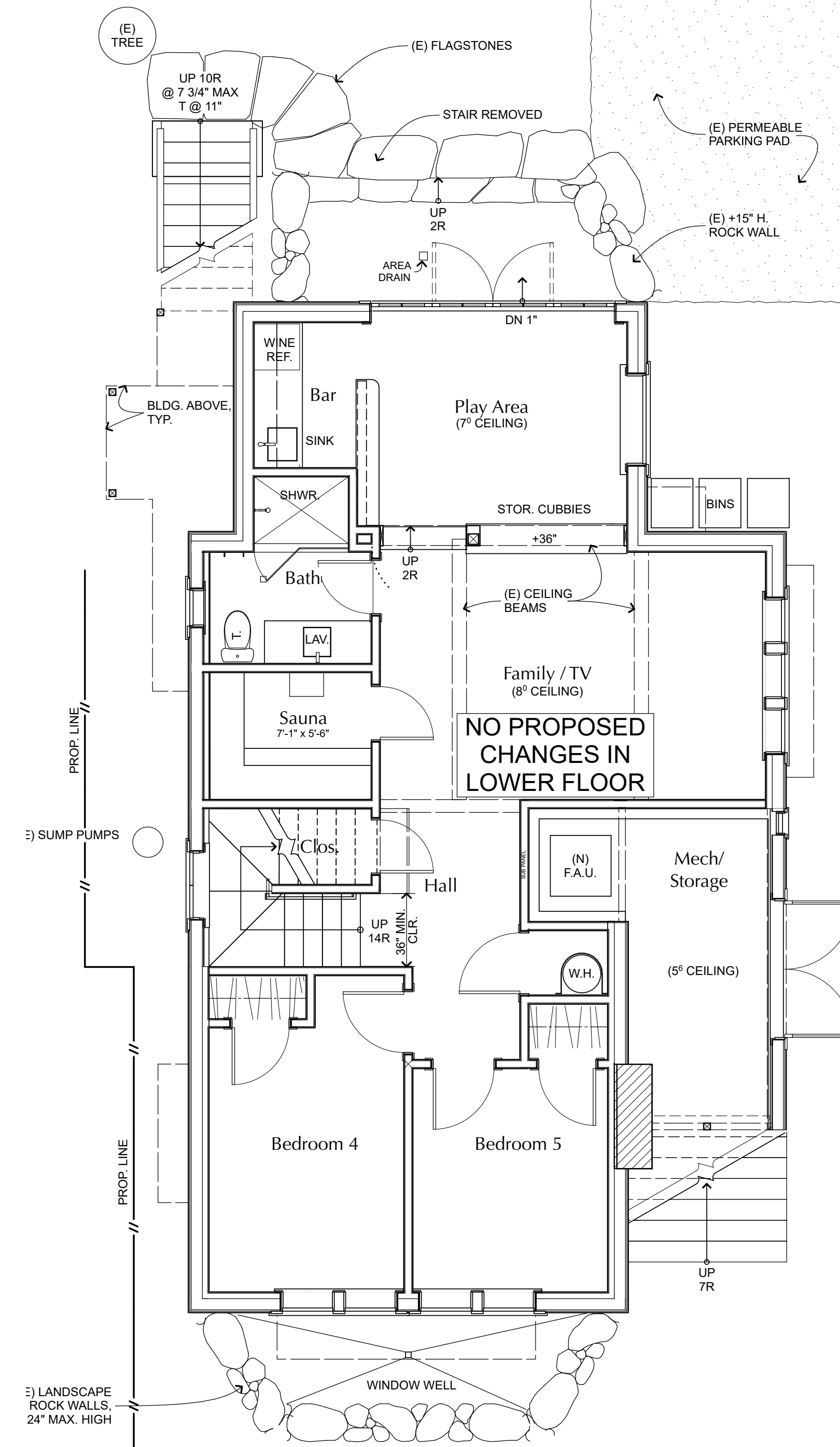
- Cover Sheet
- Existing Floor Plans
- Proposed Floor Plans
- Existing Exterior Elevations
- Proposed Exterior Elevations



Existing Upper Floor Plan
SCALE: 1/4" = 1'-0"



Existing Main Floor Plan
SCALE: 1/4" = 1'-0"



Existing Lower Floor Plan
SCALE: 1/4" = 1'-0"



**BUCHANAN
OPALACH
ARCHITECTS**

580 2nd St, Suite 275
Oakland, CA 94607
510 595 1844

boa-inc.com

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Deck**

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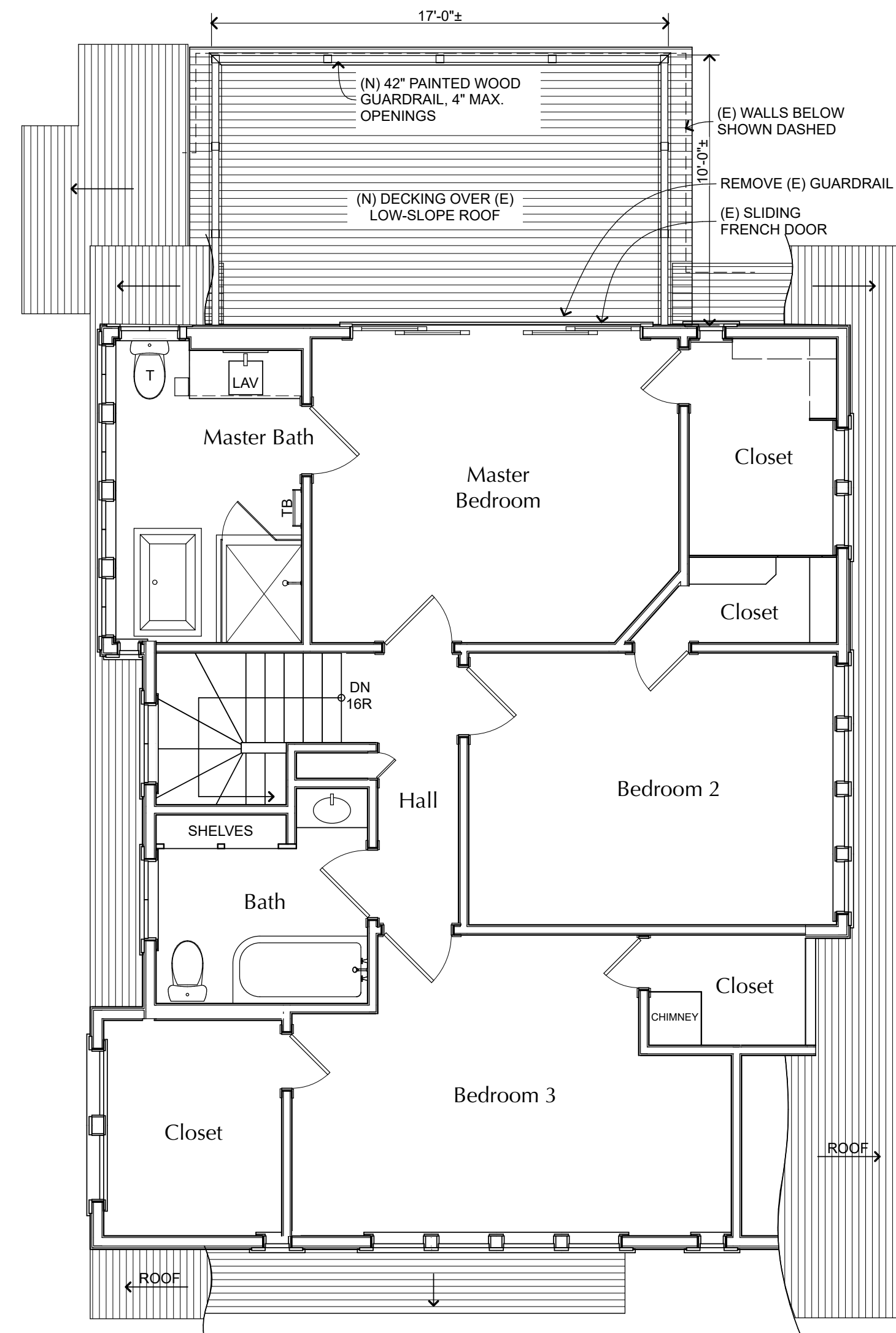
Existing Floor Plans

PROJECT NO:
1906

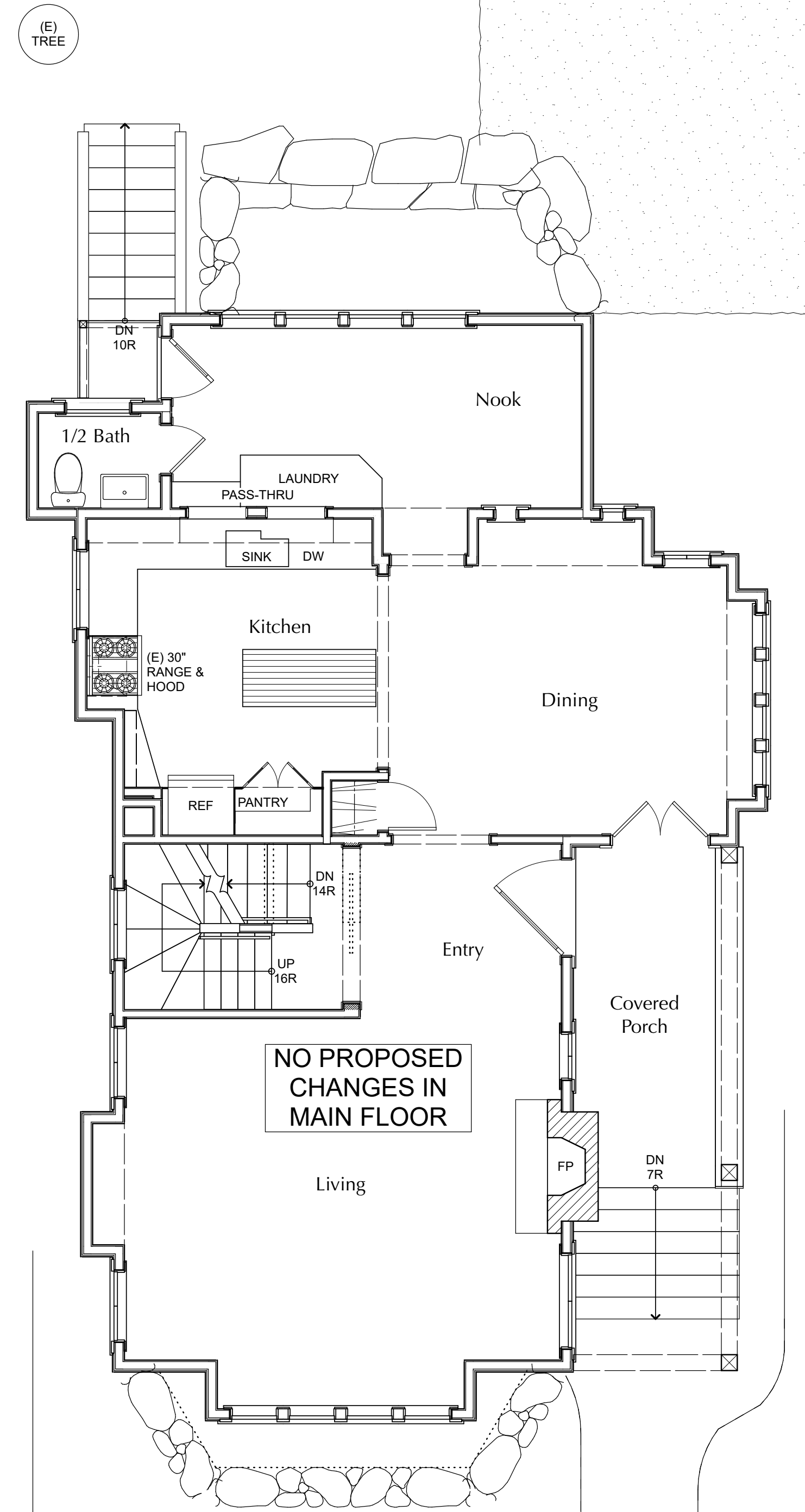
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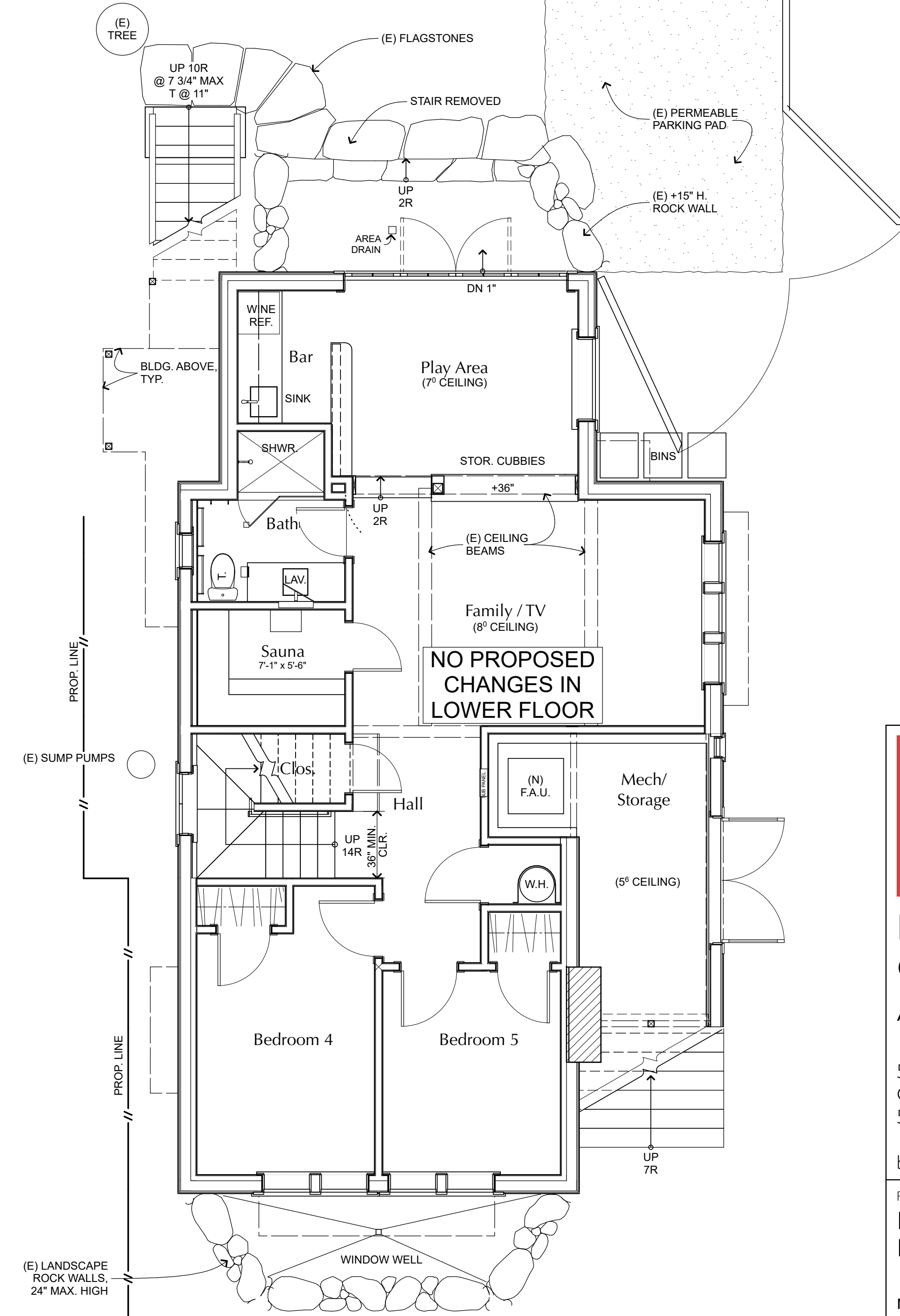
REF
NORTH



Proposed Upper Floor Plan
SCALE: 1/4" = 1'-0"



Proposed Main Floor Plan
SCALE: 1/4" = 1'-0"



Proposed Lower Floor Plan
SCALE: 1/4" = 1'-0"

Legend

- NEW (N) WALLS
- EXISTING (E) WALLS TO REMAIN
- EXISTING (E) WALLS, REMOVED
- LINE ABOVE
- LINE BELOW OR BEYOND
- SECTION CUT
- DOOR KEY
- WINDOW KEY



**BUCHANAN
OPALACH
ARCHITECTS**

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PROJECT & CLIENT:
**New Upper Roof
Deck**

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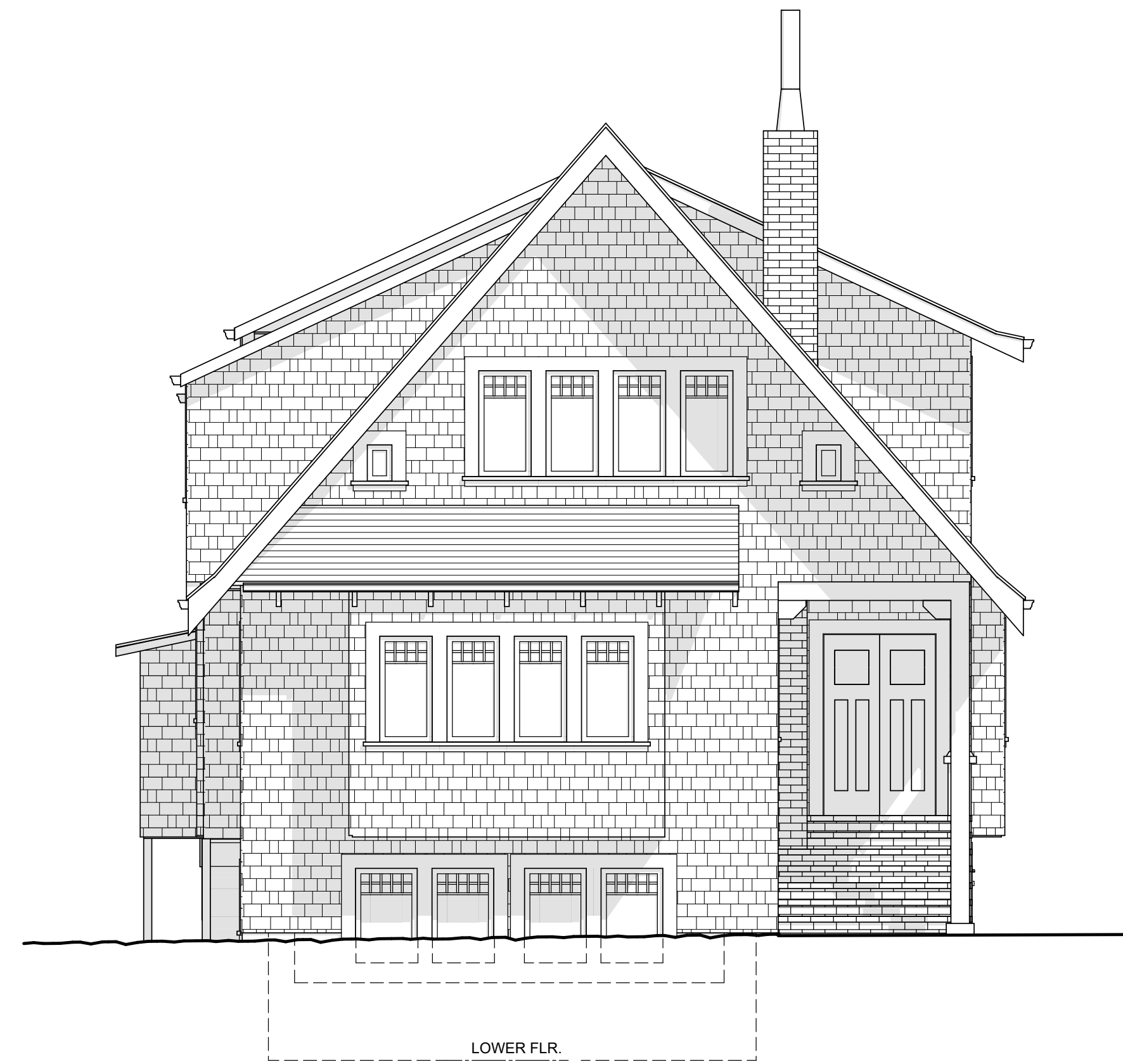
DATE	DESCRIPTION
4/21/21	AUP APPLICATION

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SHEET TITLE:
**Proposed Floor
Plans**

PROJECT NO:
1906

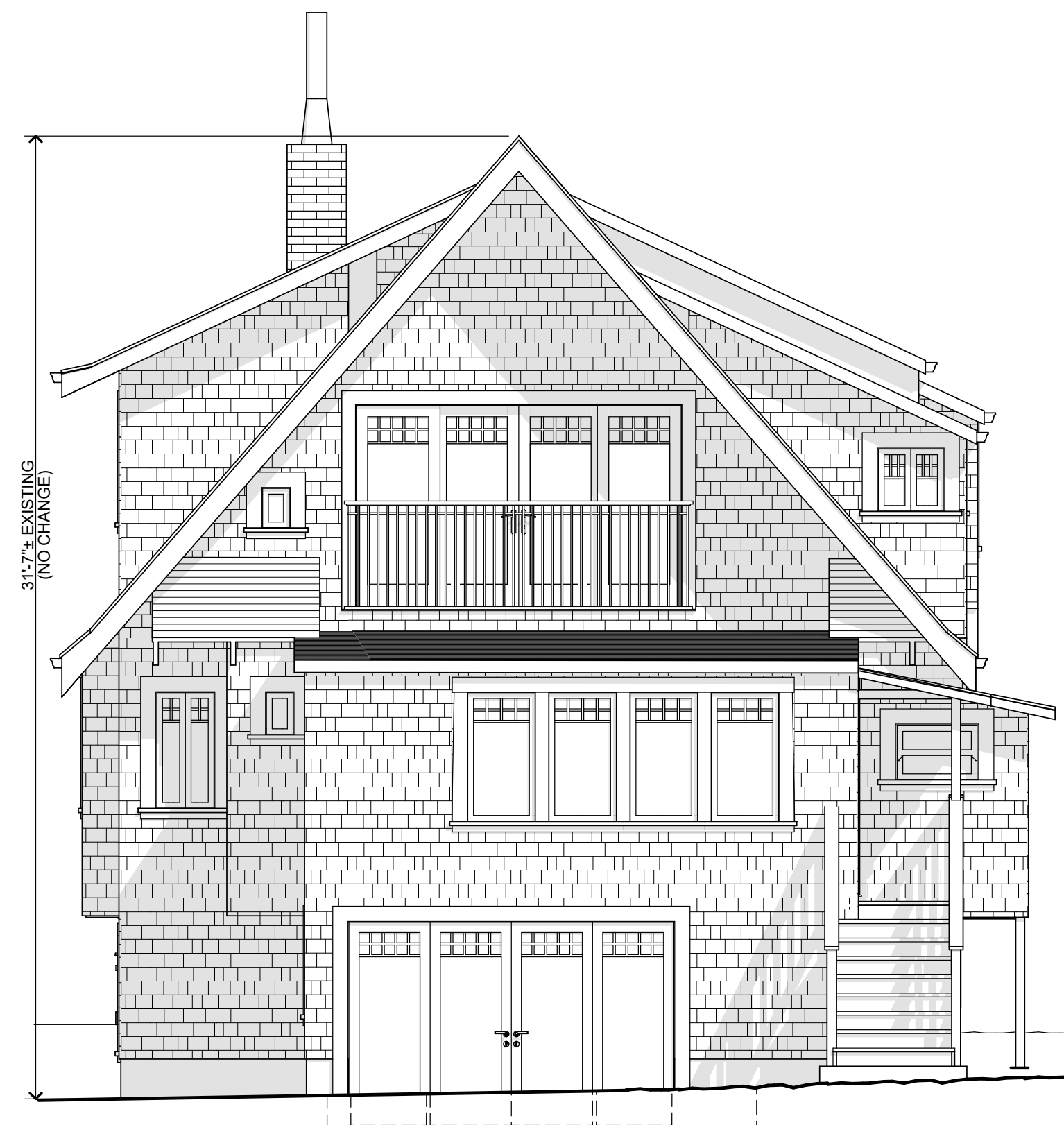
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Existing East Elevation
SCALE: 1/4" = 1'-0"



Existing North Elevation
SCALE: 1/4" = 1'-0"



Existing West Elevation
SCALE: 1/4" = 1'-0"



Existing South Elevation
SCALE: 1/4" = 1'-0"



**BUCHANAN
OPALACH
ARCHITECTS**

580 2nd St, Suite 275
Oakland, CA 94607
510 595 1844

boa-inc.com

PROJECT & CLIENT:
**New Upper Roof
Deck**

Mollie & Adam Starr
2956 Hillgass Ave
Berkeley, CA 94705
415 602 4759
adam.m.starr@gmail.com

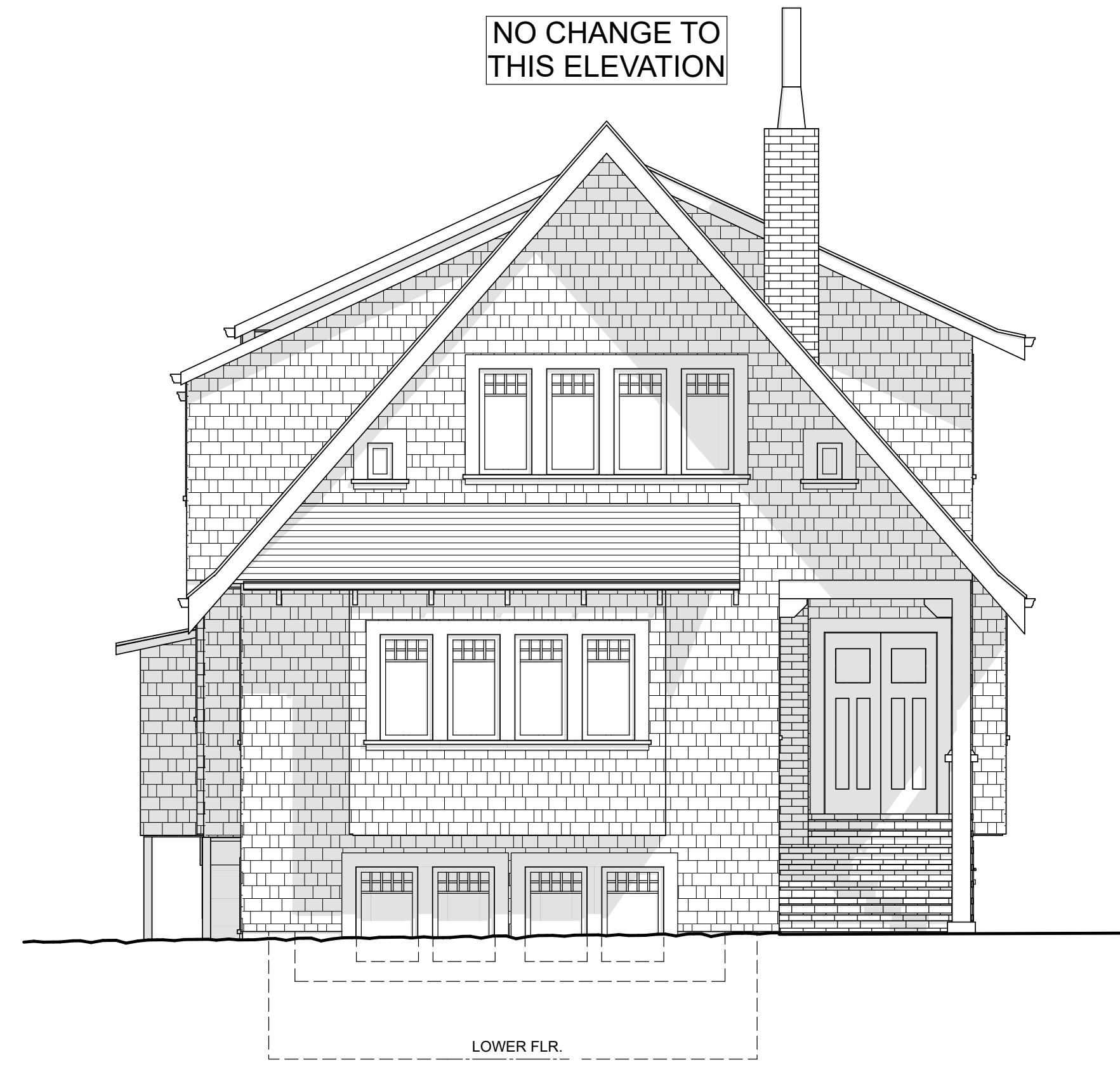
DATE	DESCRIPTION
4/21/21	AUP APPLICATION

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SHEET TITLE:
**Existing Exterior
Elevations**

PROJECT NO:
1906

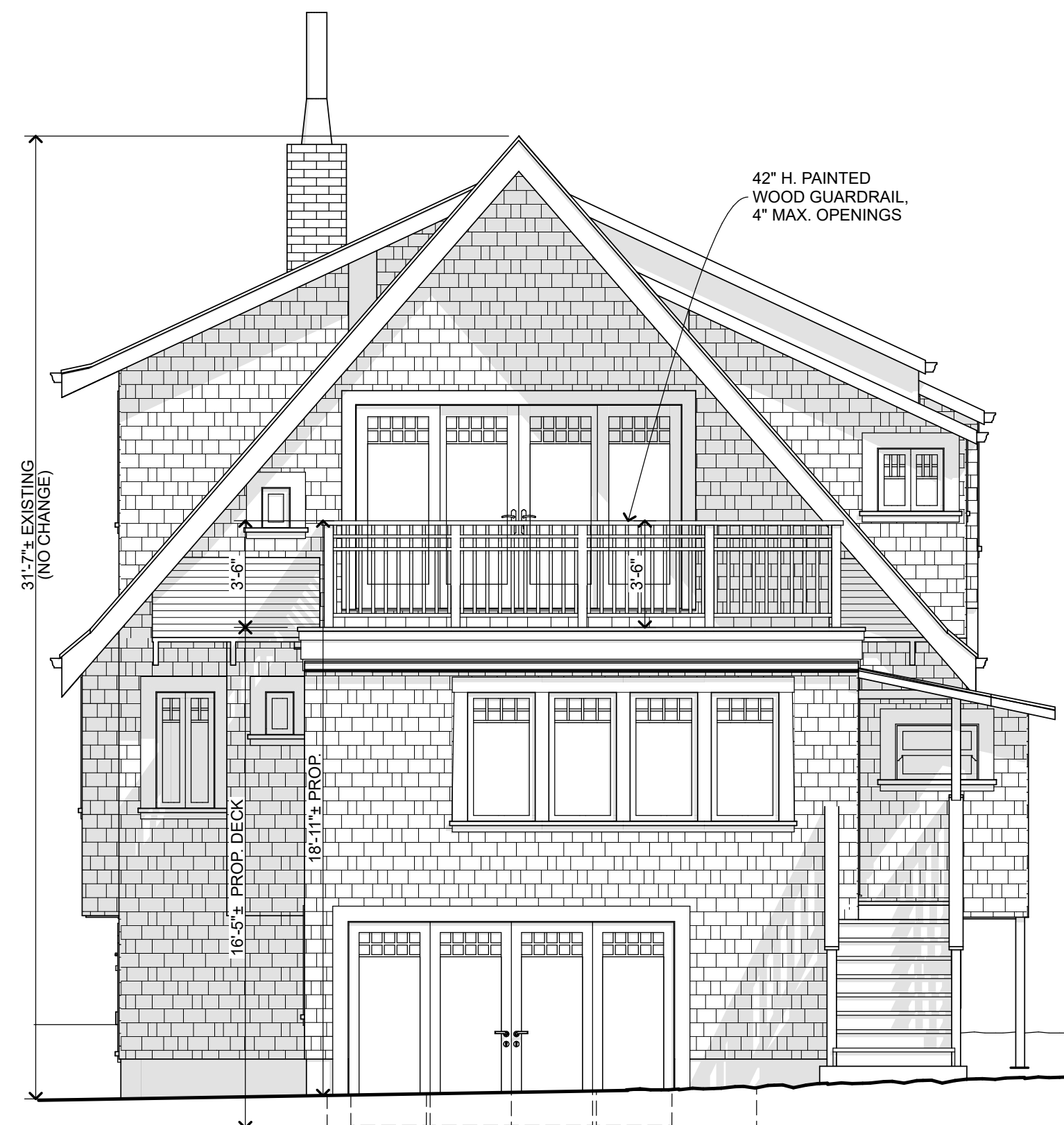
4



Proposed East Elevation
SCALE: 1/4" = 1'-0"



Proposed North Elevation
SCALE: 1/4" = 1'-0"



Proposed West Elevation
SCALE: 1/4" = 1'-0"



Proposed South Elevation
SCALE: 1/4" = 1'-0"



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Elevations**

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1906

5



Z O N I N G
A D J U S T M E N T S
B O A R D
S T A F F R E P O R T

FOR BOARD ACTION
SEPTEMBER 9, 2021

2956 Hillegass Avenue

Use 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.

I. Background

A. Land Use Designations:

- General Plan: LDR-Low Density Residential
- Zoning: R-1(Single Family Residential)

B. Zoning Permits Required:

- Use Permit, under [Berkeley Municipal Code \(BMC\)](#) Section 23C.04.070.C, for additions or enlargements to lawful non-conforming structures that are non-conforming by exceeding the maximum allowable lot coverage; and
- Administrative Use Permit, under BMC Section 23D.16.070.C, for additions over 14 feet in average height

C. CEQA Determination: It is staff's recommendation to ZAB that this project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code §21000, et seq. and California Code of Regulations, §15000, et seq.) pursuant to Section 15301 ("Existing Facilities") and Section 15303 ("New Construction or Conversion of Small Structures") of the CEQA Guidelines. The determination is made by ZAB.

D. Parties Involved:

- Applicant Edward W. Buchanan
- Property Owner Mollie & Adam Starr

Figure 1: Vicinity Map

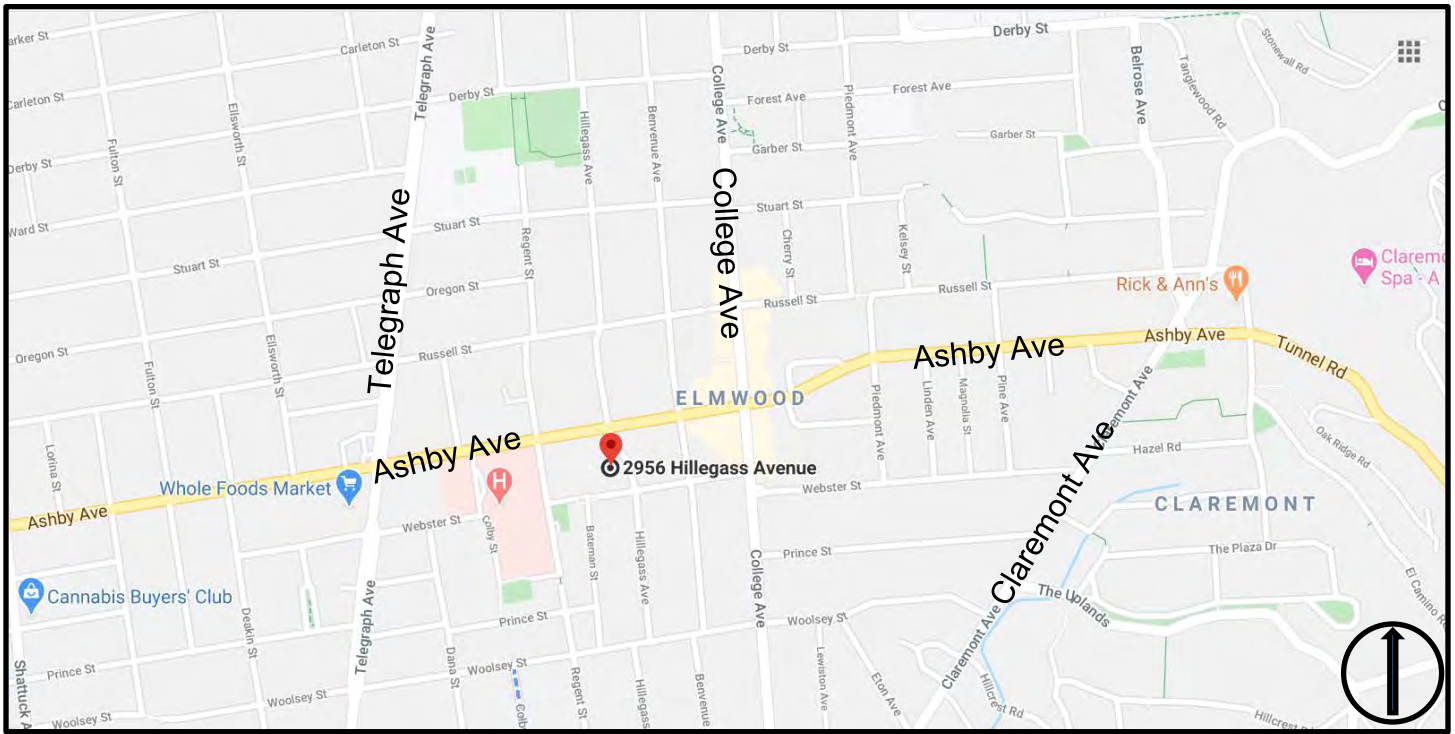


Figure 2: Aerial View



Figure 3: Site Survey

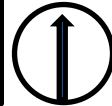
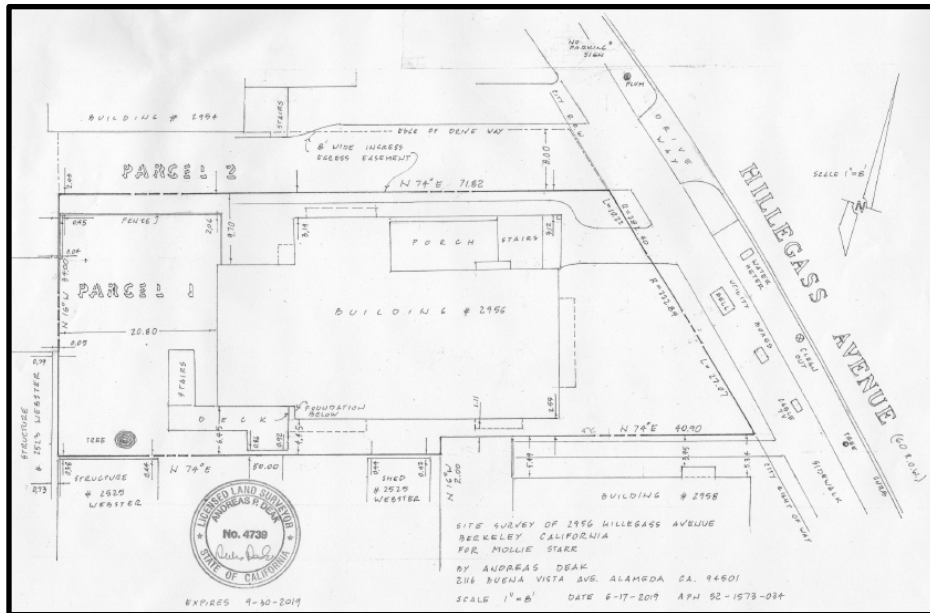


Figure 4: Proposed Site Plan

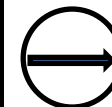
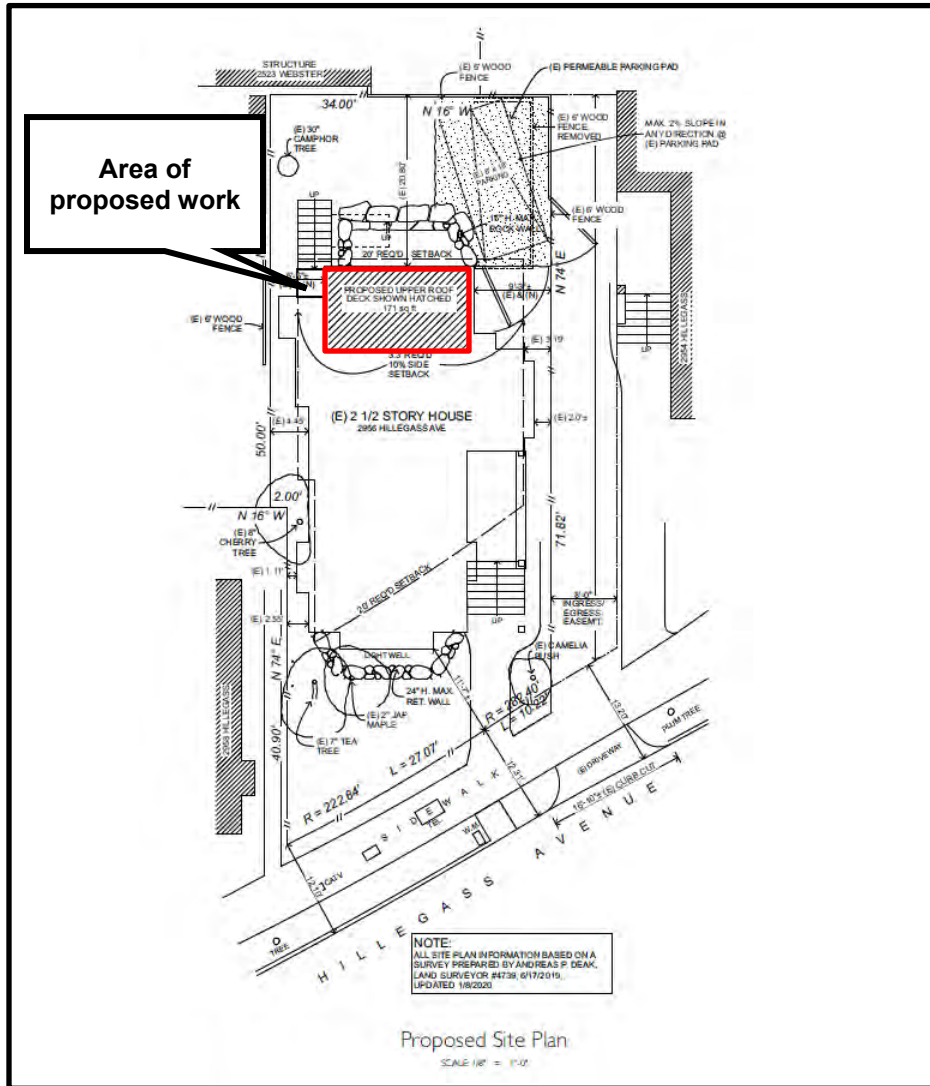


Figure 5: Existing Upper Floor

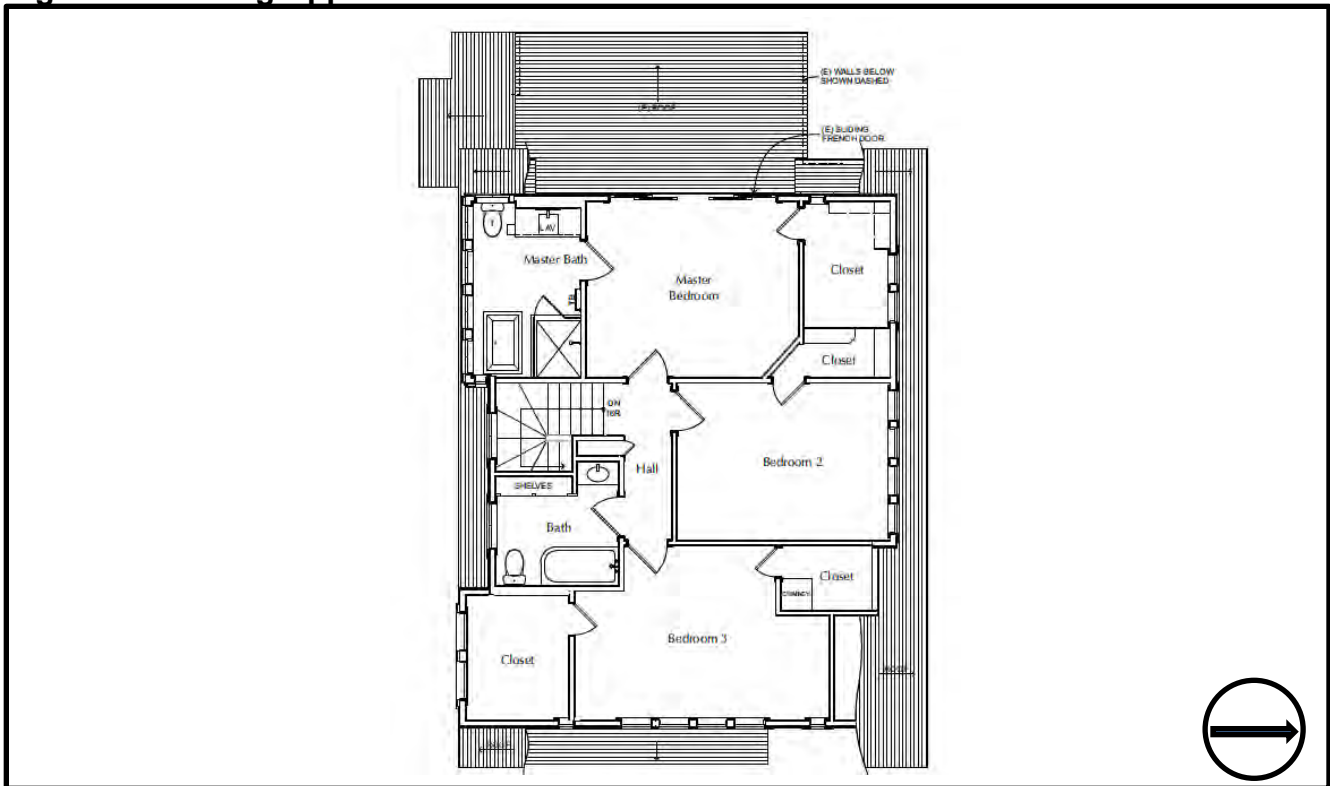


Figure 6: Proposed Upper Floor Balcony

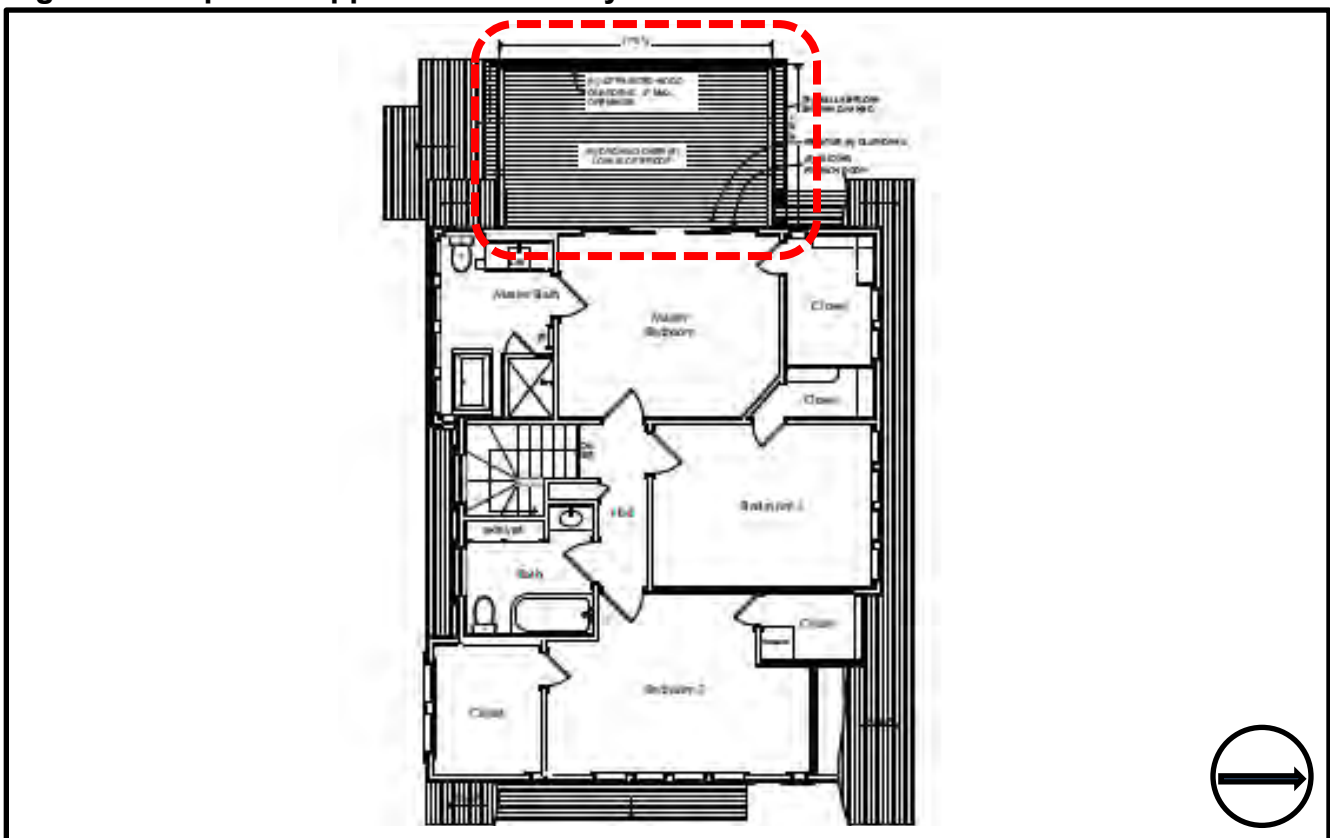


Table 1: Land Use Information

Location		Existing Use	Zoning District	General Plan Designation
Subject Property		Three-story single-family residence	Single Family Residential District (R-1)	Low Density Residential (LDR)
Surrounding Properties	North	Two-story single family dwelling (2954 Hillegass Avenue)	Restricted Multiple-Family Residential District (R-2A)	Medium Density Residential (MDR)
	South	Two-story single family dwelling (2954 Hillegass Avenue) & two-story, single family dwelling (2525 Webster St.)	Single Family Residential District (R-1)	Low Density Residential (LDR)
	East	Three-story duplex (2955 & 2957 Hillegass Ave.)		
	West	Single-story single family residence (2523 Webster St.)		

Table 2: Special Characteristics

Characteristic	Applies to Project?	Explanation
Affordable Child Care Fee for qualifying non-residential projects (Per Resolution 66,618-N.S.)	No	These fees apply to projects with more than 7,500 square feet of new non-residential gross floor area. This project is not subject to these resolutions because no new non-residential space is proposed.
Affordable Housing Fee for qualifying non-residential projects (Per Resolution 66,617-N.S.)	No	
Creeks	No	No open creek or culvert exists within 40 ft. of the site.
Housing Accountability Act (Gov't Code Section 65589.5)	No	The proposed project is not a "Housing Development Project" ¹ as defined by Government Code because it does not propose to add dwelling units.
Oak Trees	No	There are no oak trees on the site.
Rent Controlled Units	No	No rent controlled units are at this site.
Residential Preferred Parking (RPP)	No	The site is not within a Residential Preferred Parking Area.
Seismic Hazards Mapping Act (Liquefaction, Fault-rupture, Landslide)	No	The site is not located within an area susceptible to liquefaction, Fault-rupture or Landslide as shown on the State Seismic Hazard Zones map.
Soil/Groundwater Contamination	No	The site is not located on a hazardous waste site pursuant to Government Code Section 65962.5
Transit	No	There is a bus stop near the project site on College Avenue that provides access to an AC Transit bus routes (51B).

¹ Per Government Code Section 65589.5(h)(2) "Housing development project" means a use consisting of any of the following: (A) Residential units only; (B) Mixed-use developments consisting of residential and nonresidential uses in which nonresidential uses with at least two-thirds of the square footage designated for residential use; and (C) Transitional housing or supportive housing.

Table 3: Project Chronology

Date	Action
May 4, 2021	Application submitted
June 4, 2021	Application deemed complete
N/A	DRC/LPC hearing
August 26, 2021	Public hearing notices mailed/posted
September 9, 2021	ZAB hearing

Table 4: Development Standards

Standard BMC Sections 23C,16.070-080		Existing	Proposed Total	Permitted/ Required
Lot Area (sq. ft.)		2,754	2,754	5,000 min
Gross Floor Area (sq. ft.)		2,834	2,834	N/A
Dwelling Units	Total	1	1	1
Building Height	Average	22' - 3"	22' - 3"	28' 35' w/Use Permit
	Maximum	31'-7"	31'-7"	35' max
	Stories	3	3	3 max
Building Setbacks	Front	11'-7"	11'-7"	20' min
	Rear	20'-9"	20'-9"	20' min
	Left Side	1'-1"	1'-1"	3.5 min
	Right Side	2'-0"	2'-0"	3.5 min
Lot Coverage (%)		43.1%	43.1%	40% max
Usable Open Space (sq. ft.)		>400	>400	400 min
Parking	Automobile	1	1	1 min

II. Project Setting

A. Neighborhood/Area Description: The subject site is located in a generally flat residential neighborhood that consists of primarily two and three-story residential properties that include single-family dwellings, duplexes, and multi-family dwellings with conforming and non-conforming setbacks and densities. While the majority of the surrounding uses are residential, the Ashby Avenue (north), Telegraph Avenue (west) and College Avenue (east) commercial districts are within close proximity. Alta Bates Summit Medical Center is one block to the west of the subject property.

B. Site Conditions: The subject property is approximately 2,754 square feet in area. The existing three-story single-family dwelling was constructed in 1910 and is approximately 2,834 square feet. As shown in Table 4 above, it is non-conforming for lot coverage and front and side setbacks.

III. Project Description: The proposed project includes the addition of a 170 square foot balcony off of the third-floor master bedroom at the rear of the subject dwelling. The proposed balcony would be located above the existing roof of the story below, approximately 16 feet, 3 inches above grade plus a 3-foot, 6-inch guard rail. This would increase the overall height (to the top of the railings) of this portion of the building to approximately 20 feet. The balcony would be located within the existing footprint and outside the required rear and side setbacks.

IV. Community Discussion

A. Neighbor/Community Concerns: Prior to submitting this application to the City, a pre-application poster was erected by the applicant in April 2021. On August 26, 2021, the City mailed public hearing notices to property owners and occupants within a 300-foot radius and to interested neighborhood organizations and posted notices within the neighborhood in three locations. At the time of this writing, staff has received 18 communications from different neighbors in support of the project and 19 communications from the neighbor to the north at 2954 Hilllegass Avenue with objections to the proposed project. (Attachment 4)

B. Committee Review: This project is not subject to advisory committee review.

V. Issues and Analysis

A. Compatibility with District Purposes:

The purposes of the Single Family Residential (R-1) District are to:

1. Recognize and protect the existing pattern of development in the low density, single family residential areas of the City in accordance with the Master Plan;
2. Make available housing for persons who desire detached housing accommodations and a relatively large amount of Usable Open Space;
3. Protect adjacent properties from unreasonable obstruction of light and air; and
4. Permit the construction of community facilities such as places for religious assembly, Schools, parks and libraries which are designed to serve the local population when such will not be detrimental to the immediate neighborhood.

The proposed addition to the structure on this property with non-conforming lot coverage and setbacks is not expected to be detrimental as this project would continue to meet other development regulations in the R-1 district including building heights and building separation.

The lot's existing lot coverage and front and side setback non-conformities are commonly found in the surrounding neighborhood. The proposed addition is under the 28 feet average height limit of the District, and would be compatible with the development pattern for the broader area that is characterized by a mix of two and three-story residential buildings with single family and multiple units and buildings per parcel.

B. Addition to a Structure on a Parcel with Non-Conforming Lot Coverage: BMC

Section 23C.04.070.C allows additions and/or enlargements of lawful non-conforming structures that are non-conforming by reason of violation of the maximum allowable lot coverage to be permitted with a Use Permit if the addition does not increase lot coverage or exceed the height limit. The proposed project would add a 17 by 10 foot third-story balcony above an existing roof within the exiting footprint.

Pursuant to BMC section 23D.16.090.A for the R-1 zoning district, the Board may approve an application for a Use Permit for additions on a property with non-conforming lot coverage if the proposed construction satisfies the applicable development standards of the district and meets the findings of non-detriment. As shown in Table 4: Development Standards, the proposed addition meets the R-1 district standards for density, height, number of stories, rear yard setback, open space and parking. A discussion of the project's potential impact to sunlight, shadows, privacy, air and views follows below:

C. General Non-Detriment for Use Permits and Administrative Use Permits:

1. As required by Section 23B.32.040.A of the BMC, the project, under the circumstances of this particular case existing at the time at which the application is granted, would not be detrimental to the health, safety, peace, morals, comfort, and general welfare of the persons residing or working in the neighborhood of such proposed use or be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood, or to the general welfare of the City because:

- The property would continue to conform to the R-1 development standards regarding density, height, and usable open space (BMC 23D.16.070), and parking. Although the addition would increase the height of a portion of the building in the rear, its roofline would be lower than the dwelling's highest roofline and would not impact the average or maximum height. It would continue to provide usable open space beyond the 400 square foot minimum requirement for the existing single-family dwelling. One off-street parking space is available where one is required. Although the addition would increase the height of a portion of the building in the rear, its roofline would be lower than the dwelling's roofline, it would not impact the average or maximum height and It would maintain the existing building footprint for the dwelling. The addition would not increase lot coverage or exceed the height limit. Therefore, air and light impacts to surrounding properties due to the project would not be detrimental.
- The project is subject to the City's standard conditions of approval regarding construction noise and air quality, waste diversion, toxics, and storm water requirements, thereby ensuring the project would not be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in the area or neighborhood of such proposed use or be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood or to the general welfare of the City.

- Privacy:

The proposed balcony along the rear elevation in the west would be 9'-3" ft. from the side property line to the north where 3.5 ft. is required, 20 ft. from the rear property line to the west where 20 ft. is required and 6'-6" ft. from the south property line where 3.5 ft. is required. It is separated from the closest three-story neighboring property at 2954 Hillegass Avenue by approximately 15 feet. Since the proposed balcony would be located outside of all the required setbacks, it is not expected to create detrimental impacts to privacy of neighboring dwellings.

2. Sunlight, Air and View (BMC Section 23D.16.090): The proposed addition would increase a portion of the building's height in the rear, however, it would not create new sunlight, air, or view impacts on the neighboring dwellings because the overall height would be lower than the existing dwelling's highest roofline, it would not expand the building footprint, would be located outside of all required setbacks, and would be separated from the closest neighbor property to the north by more than 15 feet.

D. General Plan Consistency: The 2002 General Plan contains several policies applicable to the project, including the following:

1. Policy LU-3–Infill Development: Encourage infill development that is architecturally and environmentally sensitive, embodies principles of sustainable planning and construction, and is compatible with neighboring land uses and architectural design and scale.
2. Policy LU-7–Neighborhood Quality of Life, Action A: Require that new development be consistent with zoning standards and compatible with the scale, historic character, and surrounding uses in the area.
3. Policy UD-16–Context: The design and scale of new or remodeled buildings should respect the built environment in the area, particularly where the character of the built environment is largely defined by an aggregation of historically and architecturally significant buildings.
4. Policy UD-24–Area Character: Regulate new construction and alterations to ensure that they are truly compatible with and, where feasible, reinforce the desirable design characteristics of the particular area they are in.
5. Policy UD-32–Shadows: New buildings should be designed to minimize impacts on solar access and minimize detrimental shadows.

Staff Analysis: As discussed above, the project would not substantially block views, cast shadows, or create impacts on the privacy of adjacent neighbors. The balcony addition would occur within the existing building footprint and meets the R-1 Zoning District requirements. Because the balcony would be located above the existing roof of the story below, it will not increase the non-conforming lot coverage.

Additionally, the project would be consistent with the design character of other buildings in the vicinity.

VI. Recommendation

Because of the project's consistency with the Zoning Ordinance and General Plan, and its minimal impact on surrounding properties, staff recommends that the Zoning Adjustments Board **APPROVE** Use Permit #ZP2021-0168 pursuant to Section 23B.32.030 and subject to the attached Findings and Conditions (see Attachment 1).

Attachments:

1. Findings and Conditions
2. Project Plans, received May 4, 2021
3. Notice of Public Hearing
4. Communications received from January 2021 to September 2021

Staff Planner: Nilu Karimzadegan, nkarimzadegan@cityofberkeley.info, (510) 981-7419

>> WELL, WE HAVE A QUORUM SO I WANT TO GET GOING BECAUSE WE HAVE A PACKED SCHEDULE TONIGHT AND SEVERAL ISSUES THAT HAD SOME CONCERNS AND WE NEED TO GIVE AN OPPORTUNITY TO SPEAK AND WANT TO REMIND EVERYBODY THAT THERE IS AN EFFECTIVE TIME LIMIT ON THE COMMISSION. SHOSHANA CORRECT ME IF I'M WRONG WE CANNOT START NEW BUSINESS AFTER 10:00 P.M. WITHOUT A VOTE OF THE COMMISSION TO CONTINUE. AM I GETTING THAT RIGHT.

>> WHAT I CAN'T REMEMBER AND WE SHOULD CLARIFY IS A MAJORITY VOTE OR UNANIMOUS VOTE OR TWO-THIRDS VOTE.

>> I PRESUME IT WOULD HAVE TO BE UNANIMOUS BECAUSE WE COULDN'T HAVE COMMISSIONERS NOT PARTICIPATING AFTER 10:00 P.M.

>> I'LL LOOK THAT UP.

>> WE HAVE TO 10:00 TO FIGURE IT OUT.

>> BUT I'LL TRY TO MOVE THINGS ALONG TONIGHT WITH YOUR HELP AND THE PEOPLE WHO JOINED US FROM THE PUBLIC. SO WITHOUT FURTHER ADO, THIS MEETING WILL BE CONDUCTED EXCLUSIVELY THROUGH VIDEO AND TELECONFERENCE PURSUANT TO ORDER ISSUED BY GOVERNOR NEWSOM MARCH 17, 2020. THE MEETING WILL BE CONDUCTED EXCLUSIVELY THROUGH TELECONFERENCE AND ZOOM VIDEO CONFERENCE. BE ADVISED PURSUANT TO THE ORDER AND SHELTER IN PLACE ORDER TO LIMIT THE SPREAD OF THE COVID-19 VIRUS THERE WILL NOT BE A PHYSICAL

MEETING LOCATION AVAILABLE. FOR THOSE WHO HAVE JOINED TO SPEAK TONIGHT FROM THE PUBLIC YOU'LL BE INVITED TO SPEAK AT KEY MOMENTS. WHEN YOU ARE INVITED TO SPEAK YOU SHOULD USE THE RAISE HAND ICON ON YOUR SCREEN AND CLICK ON IT AND YOUR HAND WILL POP UP AND THE CHAIR WILL BE ABLE TO RECOGNIZE YOU. IF YOU HAVE JOINED BY PHONE, YOU'LL NEED TO PRESS STAR 9 WHEN YOU'RE INVITED TO SPEAK AND RECOGNIZED BY THE CHAIR. BE MINDFUL WILL THE TELECONFERENCE WILL BE RECORDED AS ALL MEETINGS ARE AND OTHER RULES AND PROCEDURE OF DECORUM WILL APPLY FOR SAID MEETINGS TO BE CONDUCTED BY TELECONFERENCE, VIDEO CONFERENCE OR IN PERSON. ALL RIGHT. THAT BRINGS US TO ROLL CALL. AND EX PARTE COMMUNICATION DISCLOSURES.

>> GREAT. THANK YOU, CHAIRMAN KAHN. WE'LL DO THE ROLL CALL AND EX PARTE DISCLOSURES. SO WHEN I CALL YOUR NAME PLEASE SAY IF YOUR PRESENT AND HAVE DISCLOSURES. BOARD MEMBER TREGUB.

>> I HAVE AN EX PARTE ON 1151 GRIZZLY PEEK BOULEVARD. I RECEIVED A CALL BY A REPRESENTATIVE OBJECTING TO THE PROJECT. SHE GAVE ME STATEMENTS THAT WERE NOT SUBMITTED TO US.

>> OKAY. COUNCIL MEMBER DUFFY

>> PRESENT, NO EX PARTE.

>> COUNCIL MEMBER OLSON.

>> PRESENT, NO EX PARTE.

>> COUNCIL MEMBER O'KEEFE.

>> PRESENT AND NO EX PARTE.

>> I FORGOT A FEW PEOPLE.

>> I'M SORRY.

>> BOARD MEMBER KIM.

>> PRESENT, NO EX PARTE.

>> BOARD MEMBER SANDERSON.

>> PRESENT, EX PARTE.

>> I'M GLAD YOU'RE HERE. THANK YOU.

>> THANKS. I'M GLAD EVERYBODY GOT RECOGNIZED. THESE ARE THE ACTION MINUTES FROM THE CONSENT CALENDAR. DO I HAVE A MOTION TO APPROVE THE ACTION ITEM FROM AUGUST 26, 2021 AS A STAND ALONE VOTE? IS THAT A MOTION? IS THAT A SECOND? I SEE A NOD. WE HAVE A MOTION TO APPROVE THE MINUTES. CAN YOU TAKE THE ROLL CALL AND DON'T LEAVE ANYBODY OUT.

>> THIS IS FOR AUGUST 21, 2021. BOARD MEMBER KIM.

>> YES.

>> BOARD MEMBER DUFFY.

>> YES.

>> BOARD MEMBER GAFFNEY.

>> YES.

>> BOARD MEMBER THOMPSON.

>> YES.

>> BOARD MEMBER TREGUB.

>> YES.

>> BOARD MEMBER SANDERSON.

>> YES.

>> BOARD MEMBER OLSON.

>> YES.

>> VICE CHAIR O'KEEFE.

>> YES.

>> AND CHAIRPERSON KAHN.

>> YES.

>> WE FORGOT NON-AGENDA ITEMS.

>> LET'S GO BACK TO THAT. SO IF THERE'S ANY THERE WE GO. IF THERE'S ANY MEMBERS OR ATTENDEES THAT WOULD LIKE TO SPEAK ON NON-AGENDA ITEMS NOT ON THE CALENDAR AND GENERAL INTEREST TO THE ZONING BOARD OR OTHER PEOPLE ATTENDING THIS HEARING, THIS IS YOUR OPPORTUNITY TO SPEAK OR RAISE YOUR HAND AND I'LL RECOGNIZE

YOU, PATRICIA. AM I NOT ABLE TO RECOGNIZE PATRICIA? I'M CLICKING ON HER.

>> OKAY. HAVE YOU THREE MINUTES TO SPEAK ON A TOPIC OF INTEREST. YOU SHOULD UNMUTE YOURSELF FIRST. YOU'RE STILL MUTED. YOU'RE STILL MUTED. THERE YOU GO. WE CAN HEAR YOU NOW.

>> CALLER: MY NAME IS PATRICIA MCCULK AND I'M A GOOD FRIEND OF JOAN WAGERS AND HAVE SEEN MATT AND GINA IN THE NEIGHBORHOOD.

>> ARE YOU SPEAKING ON ONE OF THE ITEMS?

>> YES.

>> WE'RE NOT DOING THAT NOW.

>> OH, YOU JUST WANTED TO KNOW IF YOU CAN HEAR ME?

>> YES.

>> AND ALLISON, SHE NEEDS TO BE PUT BACK AS AN ATTENDEE. WE HAD A LITTLE BIT LAST WEEK.

>> WE DON'T HAVE ANYONE ELSE TO BE RECOGNIZED WE'LL CLOSE OUT THAT PORTION AND BRINGS US TO THE BALANCE OF THE CONSENT CALENDAR. I'LL RECUSE MYSELF FROM ITEM 2 AS OUR OFFICE IS THE ARCHITECT FOR THAT PROJECT. AND DEFER TO SHOSHANA TO HANDLE THAT CONSENT ITEM. ALLISON, IF YOU CAN DEMOTE ME TO ATTENDEE THAT WOULD BE GREAT AS A DON'T WANT TO BE PRESENCE FOR THIS

DISCUSSION. WE PRACTICES THIS EARLIER AND IT SHOULD WORK I SEE STOP VIDEO.

>> I CAN MUTE MYSELF AND TURN OFF MY VIDEO AND SHUT UP.

>> IS IT BECAUSE HE'S CO-HOST?

>>

>> WE HAVE TO UNDO AND REMOVE HIS CO-HOST PERMISSIONS. THEN CHANGE ROLE TO ATTENDEE.

>> OKAY. CHARLES HAS LEFT THE ROOM.

>> OKAY. SAFE. WELL, OKAY. HOLD ON I SEE SOME MEMBERS WANTING TO BE RECOGNIZED. I WAS GOING TO GET COMMENT FROM THE PUBLIC FIRST ABOUT WHAT IF THERE WAS ANY OBJECTIONS TO THE TWO REMAINING CONSENT ITEMS. CARRIE WOULD YOU LIKE IT SPEAK BEFORE THE PUBLIC? IF YOU WANT TO TAKE SOMETHING OFF, ACTUALLY, MAYBE WE SHOULD GET THE BOARD IF ANYONE FROM THE BOARD WANTS TO REMOVE ANYTHING. CARRIE.

>> I WOULD LIKE TO PULL THE ITEM ON COLLEGE OFF CONSENT.

>> LET'S PULL THAT. IF YOU'RE HEAR TO SPEAK ON COLLEGE AVENUE YOU'LL HAVE AN OPPORTUNITY IN MOMENTS. THANK YOU. IGOR DID YOU HAVE A DIFFERENT COMMENT?

>> SAME ONE.

>> IT'S OFF CONSENT AND ACTIONS WHAT ABOUT SAN PABLO, IS THERE OBJECTION FROM THE BOARD ON LEAVING IT ON CONSENT? I'LL CHECK WITH THE PUBLIC. MEMBERS OF THE PUBLIC, WHAT WE'RE DOING RIGHT NOW LISTEN CAREFULLY BECAUSE THIS IS A LITTLE BIT CONFUSING AND WANT TO MAKE SURE EVERYTHING INFORMATIONS WHAT'S GOING ON. ITEM 2, COLLEGE AVENUE WE'LL GIVE THAT A FULL HEARING. IF YOU'RE HERE FOR THAT ONE, SIT TIGHT. IF YOU'RE HERE TO SPEAK ON 1443 SAN PABLO AND HERE TO SPEAK ABOUT IT WHERE YOU'D LIKE TO REGISTER AN OBJECTION, I WOULD LIKE TO HEAR FROM YOU NOW. IF YOU'RE HEAR TO SUPPORT IT, YOU DON'T NEED TO SPEAK BECAUSE THE MOST LIKELY THING THAT'S GOING TO HAPPEN IS IF NOBODY HAS AN OBJECTION IT WILL REMAIN ON CONSENT AND THE RECOMMENDATION IS TO APPROVE SO IF THE CONSENT CALENDAR IS APPROVED THIS WILL BE APPROVED BUT IF ANYBODY IS HERE AND WOULD LIKE TO BRING UP AN OBJECTION WE'D LIKE TO HEAR THAT NOW AND IF THERE'S SUCH AN OBJECTION WE'LL PULL THIS ONE FROM THE CONSENT CALENDAR AND GIVE IT A FULL HEARING. ATTENDEES AND MEMBERS OF THE PUBLIC, RAISE YOUR HAND NOW IF YOU HAVE OBJECTION OR WOULD LIKE TO SPEAK BRIEFLY ABOUT ITEM 3, SAN PABLO AVENUE. PRESS STAR 9 IF JOINING BY PHONE. PATRICIA, I'M GOING RECOGNIZE YOU THOUGH AM I A CO-HOST? NOTHING HAPPENS WHEN I CLICK ON PEOPLE.

>> I DO NOT APPEAR TO BE A CO-HOST. PATRICIA I AM PROMISE I'M TRYING TO RECOGNIZE YOU BUT HAVING A TECHNICAL PROBLEM. THIS IS SPECIFICALLY ASKING ABOUT 1443 SAN PABLO. IF THAT'S WHAT YOU

WOULD LIKE IT SPEAK ON, NOW'S YOUR CHANCE OTHERWISE PUT YOUR
HAND DOWN IF YOU'RE HEAR TO SPEAK ON A DIFFERENT ITEM. SHE PUT
HER HAND DOWN. THANK YOU. SO 1443 SAN PABLO IS THERE ANYTHING
THAT WOULD LIKE TO OBJECT TO THAT ITEM NOW? SEEING NONE I'LL
BRING IT BACK TO THE BOARD.

>> I'LL MAKE A MOTION TO APPROVE THE CONSENT CALENDAR WITH STAFF
RECOMMENDATION.

>> TO CLARIFY, THERE'S A MOTION TO APPROVE THE CONSENT CALENDAR
WITH 1443 SAN PABLO.

>> I SECOND.

>> GREAT.

>> SO A MOTION AND SECOND. IS THERE ANY FURTHER DISCUSSION.
LET'S DO A ROLL CALL VOTE ON THE CONSENT CALENDAR JUST ITEM 3.

>> SO FOR 1443 SAN PABLO AVENUE, BOARD MEMBER THOMPSON.

>> YES.

>> BOARD MEMBER KIM.

>> YES.

>> BOARD MEMBER GAFFNEY.

>> YES.

>> BOARD MEMBER SANDERSON.

>> YES.

>> BOARD MEMBER OLSON.

>> YES.

>> BOARD MEMBER DUFFY.

>> YES.

>> BOARD MEMBER TREGUB.

>> YES.

>> VICE CHAIR O'KEEFE.

>> YES.

>> AND CHAIRMAN --

>> HE'LL ABSTAIN. YOU CAN FIGURE THAT OUT. WE DON'T NEED HIS VOTE TO PASS IT.

>> THAT HAS PASSED. THE CONSENT CALENDAR PASSES, THANK YOU VERY MUCH. NOW, ACTION CALENDAR. WHAT WE ALL CAME FOR. SO TRADITIONALLY AND TODAY WE'RE GOING TO FIRST BEFORE WE HEAR THE PREVIOUSLY SCHEDULED ITEM WE'LL HEAR THE ITEM THAT CAME OFF CONSENT, 2125 COLLEGE AVENUE SO IF YOU'RE HERE FOR THAT GET READY. STAFF AUDIENCE, WE'LL DO THAT FIRST. FIRST WHAT WE'LL DO IS BEGIN WITH THE STAFF REPORT AND THEN HAVE QUESTIONS FOR STAFF FROM THE BOARD THEN WE'LL HAVE A PRESENTATION FROM THE APPLICANT FOLLOWED BY QUESTIONS FOR THE APPLICANT AND THEN PUBLIC COMMENT

AND ANYONE WHO WISH TO SPEAK ON 2521 COLLEGE AVENUE WILL HAVE A CHANCE TO DO SO AT THAT TIME AND THE APPLICANT WILL HAVE ONE MORE CHANCE TO SPEAK AND THEN WE'LL CLOSE THE PUBLIC HEARING AND I HAVE BOARD COMMENTS AND HOPEFULLY VOTE THOUGH YOU NEVER KNOW. SO WHAT WAS THE FIRST THING? STAFF REPORT. LET'S HAVE IT.

>> GOOD EVENING, MEMBERS. THIS IS CASE PERMIT 2020-2147 TO MODIFY THE PERMIT ALLOWING FOR A MAXIMUM OF EIGHT OCCUPANTS IN A 268,000 SQUARE FEET OF LIVING TO ALLOW 13 OCCUPANTS AND 13 OCCUPATION ROOMS AND TO LEGALIZE THE ACCESSORY BUILDING WITH AN AVERAGE HEIGHT OF 10 FEET AND INCREASE THE NUMBER OF GROUP LIVING ACCOMMODATION OCCUPANT. IT'S STAFF'S RECOMMENDATION IT'S EXEMPT OF THE CEQA GUIDELINES AND THE DETERMINATION MADE BY ZAB. IT'S A LAND USE OF MEDIUM RESIDENTIAL. THIS LOCATED ON THE EAST SIDE OF COLLEGE AVENUE BETWEEN DWIGHT WAY AND PARKER STREET SOUTH OF THE U.C. BERKELEY CAMPUS AMONG DORM TRIES AND SINGLE AND MULTI-FAMILY DWELLINGS. IT LEADS TO A GARAGE AT THE BASEMENT LEVEL CONTAINING FOUR OFF-STREET PARKING SPACES AND SHARED WITH THE ADJACENT PROPERTY. THE ADJACENT PROPERTY TO THE NORTH IS A NON-UNIT APARTMENT BUILDING AND STAFF RECEIVED NOTICE FROM THE PUBLIC THAT TWO DETACHED ADUS HAVE REVIEW AND CONSTRUCTION AND THEY'RE SEPARATE PARCELS AND THE ADUS ARE NOT PART OF THIS PROPOSAL. OCTOBER 13, 1988, THE ZAB UNANIMOUSLY APPROVED THE PREVIOUS USE PERMIT TO LEGALIZE THE BOARDING HOUSE UP TO SEVEN OCCUPANTS AND ONE MANAGER FOR A TOTAL OF EIGHT OCCUPANTS. WITH

TWO PARKING SPACES AND USABLE PARKING SPACE. SUBSEQUENTLY ON JULY 7, 1997, THE OTHER REGISTERED A 13-BED REMEMBER ROOMING HOUSE WITH THE RENT STABILIZATION BOARD AND NO CHANGE HAVE BEEN MADE TO THE NUMBER OF BEDROOMS REGISTERED SINCE THAT TIME. BOARD RECORDS CURRENTLY INDICATE ALL 13 ROOMS ARE REGISTERED AND AVAILABLE FOR RENT AND THERE ARE TWO OCCUPANTS IN EACH FOR A TOTAL OCCUPANCY OF 17. SO AS I SAID THE PROJECT WOULD INCREASE THE OCCUPANCY OF THIS GROUP LIVING ACCOMMODATION FROM 8 TO 13 WHICH IS THE MAXIMUM NUMBER ALLOWED UNDER THE ORDINANCE AND IT ADDRESSES THE MAXIMUM OCCUPANCY OF 13. IN ORDER TO REQUIRE THE MINIMUM AMOUNT OF OPEN SPACE THE EXISTING WINDOW WOULD BE REMOVED AND REPLACED WITH A DOOR AND NEW INTERIOR WALL WOULD CREATE A HALLWAY TO ALLOW RESIDENTS TO ACCESS THE ROOF DECK PORTION AND THE EXISTING DRIVEWAY WOULD BE REPLACED WITH A USABLE OPEN SPACE AREA CONTAINING PLANTERS. THE FINDINGS IN ORDER TO APPROVE THE PROJECT FIRST THE ZAB MUST FIND THE PROJECT IS NON-DETRIMENTAL AND THE BOARD WOULD BE CONSISTENT WITH THE PURPOSES OF THE R3 DISTRICT PROVIDING AN INCREMENTAL INCREASE IN HOUSING APPROXIMATE TO THE BERKELEY AREA AND INCREASING THE USABLE AMOUNT OF SPACE AND WOULD RESTORE THE ORIGINAL ROOF DECK CREATING NEW SIGHT LINES TOWARDS ADJACENT DWELLINGS AND STAFF BELIEVES IT WOULD NOT BE DETRIMENTAL BELOW THE DISTRICT HEIGHT LIMIT AND VIEWS TO THE NORTH AND SOUTH OF EXISTING BUILDING AND VIEWS TO THE EAST WOULD BE TOWARDS THE REAR YARD AT 2626 ELNA

WITH A SEPARATION OF APPROXIMATELY 120 FEET WITH SEVERAL TREES AND VEGETATION TO SCREEN. THE PROJECT MEETS THE REQUIREMENTS FOR GOA HOUSING AND COMPLIES WITH TENANT PROTECTION ORDINANCE. SECOND, THE ZAB MUST FIND THE ACCESSORY BUILDING IS PERMISSIBLE AND MEETS THE HEIGHT AND STANDARDS AND WOULD BE USED AS A DWELLING UNITS. GIVEN THERE'S NO FACADES TO THE NORTH AND EAST IT'S NOT ANTICIPATED THE BUILDING WOULD BE DETRIMENTAL AND CREATES SIGNIFICANT IMPACTS TO PRIVACY AND BECAUSE OF THE PROJECT'S CONSISTENCY WITH THE ZONING ORDINANCE AND GENERAL PLAN AND MINIMUM IMPACT ON SURROUNDING PROPERTIES STAFF IS RECOMMENDING THEY APPROVE THE PROJECT WITH FINDINGS ON ATTACHMENT 1. THAT'S ALL I HAVE.

>> THANKS FOR THE STAFF REPORT. RIGHT NOW I'D LIKE TO ASK THE BOARD IF THERE'S QUESTIONS FOR STAFF? I'M NOT SEEING ANY QUESTION FOR STAFF. I'LL MOVE ON HOWEVER, I SHALL BE HERE, MICHAEL DO YOU KNOW HOW TO PUSH THE RAISED HAND BUTTON.

>> EVERY BUTTON BY THAT ONE.

>> I SEE YOUR ACTUAL HAND.

>> TO CLARIFY THERE'S 13 OCCUPANTS THERE NOW?

>> THERE'S 17 NOW.

>> AND THIS WOULD ALLOW 13.

>> AND THE PERMIT WAS FOR 8.

>> SO IF THIS WAS APPROVED WOULD THE 17 BEING REDUCED TO 13? OR WOULD 17 STILL BE THERE EVEN THOUGH IT'S ONLY ALLOWING 13?

>> WE WANT TO MAKE SURE WE'RE COMPLYING WITH ALL THE REGULATIONS AND TENANT PROTECTIONS UNDER THE RENT STABLE PROTECTION AND TENANT PROTECTION ORDINANCE S SO CONDITION OF APPROVAL 32, 33 AND 34 ADDRESS THAT FACT. SO THE PLANNING DIVISION COULD BUT AS NATURAL [INDISCERNIBLE] OCCURS THE ROOMS THAT ARE DOUBLE OCCUPANCY WOULD GO DOWN TO SINGLE OCCUPANCY.

>> THANK YOU. IT DOES SAY THAT. I'M LOOKING AT IT NOW. THANK YOU.

>> YOU'RE WELCOME.

>> CARRIE. QUESTION FOR STAFF?

>> DURING YOUR PRESENTATION, YOU SOMETIMES USE THE WORD YOU MAY NOT BE AWARE OF THIS, "OCCUPANTS" AND USE THE WORD "BEDROOMS" AND YOU'VE MADE ME THOROUGHLY CONFUSED AND AFTER IF 32 YEARS OF THIS THERE'S NOT EASY AND I WANT TO MAKE IT CRYSTAL CLEAR TO US AND EVERYONE LISTENING, FROM WHAT I READ WAS APPROVED WAS EIGHT OCCUPANTS. THEY WENT TO 17 WITH APPARENTLY NO ONE PAYING ATTENTION. IS THAT CORRECT?

>> I CAN'T ANSWER THAT QUESTION BECAUSE I DON'T HAVE INFORMATION TO ANSWER THAT QUESTION.

>> BECAUSE HONESTLY, A LOT OF WHAT WE DO ONCE WE APPROVE SOMETHING IS WE TRUST. WE TRUST THE CITY. WE TRUST THE PROPERTY OWNER, WE TRUST THAT WHAT WE'VE APPROVED IS WHAT WILL HAPPEN SO NOW WE'RE BEING ASKED TO APPROVE 13 UNITS IN A BUILDING THAT ALREADY HAS 17 PEOPLE, FOUR OF WHICH WILL HAVE TO FIND HOUSING SOMEWHERE PLUS THERE'S THE CONSTRUCTION WORK THAT WILL, I GUESS, GO ON DURING THE SCHOOL YEAR -- A CRAZY SCHOOL YEAR. SO DO YOU UNDERSTAND WHERE I'M COMING FROM? I NEED TO HAVE YOUR ASSURANCE THAT WHAT WE'RE TALKING ABOUT ISN'T JUST 13 BEDROOMS BUT 13 OCCUPANTS. SINGLE PEOPLE. IS THAT CORRECT?

>> THERE ARE 13 GLA ROOMS CURRENTLY SOME HAVE DOUBLE OCCUPANCY NOT ALL AND HOW WE GET TO 17 OCCUPANTS. THERE'S MORE OCCUPANTS THAN BEDROOMS BUT THE MAXIMUM AMOUNT IS 13 SO THAT MEANS THERE'S A MAXIMUM OF ONE OCCUPANT PER ROOM SO ONE TO ONE IS 13 ROOMS AND 13 PEOPLE.

>> SO HOW DO WE KNOW -- HOW WILL THERE BE A FOLLOW-UP TO ENSURE THAT WHAT WE APPROVE TONIGHT WILL BE WHAT THERE IS?

>> SO IT WOULD RELY ON CONDITIONS OF APPROVAL SO THE OWNER SUBMITS INFORMATION TO PLANNING STAFF AND THERE'S NATURAL ATTRITION. THIS WOULD NOT EVICT ANY TENANT BUT NATURAL ATTRITION WOULD OCCUR BUT THE DOUBLE OCCUPANCY ROOMS WOULD BE RENTED AS SINGLE OCCUPANCY ROOMS IN THE FUTURE.

>> SO NOW THAT YOU'VE SAID THAT TO WHICHEVER ONE OF US MAKES THE MOTION TO APPROVE THIS ASSUMING THIS IS WHERE IT'S HEADED, PLEASE INCLUDE THAT LANGUAGE SO THAT STAFF WILL BE OBLIGATED TO FOLLOW-UP TO MAKE SURE THAT AS ATTRITION HAPPENS, SO THERE WON'T BE 13 ONCE THIS PROJECT IS COMPLETE, BUT THERE SHOULD BE 13 AND MAYBE WE CAN GIVE A TIME LINE? ONE YEAR, TWO YEARS. BECAUSE I THINK IT'S IMPOSSIBLE TO REGULATE. I THINK WHAT WE'RE BEING ASKED TO DO IS AS DIFFICULT AS I'VE EVER SEEN. I JUST WANTED TO ASK. THANK YOU.

>> ALL RIGHT.

>> NEXT UP WE HAVE A NUMBER OF BOARD MEMBERS AND NEXT IS IGOR.

>> THANK YOU. I WILL NOT GET INTO THE DETAILS NOW BUT I WILL GO ON THE RECORD LATER HOW WE ACTUALLY CAN'T REQUIRE ATTRITION AT A CERTAIN TIME. THAT WOULD BE IN CONFLICT WITH CONDITION 34. MY QUESTION FOR STAFF GIVEN THE COMMENT THAT CAME IN IN A SUPPLEMENTAL REGARDING NOISE AND HELP REFRESH MY MEMORY. IN THE PAST I BELIEVE WE HAVE SOMETIMES REQUIRED A MANAGEMENT PLAN TO TAKE PLACE. CAN YOU ANSWER THE QUESTION OF IF WE CHOSE TO DO SO HERE, COULD WE REQUIRE A MANAGEMENT AND OPERATING PLAN TO BE REACH OUT TO STAFF AS A CONDITION OF APPROVAL.

>> AND THE PROJECT WE NEED TO COMPLY WITH THE NOISE ORDINANCE. I'M NOT AWARE OF THAT SPECIFIC CONDITION OF APPROVAL THAT YOU MENTIONED BUT THE OWNER SHOULD NOTIFY US OR THE RENT BOARD WHEN

THERE'S A CHANGE IN TENANT SO WE KNOW SOMEONE ELSE DOESN'T COME IN WITH TWO PEOPLE INSTEAD OF ONE. THERE'S NO WAY THE PLANNING STAFF CAN TRACK THAT. THE OWNER SHOULD NOT JUST NOT NOTIFY THE TENANTS WHERE THEY LEAVE ONLY ONE CAN COME BACK IN BUT I THINK THE OWNER NEEDS TO NOTIFY PLANNING STAFF AND/OR THE REPRESENT CONTROL BOARD WHEN ONE OF THOSE UNITS BECOMES VACANT. AND THE REASON WHEN I WAS THERE IN 2003 YOU HAD AN ILLEGAL UNIT AND REMAINED OCCUPIED. NO ONE TO MY KNOWLEDGE EVER WENT BACK AND CHECKED TO SEE IF WHEN THE UNITS BECAME VACANT THAT THEY WERE THEN BROUGHT INTO COMPLIANCE WITH ZONING. SO WE DON'T WANT TO PUT ANYONE ON THE STREET BUT WE NEED SOME WAY TO KNOW THAT WHEN THERE IS A CHANGE OF TENANCY, THE NEW TENANT IS ONE PERSON AND NOT TWO IN CONDITION OF APPROVAL I THINK 23 WHEN THE OWNER WILL NOTIFY THE TENANTS OF. WE CAN'T HAVE A CONDITION OF APPROVAL FOR THE RENT CONTROL BOARD BUT WE NEED SOME WAY TO DO THIS THAT EITHER THE RENT CONTROL BOARD OR THE OWNER NOTIFIES THE PLANNING DEPARTMENT. SO WE CAN KEEP TRACK OF THIS. SO THAT'S ONE SUGGESTION. ALSO IN RESPONSE TO IGOR'S COMMENTS WHEN WE USED TO DOUGH -- TO DO THE ORDINANCE WE HAD THE MINI ORDINANCE AND THEY WERE REQUIRED TO REGISTER SO THEY'RE ON RECORD. I'M NOT SURE WE NEED TO -- IT'S VERY HARD TO ENFORCE ANY WAY. NOW THE NEIGHBORS KNOW IF THEY HAVE A PROBLEM THEY FOLLOW THE PROCEDURES OF THE MINI DORM ORDINANCE. I DON'T FEEL SO STRONGLY OF DOING WHAT WE

USED TO DO WHICH IS TO MAKE ALL KINDS OF CONVOLUTED PLANS ABOUT NOISE AND ALL OF THAT.

>> I DO WANT TO REMIND YOU AND EVERYONE ELSE THESE ARE JUST QUESTIONS FOR STAFF. I DID ALLOW IT SO IT FELT RELEVANT BUT I WANT TO BRING US BACK TO WHAT WE'RE DOING.

>> I'M SORRY.

>> I'M SORRY.

>> IT'S OKAY. DO YOU HAVE A QUESTION FOR STAFF, DEBRA, WHILE YOU'RE RECOGNIZED?

>> NO.

>> OKAY. GREAT. YOU'RE NEXT.

>> THANK YOU. I'LL HOLD MY COMMENTS BACK. MY QUESTION IS OBVIOUSLY IT'S DIFFICULT FOR US AND THIS COULD OR SHOULD BE ABOUT BEDROOMS BECAUSE IT'S SOMEBODY IN A BED WE CANNOT REGULATE WHETHER THEY INVITE SOMEONE TO COME LIVE IN THEIR BED WITH THEM AND CANNOT MANDATE THAT AND HERE'S THE QUESTION, DO WE HAVE ANYWHERE IN THE PAST OR IN THE CODE NOW THAT TRIES TO ADDRESS OR TRACK THAT? IT SEEMS THE MOST REASONABLE EFFORT IS JUST ABOUT A BED COUNT. WHAT I DID IS IT'S A PLAN WITH ONE BEDROOM IN IT. IS THAT RIGHT?

>> ANOTHER GI PRODUCTS YOU MIGHT SEE ONE BEDROOM WITH TWO SETS OF BUNCH BETS OR SOMETHING LIKE THAT AND THAT'S WHERE THE DISTINCTION BETWEEN GLA ROOM AND OCCUPANT ARE MORE CLEAR IN 13 GLA ROOMS AND 26 OCCUPANTS, SOMETHING LIKE THAT. THERE'S ONE ROOM AND ONE BED AND 13 GLA OCCUPANTS OR PEOPLE.

>> THANK YOU.

>> ANY OTHER QUESTIONS FOR STAFF BEFORE WE MOVE TO APPLICANT STATEMENT? SEEING NONE, LET'S HEAR FROM THE APPLICANT. I'LL STOP SHARING THE SCREEN. IS AUSTIN THE APPLICANT?

>> YEAH. AUSTIN IS THE ONLY APPLICANT TO PRESENT?

>> YES.

>> AUSTIN, YOU HAVE FIVE MINUTES. YOU DON'T HAVE TO USE THE WHOLE FIVE MINUTES BUT THAT'S THE MAXIMUM AND WE'LL HAVE A TIMER FOR YOU. WE'LL WE DON'T SEE A TIMER BUT JUST THE PLANS.

>> I'LL PUT THE PLANS ON THE BACKGROUND.

>> GO FOR IT. I'LL SET MY WATCH.

>> HI, EVERYBODY. MY NAME IS AUSTIN SPRINGER AND AN ARCHITECT AND THE PROJECT LEAD FOR THE USE PERMIT APPLICATION FOR 2521 COLLEGE AVE. THANK YOU FOR YOUR TIME AND CONSIDERATION OF THE APPLICATION AND I'LL TRY TO KEEP IT BRIEF. WE'RE PROPOSING TO UPDATE THE EXISTING USE PERMIT FOR EIGHT RESIDENTS TO 13 AND

SINCE THIS WAS THE DISCUSSION WE'RE BRINGING THE OCCUPANTS AND BEDROOMS AND HUMANS ALL INTO ALIGNMENT. IN THE PAST THERE'S BEEN SOME DISCREPANCY BETWEEN THE AMOUNT OF HUMANS AND RENT BOARD BEDROOMS. OUR CLIENT IS TRYING TO DO EVERYTHING ABOVE BOARD. WE'RE BRINGING IT FROM EIGHT RESIDENTS HOWEVER, YOU INTERPRETED IN THE PAST TO 13 HUMANS, 13 BEDROOMS, 13 GLA OCCUPANTS AND THERE'S NO EVICTION AND WITH COVID OCCUPANCY WENT DOWN AND NOBODY WILL BE KICKING KICKED OUT OF THEIR ROOM IN A TOUGH YEAR. ONE FINAL NOTE, THERE'S ALMOST NO CONSTRUCTION. WE ARE CHANGING THE STATUS OF ROOMS IN THE EXISTING HOME TO WHAT IT USED TO BE LIKE LIVING ROOMS OR OTHER BEDROOMS AND JUST MAKING THEM LEGAL. SO IT'S NOT LIKE WE'RE ACTUALLY DOING A BUNCH OF CONSTRUCTION INSIDE THE BUILDING. THERE'S ONLY ONE WALL THAT WE'RE PROPOSING CONSTRUCTING IN THE BUILDING AND THAT'S JUST TO PROVIDE ACCESS TO ALL THE TENANTS TO THE NEW ROOF DECK WHICH ALSO WILL BE RELATIVELY MINOR CONSTRUCTION. IN ADDITION, THE WHOLE PROJECT IS GOING TO BE CONSISTENT WITH THE APPLICABLE DENSITY GUIDELINES AND IN ADDITION TO THE NEW BEDROOMS WE'RE BEAUTIFYING THE LOT AND UPDATING THE STREETScape AND PLANTING AND MAKING A USABLE ROOFTOP DECK THAT PREVIOUSLY EXISTED IN THE BACKYARD. FINALLY WE'RE SEEKING AN AMP FOR THE EXISTING STRUCTURE IN THE REAR OF THE PROPERTY AND IN FULL COMPLIANCE WITH THE GLS STANDARDS OF THE ZONE AND MEET ALL REQUIREMENTS OF THE ZONING CODE. I'D LIKE TO ADDRESS THE COMMENTS SUBMITTED TO THE BOARD EARLIER THIS WEEK

BY THE NEIGHBOR TO THE REAR OF THE PROPERTY, MR. DESQUALI AND HIS CONCERNS WERE THREE FOLD. FIRST HE SAID HE'S AGAINST THE DENSIFICATION OF THE PROPERTY AND THE STAFF DETAILED HOW THE ADDITIONAL OF BEDS IS CONSISTENT WITH THE GOALS OF CREATING HOUSING IN HIGH AND MEDIUM DENSITY ZONES WITH SORORITY AND DORMITORY AND THE NEIGHBORS BEHIND AND THE OTHER ADJACENT OBJECTED TO THE WINDOWS PLACED AT THE REAR OF THE APPROVED ADU. IT'S APPROVED, UNDER CONSTRUCTION AND MOST THE WAY THROUGH CONSTRUCTION NOW FACING THEIR PROPERTIES. AS ASHLEY MENTIONED AGAIN, THAT PROJECT IS NOT ON THIS PARCEL AND NOT PART OF THIS PERMIT APPLICATION. THAT BEING SAID, IT IS THE SAME OWNER AND WE'D LIKE TO GO ON RECORD AND SAY THAT OUR OWNER HAS AGREED TO TO WORK WITH THE ADJOINING NEIGHBORS TO ADD SOME TRANSLUCENT SCREENING TO THE WINDOWS WHERE APPROPRIATE TO ASSURE THERE'S NO PRIVACY CONCERNS BETWEEN THE TWO. FINALLY, MR. PASQUALI EXPRESSED NOISE CONCERNS AND WE HAVE A SOLUTION. THOUGH THE GLA IS FOR MORE THAN 13 BEDS AND OUR OWNER WILL PROVIDE A MANAGER AND A RESPONSIBLE RESIDENTS OWNER TO CALL AND WE'RE PREPARED TO ACCEPT THE ON-SITE RESPONSIBLE RESIDENT AND PROPERTY MANAGER ON CALL AS A CONDITION OF APPROVAL IN THE INTEREST OF GETTING APPROVAL AND EASING THE NEIGHBORS CONCERN. ANY QUESTIONS FOR THE APPLICANT BEFORE WE MOVE TO PUBLIC COMMENT? IGOR.

>> THANK YOU. FIRST, CAN YOU RESTATE THE CONDITIONS THAT YOU ARE VOLUNTARILY WILLING TO ACCEPT TONIGHT? I'M JUST TRYING TO CAPTURE THEM.

>> SURE, IN THIS ZONE THE GLA ORDINANCE OR WHATEVER SAYS IF YOU HAVE 15 OR MORE OCCUPANTS YOU'RE REQUIRED TO PROVIDE A PROPERTY MANAGER WHO'S ON CALL. WHERE THE STANDARD REQUIREMENT IS JUST TO HAVE A RESPONSIBLE RESIDENT IN HOUSE DISTRIBUTE THE PHONE NUMBER SO NEIGHBORS CAN CALL IF THERE'S AN ISSUE. WHAT WE'RE SAYING IS WE'RE WILLING TO GO ABOVE AND BEYOND AND WILL PROVIDE BOTH OF THOSE THINGS, BOTH A RESPONSIBLE RESIDENT AND A PROPERTY MANAGER THAT WAY WE CAN DOUBLE THE BASES. THERE'S AN ADULT AND A YOUNGER ADULT WHO WOULD BE ABLE TO ANSWER CALLS.

>> THANK YOU. I WANTED TO CLARIFY BECAUSE I THINK I GOT MYSELF MIXED UP THAT PARAGRAPH OF MR. DEPASQUALI. SO THE FIVE WINDOWS AT ISSUE BEING PROPOSED TO BE FROSTED ON ALL ON THE ADU THAT'S NOT THE SUBJECT OF OUR APPLICATION BEFORE TONIGHT, CORRECT?

>> THAT IS CORRECT BUT WE'RE WILLING TO WORK WITH THEM AND TRYING TO BE GOOD NEIGHBORS.

>> THANK YOU.

>> GREAT. CARRIE.

>> A COUPLE QUESTIONS FOR YOU. ONE, ONLINE SOMEBODY POSTED PICTURES OF THESE UNITS WHICH IS ALWAYS HELPFUL FOR US TO

ACTUALLY SEE WHAT THEY LOOK LIKE. THEY ARE BUNK BEDS CURRENTLY AND I'M WONDERING IF THERE ARE PLANS TO TAKE THOSE BUNK BEDS OUT TO MAKE SURE IT'S A SINGLE PERSON? I GET IT PEOPLE WANT TO HAVE FRIENDS STAY. THEY CAN HAVE A SOFA BED.

>> I CAN'T SPEAK TO THE OWNER'S FURNISHING PLANS AND DON'T WANT TO COMMIT THEM TO BUYING NEW BEDS FOR THE ROOMS BUT THE PLAN IS TO BRING EVERYTHING IN ACCORDANCE. TO MY MIND THE EASY WAY TO CONFIRM THAT -- I DON'T KNOW IF YOU HAVE SOMEBODY TO CHECK THE RENT BOARD BUT THE PLAN IS TO HAVE THE RENT BOARD GET THE SAME INFORMATION YOU'RE GETTING. IT WILL BE 13 OCCUPANTS. AS COUNCIL MEMBER DUFFY WAS SAYING, THERE'S NOTHING WE CAN DO IF THEY WANT TO INVITE A FRIEND OVER TO CRASH FOR THE EVENING BUT THERE'LL BE RENTAL DREAMS WITH 13 INDIVIDUALS AND 13 GLA OCCUPANTS.

>> THERE'S ONE UNIT UPSTAIRS THAT SAYS IT'S 77 SQUARE FEET. THAT AN EXISTING UNIT NOW.

>> IT'S ESSENTIALLY AT THE END OF THE HALLWAY THAT LEADS TO WHERE THE DECK IS. SO WE'RE MAKING THAT ROOM SMALLER THAT WAY WE CAN PROVIDE INTERIOR ACCESS TO ALL THE TENANTS TO THAT DECK.

>> IT'S ACTUALLY NOT THAT UNIT. IT'S ON THE SAME SIDE AS THE DOOR OUT TO THE DECK. ABOUT HALFWAY ALONG.

>> IT MEETS ALL THE DIMENSION.

>> IN MY 17 YEARS IN DESIGN REVIEW, THAT WOULD HAVE NEVER PASSED, NEVER EVER. THAT'S REALLY VERY TIGHT. I DON'T KNOW IF IT'S ALREADY EXISTING I GUESS PEOPLE ARE OKAY BUT --

>> IT'S EXISTING AND OCCUPIED. I COULDN'T SAY AT THIS SECOND BUT WHEN I TOURED THE SITE THERE WAS SOMEBODY THERE. THAT ROOM DOES HAVE A FULL WIDTH CLOSET WHICH IS NICE.

>> OKAY.

>> OKAY. THANK YOU.

>> ANY OTHER QUESTIONS FOR THE APPLICANT? SEEING NONE, NOW WE'RE GOING TO TURN TO NO PUBLIC. WE HAVE ONE HAND UP ALREADY. IF YOU WOULD LIKE TO SPEAK ON THIS RAISE YOUR HAND NOW OR SUPPRESS STAR 9. I'LL RECOGNIZED SUSAN. SUSAN, I'M GOING TO ENABLE TALKING. SUSAN, YOU'LL HAVE TWO MINUTES. IT WILL START ONCE WE CAN HEAR YOUR VOICE.

>> HELLO.

>> YOU CAN HEAR ME?

>> WE CAN.

>> THANK YOU. I'M THE NEIGHBOR TO THE EAST OF THIS SUBJECT PROPERTY. THE ADUS THAT ARE BEING CONSTRUCTED ARE 2519 THE AJACE PROPERTY BEHIND OUR HOUSE I WANT TO MAKE SURE YOU UNDERSTAND IT'S TWO ADUS WITH NINE PEOPLE AND THREE FEET FROM OUR ORDER

LINE. IT'S A HUGE IMPACT IN THE NEIGHBORHOOD AND WHAT AUSTIN SAID WORKING WITH US BUT FACING TOWARDS OUR BEDROOMS, I APPRECIATE THAT. I HADN'T HEARD THAT YET FROM TED BARTLETT THE OWNER SO I'LL HOLD HIM TO THAT STATEMENT. BUT GOING FORWARD ON THE 2521 COLLEGE, BASICALLY THEY'VE BEEN OUT OF COMPLIANCE SINCE 1997 AND THIS IS TRYING TO BRING SOMETHING INTO COMPLIANCE. I CAN SUPPORT THAT. THE CHANGING OF THE GARAGE IN THE BACK TO A DWELLING UNIT AND RECOGNIZING THAT AND THAT'S FINE. THE GARAGE HAS BEEN THERE AS LONG AS I CAN REMEMBER. WHAT I OPPOSE IS THE CONSTRUCTION OF THE DECK. IT'S 14 FEET HIGH AND TALLER THAN THE GARAGE THAT WILL BE TURNED INTO A LIVING UNIT AND THAT SOUND WILL CARRY DIRECTLY OVER TO OUR BEDROOMS AND ALSO FOR MR. DE PASQUALI HIS CHILDREN 6 AND 4 THE BEDROOM IS AT THE BACK OF THE HOUSE AND CONSTANTLY HAVING TO GO OVER AND TELL THE FOLKS TO BE QUIET IT IS AN IMPACT ON THE NEIGHBORHOOD AND THE NOISE IS THE MAIN ISSUE. THE DECK WILL JUST INVITE A PARTY AT 14 FEET WHERE THE NOISE CAN CARRY DIRECTLY OVER TO THE HOMES ON EDNA STREET. I WANT TO MAKE THAT POINT THERE. I THINK IT'S GOOD TO HAVE PHONE NUMBERS DISTRIBUTED TO ALL NEIGHBORS WITH A RESPONSIBLE RESIDENT AND PROPERTY MANAGER AND HOPEFULLY THEY CAN TAKE CARE OF NOISE COMPLAINTS WHEN THEY HAPPEN. IN FEBRUARY, THIS IS BEFORE THE PANDEMIC BEFORE EVERYBODY HAD SHOTS YET, THERE WAS A LOUD PARTY ON A TUESDAY NIGHT THAT WENT ON TO 1:00 A.M. IN THE MORNING AND THAT'S A CONSTANT THING. IF YOU JUST THINK ABOUT 13 PEOPLE

LIVING THERE AND I DON'T KNOW HOW MANY PEOPLE LIVING IN THE NEIGHBORHOOD AND THE NEXT DOOR AT 2019, ALL THOSE PEOPLE GET TOGETHER IT'S A VERY LARGE GROUP OF PEOPLE HAVING A PARTY AND THAT HAPPENS ON A REGULAR BASIS AT THESE PROPERTIES MAKING IT UNTENABLE FOR THE NEIGHBORS. THAT IS WHAT I WOULD LIKE TO BRING TO YOUR ATTENTION IN MAKING THIS CONSIDERATION. THANK YOU.

>> THANK YOU VERY MUCH. OKAY. WOULD ANYONE ELSE FROM THE PUBLIC LIKE TO SPEAK ON THIS ITEM? AFTER THIS I'LL CLOSE THE PUBLIC HEARING. APPLICANT, WOULD YOU LIKE TO SAY ANYTHING ELSE? EITHER RESPONSE TO WHAT WAS JUST SAID OR ADD ANYTHING? YOU HAVE TWO MINUTES TO GET YOUR LAST WORD IN.

>> YEAH, THANK YOU. I APPRECIATE THAT. WE APPRECIATE THE COMMENTS AND THE FEEDBACK. IT'S ALWAYS GOOD TO KNOW WHAT THE NEIGHBORS REALLY THINK. IT'S A GOOD OPPORTUNITY FOR THAT. IMPORTANT TO NOTE, THIS DECK WAS EXISTING WHEN OUR CLIENT BROUGHT THE PROPERTY. WE'RE RESTORING IT BACK TO WHAT IT SHOULD BE TO BUILDING STANDARDS. PERMITS WEREN'T THERE WHEN IT GOT REMOVED. AS THE STAFF REPORT NOTES ABOUT 120 FEET AWAY FROM THE ADJACENT BUILDING AND THERE'S VEGETATION TO WHICH WE'RE PLANNING ON ADDING. WE'RE ADDING GREENERY IN THE BACKYARD AND MAKING IT A NICE AREA THAT SHOULD ABSORB MORE OF THE NOISE IF THERE IS ANY BECAUSE THERE'S A REQUIREMENT 40% OF OUR NEW LAND ESCAPED AREA IS VEGETATED. THERE'S BE MORE VEGETATION ON SITE TO SOAK UP THE

NOISE AND AS ALWAYS, IF THERE ARE NOISE PROBLEMS, AS WE POINTED OUT, WE'VE MADE THE PHONE NUMBERS AVAILABLE BOTH THE RESPONSIBLE RESIDENT AND THE PROPERTY MANAGER TO TRY TO COME TO A NEIGHBOR SOLUTION. I THINK THAT'S IT.

>> THANK YOU SO MUCH. WITH THAT UNLESS THERE'S FURTHER QUESTIONS FOR THE APPLICANT, ARE THERE ANY FOR THE BOARD. IGOR.

>> I WAS READY TO MAKE A MOTION.

>> JUMPED THE GUN. NO FURTHER QUESTIONS FOR THE APPLICANT. THEREFORE I'LL CLOSE THE PUBLIC HEARING AND OPEN UP THE FOR A MOTION.

>> IN THE INTEREST OF TIME I WON'T OPINE ON THIS AND WOULD LIKE TO THANK THE NEIGHBORS FOR COMING AND THE APPLICANT FOR WORKING TO RESOLVE OUTSTANDING ISSUES IN GOOD FAITH. I'D LIKE TO MOVE THAT WE APPROVE THIS PERMIT WITH THE ADDITION OF TWO CONDITIONS REQUIRING AN ONSITE RESPONSIBLE RESIDENT AND A SECOND CONDITION OR COULD BE PART OF THE SAME ONE AN ON-CALL PROPERTY MANAGER WITH THE PHONE NUMBERS READILY AVAILABLE TO ADJACENT NEIGHBORS. STAFF, IF THERE'S ANYTHING ELSE YOU'D LIKE TO SEE IN THOSE TWO CONDITIONS, PLEASE LET ME KNOW. HAPPY TO ADD. AND THEN QUICKLY TO COMMISSIONER SANDERSON'S SUGGESTION, WHICH I AGREE ABSOLUTE WITH SPIRIT ABOUT -- I SUPPORT ANY OPPORTUNITIES TO FURTHER DIALOGUE BETWEEN THE RENT BOARD AND PLANNING DEPARTMENT. I'M SURPRISING MYSELF A LITTLE BIT. IT MAY BE THE FIRST TIME ON ZAB

WHERE I'M ARGUING AGAINST A NEW CONDITION INVOLVING THE RENT BOARD. I THINK BECAUSE THIS PROPERTY ALREADY IS SUBJECT TO OR THE UNITS ON THE PROPERTY IS SUBJECT THEY HAVE TO REGISTER THEIR UNITS WITH THE RENT BOARD AND HAVE TO PROVIDE INFORMATION TO THE RENT BOARD ANYTIME THERE'S A CHANGE OR REDUCTION IN OCCUPANCY. I THINK I WOULD INVITE THE PLANNING DEPARTMENT TO REACH OUT TO THE RENT BOARD AND ASK THEM TO NOTIFY THE PLANNING DEPARTMENT WHEN REDUCTIONS IN OCCUPANCY TAKE PLACE BUT I THINK IT WOULD BE PERHAPS DUPLICATIVE AND SLIGHTLY UNFAIR TO THE APPLICANTS TO REQUIRE THEY ALSO NOTIFY THE PLANNING DEPARTMENT AND I PRESENT THE APPRECIATE THE SPIRIT OF THE SUGGESTION. WE HAVE A MOTION.

>> I'LL SAY AS WE WERE TAUGHT ABOUT THE COMMENT MADE AT THE BEGINNING, WE HAVE A RENT BOARD THAT'S WHAT THEY DO AND THEY HAVE A PLANNING DEPARTMENT. IT DOESN'T TRACK HOW MANY PEOPLE LIVE THERE AND SHOULD BE STARTING IN IT. I THINK IT'S BETTER OFF TO LET THE RENT BOARD DO THEIR JOB AND REGULATE THE NUMBER OF ROOMS BUT CAN'T GET INVOLVES IN WHETHER THEY'RE OCCUPIED OR UNOCCUPIED AND HOW MANY PEOPLE ARE IN THEM. I AGREE WITH YOU, IGOR AND SECOND THE MOTION.

>> THAT'S GREAT. WE HAVE A MOTION AND A SECOND. FURTHER DISCUSSION ON THE MOTION OR ANYTHING ELSE? SEEING NONE, SHALL WE VOTE? STAFF, DO WE HAVE -- IGOR SUGGESTED OR STAFF IF FURTHER

CLARIFICATION WAS NECESSARY. I WANT TO CONFIRM YOU'RE COMFORTABLE WITH THE MOTION.

>> A MOTION TO APPROVE AS AMENDED?

>> TO APPROVE 2521 COLLEGE AVENUE. THIS IS FOR THE ON SITE RESIDENT AND PERSON AND NUMBERS TO BE PROVIDED TO NEIGHBORING RESIDENCES. BOARD MEMBER SANDERSON.

>> YES.

>> BOARD MEMBER KIM.

>> YES.

>> BOARD MEMBER GAFFNEY. YES.

>> BOARD MEMBER THOMPSON.

>> YES.

>> BOARD MEMBER OLSON.

>> I CAN'T TELL YOU HOW MUCH I'M INCLINED TO VOTE NO BUT I'LL SAY YES. I DON'T HAVE ANY FAITH. I DON'T.

>> AND CHAIR KAHN IS NOT --

>> YES.

>> YOU FORGOT DUFFY.

>> IT DIDN'T GO WELL. OKAY. YOU'RE DOING GREAT. SO THAT WAS APPROVED. IT'S AVAILABLE TO THE CITY COUNCIL, OF COURSE, AS

ALWAYS. ENJOY THAT. WE'RE GOING TO MOVE ON AND BEFORE WE MOVE ON, LET'S BRING CHARLES BACK. I WANT TO SAY AS SOON AS HE'S BACK AND CHAIR OF THE MEETING I'M GOING TO TURN MY CAMERA OFF FOR A FEW MINUTES TO EAT THIS AMAZING PASTA THAT WAS BROUGHT TO ME. I DIDN'T WANT TO EAT WHILE I WAS CHAIRING SO I'LL TURN MY CAMERA OFF AND I'M STILL PRESENT AND ENGAGED AND TURN IT BACK ON WHEN I'M DONE.

>> ENJOY THE PASTA, SHOSHANA. THANK YOU FOR COVERING. WE NOW LOOK FORWARD TO THE ITEMS WHICH WERE SCHEDULED FOR THE ACTION CALENDAR BY STAFF. STARTING WITH 1151 GRIZZLY PEAK BOULEVARD AND WE COULD CHANGE THE SEQUENCE. THIS IS THE HEARING FOR 1151 GRIZZLY PEAK BOULEVARD. WHO IS REPRESENTING THIS FOR THE CITY?

>> THIS IS LIAL. I DIDN'T SEE YOU EARLIER. WELCOME.

>> HELLO. GIVE US AN OUTLINE OF THE PROJECT THAT WOULD BE GREAT.

>> GOOD EVENING. I WANT TO MAKE SURE YOU CAN HEAR ME. THE ITEM IS TO LEGALIZE THE ACCESSORY DWELLING. IT'S WITHIN THE R1H ZONING DISTRICT. THAT IS SINGLE-FAMILY RESIDENTIAL WITH HILLSIDE OVERLAY AND CONFORMS TO THE DISTRICT WITH DENSITY, HEIGHT, LOT COVERAGE AND OPEN SPACE. I WANT TO CLARIFY AND MAKE SURE IT'S NOT COMING TO ZAB DUE TO NON-CONFORMITIES BUT DUE TO THE ORIGIN AS THE CODE ENFORCEMENT CASE AND STAFF DECIDED TO BRING THIS TO YOU GUYS. I KNOW IN THE PAST YOU ARE USED TO SEEING PROJECTS THAT ORIGINATE AS AN A.P. DUE TO NON CONFORMITY WHETHER DENSITY

OR LOT BECOME PERMITS. THIS IS ON GRIZZLY PEAK BOULEVARD. THIS IS A SITE PLAN. FOR BACKGROUND IN MAY OF 2021 THE APPLICANTS INVOLVED TWO PRE-FAB CUSTOM BUILD ACCESSORY BUILDING CONSISTENT OF WHAT IS ACCESSORY BUILDING -- EXCUSE ME? I HEARD SOMETHING. NEVER MIND. THEY CONSISTENT OF ACCESSORY BUILDING NUMBER ONE, WHICH IS 120 SQUARE FOOT IN AREA AND USED AS A CERAMICS STUDIO IN THE NORTHEAST CORNER OF THE REAR YARD OF THE PROPERTY. THAT IS THIS ONE RIGHT HERE. AND ACCESSORY BUILDING TWO, WHICH IS APPROXIMATELY 103 SQUARE FEET AND USED AS A HOME OFFICE AND EXERCISE SPACE ON LOCATED ON THE SOUTHEAST CORNER OF THE REAR YARD. THE APPLICANTS INSTALLED PREFAB BUILDINGS FOLLOWING THE CLOSURE OF THEIR GYM AND WORK OUT SPACE DUE TO THE PANDEMIC. THE DEFINITIONS UNDER THE ZONING ORDINANCE DIFFERENTIATE BETWEEN ACCESSORY BUILDING AND ACCESSORY STRUCTURES BASED ON THE USE OF THE STRUCTURE AND WHETHER IT'S CONSIDERED HABITABLE OR NON-HABITABLE SPACE. IN RESEARCHING THE PROJECT, LAND USE STAFF FOUND THE APPLICANTS HAD REQUESTED INFORMATION FROM THE ZONING COUNTER IN AUGUST 2020 REGARDING ACCESSORY STRUCTURES BUT SINCE IT WAS NOT CLEAR WHAT THE INTENTION WAS TO INSTALL HABITABLE STRUCTURE PER THE ACCESSORY BUILDING OF THE ZONING ORDINANCE THE APPLICANTS WERE NOT INFORMED AN AUP WAS REQUIRED. THE ORDINANCE STATES ACCESSORY BUILDING REGARDLESS OF WHETHER YOU HAVE STANDARDS OF SIZE, LOCATION, HEIGHT REQUIRES ZONING APPROVAL THROUGH AN AUP PROFESSION WHILE ACCESSORY STRUCTURES ARE ALLOWED

BY RIGHT. I'M HIGHLIGHTING THE DIFFERENCE VERSUS ACCESSORY STRUCTURES. I SHOULD SAY WE SHOULD BE CAREFUL AS POSSIBLE BECAUSE EVEN I MIX UP TWO SOMETIMES. PER DEVELOPMENT STANDARDS I BELIEVE TABLE 4 IN THE STAFF RECORDS THE ACCESSORY BUILDING WOULD MEET STANDARDS GOVERNING ACCESSIBLE STRUCTURES INCLUDING HEIGHT LIMITS AND MINIMUM STEP OUTS.

>> ARE THERE ANY QUESTIONS AT THIS TIME? NOTHING SEEING ANY WE'LL GO TO THE APPLICANT. IGOR DO YOU HAVE A QUESTION?

>> OF COURSE I DO. ONE THING THAT MAYBE WOULD HELP BEING I'M LOOKING AT TABLE 4 ON PAGE 5 OF THE STAFF REPORT. THERE ARE SOME ELEMENTS THAT CONFORM WITH PARTS OF THE BUILDING SETBACKS DEPENDING ON WHAT THE REQUIRED SETBACK IS BUT I WAS A LITTLE BIT UNCLEAR WHAT THE ZERO TO FOUR FEET MINIMUM IS. AT WHAT POINT IS IT ZERO AND AT WHAT POINT IS IT FOUR AND IN BETWEEN.

>> THE WAY THE ZONE ORDINANCE SECTION IS WRITTEN WITHIN ZERO TO FOUR FEET OF THE SETBACK YOU CAN HAVE A LIMIT OF 10 FEET. HOPEFULLY THAT ANSWERS YOUR QUESTION.

>> I THINK SO.

>> IF IT WAS TALLER THAN 10 FEET IT'D HAVE TO BE SET BACK AT LEAST FOUR FEET.

>> THAT'S HELPFUL. THANK YOU. I DON'T SEE MORE QUESTIONS AT THIS TIME FOR STAFF. SO LET'S MOVE FORWARD WITH THE APPLICANT STATEMENT.

>> APPLICANTS ARE GINA AND MATT AND BELIEVE THEY'RE ALREADY ON YOUR SCREEN AT LEAST THEY'RE ON MINE.

>> THANK YOU FOR THE OPPORTUNITY. I'M MATT JACOBS OWNER OF 1151 GRIZZLY PEAK BOULEVARD AND DUE IT CHANGES IN COVID MY WIFE AND I DECIDED ON ACQUIRING TWO ADDITIONAL STRUCTURES FOR OUR PROPERTY AFTER MUCH RESEARCH AND FOR A NUMBER OF REASONS WE DECIDED TO PURCHASE TWO PRE-FABRICATED STRUCTURES. WE RESEARCHED BERKELEY BUILDING CODES, MADE CONTACT WITH THE CITY AND FROM THAT INFORMATION DECIDED TO MOVE FORWARD, TAKING INTO CONSIDERATION BOTH DESIGN AND PLACEMENT OF OUR UNITS. WHEN LOOKING AT THE PLACEMENT OF THE UNITS WE TOOK THE NEIGHBORS INTO CONSIDERATION. WE COULD HAVE PLACED THEM CLOSER TO OUR SHARED PROPERTY LINES AND CHOSE NOT TO. I'D LIKE THE BOARD TO KNOW WE CONSIDERED OTHER VARIABLE OPTION TO CREATE HABITABLE SPACES TO MEET OUR NEEDS FOR WORK, EXERCISE AND GINA'S ART STUDIO DUE TO COVID CLOSURES. FIRST WE CONSIDERED BUILDING THE STRUCTURES OURSELVES CREATING MONTHS OF NOISE AND DUST -- HELLO ARE YOU STILL THERE?

>> GO AHEAD.

>> I'M JUST SHARE MY SCREEN. AND ON THE WEEKENDS WE COULD USE THE MOST TIME TO WORK AND BUILD. AND SECOND OPTION WAS TO BUILD

A STORY CREATING MORE OF A DISTURBANCE AND GREATER LENGTH OF TIME AND WE NEEDED THE FASTEST TURN AROUND TIME TO MEET THE DEMANDS OF OUR HOME. CONSIDERATIONS RESOLVED OUR NEIGHBOR AT 25 STODDARD WAY IN BUILDING THE UNIT AS OUTLINED IN OUR APPLICATION STATEMENT. DESIGN AND CONSIDERATIONS WERE SUCH THEY DELAYS DELIVERY OF BOTH UNITS BY MONTHS DUE TO THE DESIRES TO CHANGE THE SIZE AND HEIGHT OF UNIT TWO IN RELATION TO 25 STODDARD WAY IT BECAME A CUSTOM BUILD AND WE REDUCED THE SQUARE FOOTAGE AND REMOVED LIGHTING AND REDUCED THE ROOF HEIGHT AND PITCH. INSIDE I CAN TOUCH THE CEILING WHEN I'M STANDING. THE DESIGN IS ULTIMATELY REFLECTION ON OUR DESIRE TO NEGATE SHADOWS AND ALLOW A GREATER AMOUNT OF LIGHT INTO 25 STODDARD WAY. IN FURTHER DISCUSSION OF LIGHT, THERE ARE SEVERAL TREES BETWEEN OUR PROPERTY AND THERE'S STUDIES OF THE PROPERTIES. ALL THE LARGEST TREES IN THAT AREA ARE ON 25 STODDARD WAY AND CREATE SHADOWS ACROSS ADJACENT PROPERTY. IN PREPPING FOR THE PLACEMENT OF THE UNITS WE REMOVED FROM OUR PROPERTY TWO LARGE, NON DECIDUOUS TREES. THE TREES RANGED IN HEIGHT FROM 16 TO 23 FEET AND OVER ALL WE LOWERED THE SHADOW CASTING PROPERTIES. UNIT 1 DESIGN CHOICE WE REMOVED THE STANDARD DROP STRUCTURE FEATURE TO HAVE THE BACK WALL MADE OF GLASS AS THAT COULD POSE PRIVACY ISSUES WE DECIDED TO REDUCE THE OF AMBIENT LIGHT IN THE UNIT AND MAKE THAT BACK WALL COMPLETELY SOLID. WE PUT A THIN WINDOW AT THE BACK OF THE UNIT TO ALLOW SOME LIGHT IN THE REAR OF THE SPACE.

>> WE HAVE DROP STRUCTURES TO MAKE SURE THEY BUILT UNITS TO ADHERE TO CONSIDERATION.

>> YOU'RE OUT OF TIME. YOU HAVE UP TO TWO MINUTES IN REBUTTAL. ARE THERE QUESTIONS FOR THE APPLICANT. I HAVE A COUPLE QUESTIONS MYSELF, MATT. ONE OF THEM IS THE DEFINITION OF ACCESSORY BUILDING OR STRUCTURE AS ARCHITECT I FIND IT ODD THAT REGULATION WHAT THEY ARE AND THAT'S WHAT WE ARE MANDATED TO ENFORCE. YOU'RE HERE TONIGHT. I TEND TO THINK OF THE BUILDING AS SOMETHING WITH THE FOUNDATION TO IT APPARENTLY STRUCTURE OR FOUNDATION IN THE PLANNING DEPARTMENT DEFINITION.

>> YOU CAN DO GRANITE OR GRAVEL OR LAY IT STRAIGHT ON THE GROUND. I FELT BECAUSE -- I FELT LIKE IT WAS BETTER TO GIVE THE GROUND SOMETHING MORE STUDY TO WORK WITH. SO WHAT WE DID WAS WE Poured A ONE-FOOT WIDE BY WHATEVER THE LENGTH OF THE UNIT WAS TRENCH FOOT DEEP WITH GRAVEL IN THERE AND CONCRETE AND REBAR IN THERE SO THOSE UNITS HAD A WAY TO SIT NICELY ON THOSE PADS AND BE MORE LEVEL AND I THINK ACTUALLY MORE SECURE.

>> AND ELECTRICAL?

>> THE WAY THE ELECTRICAL WORKS IN THE UNITS, THERE'S A PLUG ON THE BACK AND WE HAVE AN EXTENSION CORD RUNNING TO THE BACK OF THE UNITS. WE DID GET 12 GAUGE EXTENSION CORDS AND UPON APPROVAL I'D LIKE TO RUN A STANDARD ELECTRICAL WITH A DEDICATED CIRCUIT TO THEM. I THINK THAT WOULD BE THE LONG-TERM CHOICE. I THINK

IT'S A GOOD CHOICE. SO YEAH, RIGHT NOW IT'S AN EXTENSION CORD THAT RUNS TO THEM.

>> THAT'S VERY HELPFUL. I APPRECIATE YOU CLARIFYING. JUST TO BE CLEAR, I APPRECIATE YOUR STATEMENT ABOUT CONCERN FOR THE NEIGHBOR AND THE LIGHT AND SO FORTH. THESE CONCESSIONS YOU MADE WERE THOSE MADE IN COLLABORATION WITH THE NEIGHBOR OR CONSIDERATION OF THE NEIGHBORS?

>> MY COMPUTER SHOWED ON MUTE. I HAVE QUESTIONS. ARE THERE PLANS FOR PLUMBING IN EITHER UNIT?

>> NO, MA'AM. THERE'S NOT.

>> HOW DO YOU PLAN TO HEAT THEM?

>> THERE'S A SMALL HEATER THAT CAN BE PLUGGED IN. THE AFTERNOON SUN ACTUALLY KEEPS THEM QUITE WARM.

>> I'M SORRY, ONCE THE FOG HITS, I DON'T KNOW THAT THAT WILL BE ADEQUATE. DO YOU HAVE ANY PLANS TO ADD SKYLIGHTS ON EITHER UNIT OR SOLAR PANELS?

>> NO.

>> DID YOU GIVE ANY CONSIDERATION TO PLACING THE UNITS CLOSER TO YOUR HOME RATHER THAN TO YOUR NEIGHBOR'S HOME?

>> WE TOOK CONSIDERATION INTO WHAT WE THOUGHT WAS THE BEST LAYOUT. WE TRIED TO CREATE A BUFFER BETWEEN THE UNITS AND THE ADJACENT PROPERTIES.

>> DO YOU KNOW THE DISTANCE BETWEEN THE BACK OF YOUR HOUSE AND THE UNITS?

>> THAT'S REPRESENTED IN THE DOCUMENT. THERE'S 11 FEET AND BETWEEN THE OTHER HOMES, ONE HOME 1157 GRIZZLY PEAK IS CADDY CORNER AND THAT MEASUREMENT I'LL ROUGH AT 10 FEET AS WELL AND THEN 11 FEET OR A HOME VERY CLOSE ON THE WEST SIDE OF THE PROPERTY.

>> WAS THERE A PHYSICAL IMPEDIMENT? 11 FEET ON ONE SIDE AND 41 FEET ON THE OTHER SIDE? WAS THERE A PHYSICAL -- BECAUSE WE HAVEN'T SEEN THE SITE. THERE'S A STAIRCASE GOING UP. -- STAIRCASE GOING UP.

>> THAT'S HELPFUL.

>> IN YOUR STATEMENT YOU SPOKE FOR A WHILE HOW MUCH CONSIDERATION AS TO THE IMPACT ON THE NEIGHBOR YOU TOOK IN YOUR DESIGN AND I APPRECIATE THAT BUT I'M CONFUSED BECAUSE THE NEIGHBOR IS REPRESENTED AND YOU JUST REPRESENTED EARLIER YOU DIDN'T DISCUSS THIS PROJECT WITH THE NEIGHBOR BEFORE GOING FORWARD. HOW DID YOU ASSESS THE IMPACT TO THE NEIGHBOR WITHOUT SPEAKING TO THEM?

>> WHEN WE START THE PROJECT WE THOUGHT THE UNITS WERE STRUCTURES.

>> LET'S TALK TO THE BUILDERS. WE HAD MANY MEETINGS WITH THEM. AT POINTS THEY WERE GETTING THE DESIGNS WRONG. I WAS LIKE NO, YOU NEED TO BRING IT DOWN AND LOWER THE ROOF.

>> I WOULD LIKE EVERYONE TO KNOW BECAUSE WE CONSIDERED THE BACK NEIGHBOR AT 25 STODDARD WE ACTUALLY INCURRED MORE COSTS IN MAKING A CUSTOM BUILT.

>> YOU'VE BEEN CLEAR ABOUT THAT AND I APPRECIATE YOU CLARIFYING. I'M CONFUSED AND MAYBE THERE IS NO ANSWER TO LIKE WHY WOULD YOU TAKE ON THIS COST AND GO THROUGH ALL THIS TROUBLE AND THEN NOT CHECK WITH THE NEIGHBOR TO SEE WHAT THEIR NEEDS WERE? IT'S CONFUSING FOR ME AND MAYBE WE CAN LEAVE IT AT THAT AND YOU CAN RESPONSE BRIEFLY.

>> ULTIMATELY I WOULD THINK WE FELT LIKE THE DECISION STAYED WITH US.

>> THAT'S FAIR. MY SECOND QUESTION IS WHICH IS IS IT POSSIBLE TO TELL ME HOW YOU WENT ABOUT IT HIT

>> IT WAYS A COUPLE THOUSAND POUNDS. I CAN'T I DON'T KNOW WHAT THAT WOULD MEAN.

>> OKAY. THANK YOU. THANK YOU, SHOSHANA. IGOR YOU'RE NEXT.

>> SO JUST A SIMPLE QUESTION. IN THE SUPPLEMENTAL WE RECEIVED THERE WAS A REFERENCE BY A PROPOSED COMPROMISE. WHAT ARE YOUR THOUGHTS.

>> THE COMPROMISE LETTER AND THIS WOULD TAKE IT FROM 11 FOOT TO 6'2" AND IF YOU WERE CONSIDER THE THICKNESS OF THE ROOF JOYCE SO THE INTERIOR WOULD BE 5'8" THAT WASN'T SOMETHING I THOUGHT WAS A REASONABLE REQUEST.

>> THANK YOU.

>> THERE'S SEVERAL LONG TREES LONG 25 STODDARD WAY THAT ARE THE BIGGEST IMPEDIMENT TO THAT PROPERTY'S ABILITY TO HAVE ANY LIGHT ON THAT PROPERTY.

>> THE ANSWER THE QUESTION AND THANK YOU FOR THE RESPONSE.

>> I'LL SAVE IT FOR COMMENTS.

>> THANK YOU.

>> IN THAT CASE WE'LL PROCEED WITH NEIGHBORS COMMENTS AND THIS IS AN OPPORTUNITY IF YOU WISH TO SPEAK ON THIS AN ATTENDEE RAISE YOUR HAND AND I SEE ONE HAND RAISED.

>> SHE SAID SOMETHING TO PUT ON HER SCREEN BEFORE WE START HER TIME IF YOU CAN ALLOW ME TO SHARE MY SCREEN. MY SHARE SCREEN BUTTON HAS DISAPPEARED.

>> BOTH JOANIE AND I WILL BE SHARING A COMPUTER SO WE CAN ALL RAISE ONE HAND. IF YOU COULD CALL HER AFTER ME OR EVEN LET HER GO FIRST, THERE'S TWO PEOPLE ON THE SAME COMPUTER.

>> I ONLY HAVE PATRICIA WITH YOUR HAND RAISED.

>> SHE'S WITH ME JUST ON MY COMPUTER.

>> OH. IN THAT CASE, IF WE HAVE TWO PEOPLE ON THE SAME CALL, YOU WOULD EACH GET A COUPLE MINUTES TO SPEAK.

>> OKAY. SAMANTHA WOULD YOU MIND PUTTING UP THE DOCUMENTS FOR JONAH FIRST.

>> I AM UNABLE TO NAVIGATE STAIRS THE ONLY COMMUNICATION REGARDING THE ART STUDIO WAS A SCRAP OF PAPER IN MY MAILBOX SAYING THERE WERE COMING THE NEXT WEEK AND THE CITY OF BERKELEY APPROVED THEM. .

>> THEN, YOU ENTER THE LIVING ROOM. BOOM. A DARK STRUCTURE FILLS THE WINDOWS BLOCKING LIGHT, SPACE AND THEN, LOOKING OUT OF THE DOORWAY, BOOM. AGAIN. ART STUDIO. INTO THE KITCHEN, DINING AREA, FACING PATIO. A DIFFERENT ROOF. WORKOUT STUDIO, GRABS LIGHT, SPACE AND HORIZON TO THE SOUTHWEST. I CAN'T GET AWAY FROM THESE BUT LOST SIGNIFICANT LIGHT, SPACE AND AIR, CAUSING SIGNIFICANT DISSIDENT TO ENVIRONMENT, AND PEACE OF MIND AS IF THERE ARE DARK CURTAINS AROUND THE SIDE OF THE HOUSE. FACING THAT YARD, FROM I HAD LIGHT, HORIZON AND AIRY FEELING. I REALLY NEED YOUR HELP

ZONING BOARD MEMBERS. I DID MAKE AN OFFER OF COMPROMISE, THEY
THREW IT AT ME. I LIKE THESE STRUCTURES TO NOT BE APPROVED.
THANK YOU VERY MUCH.

>> YOU HAVE TWO MINUTES.

>> THANK YOU.

>> AND HAD THE APPLICANT SAT DOWN WITH JOAN BEFORE THEY DID
THIS, BUT THEY DIDN'T. THE ZONING IS AS IF THE APPLICANT SAT
DOWN AND THESE ARE TWO STRUCTURES AND ONLY WINDOW IS IN THE MAIN
ROOM OF HER HOUSE. THE ROOF PERMIT CRITERIA IS AN OBJECTIVE
STANDARD ON PURPOSE. IT ASKS YOU TO LOOK AT IT FROM EACH CASE
AND FACTS OF EACH CASE. IN THIS CASE, THE DETRIMENT TO JOAN IS
UNMISTAKABLE. IT'S THIS HER FACE IN EVERY ROOM. AND CONTRARY
SOCIAL PURPOSE [AUDIO INDISCERNIBLE]. FOR EXAMPLE, HOUSING.
NOW. NEW BUILDINGS ARE AN ART STUDIO AND EXERCISE ROOM. UNDER
THE CIRCUMSTANCES, I DON'T SEE HOW STAFF CAN DO ANYTHING BUT
MAKE A COMPROMISE TO BE CLEAR WOULD BE ASK APPLICANT TO REMOVE
FIVE FEET A PIECE ADDED TO THE ROOF. OTHER OFFER OF COMPROMISE
IS TO ASK IF THEY REMOVE EXTRA TWO FEET OF HEIGHT AND OVERHANGS
ON THE SECOND BUILDING. IN APPLICANT STATEMENT, THEY SHOW YOU --

.

>> PLEASE WRAP UP.

>> I ASK TO YOU COMPARE APPLICANT STATEMENT IN MY DOCUMENT THAT SHOWS WITH APPLICANTS HAVE A PICTURE OF THE ART STUDIO THE WAY IT ARRIVED. IT ISN'T A PICTURE OF THE ART STUDIO AS IT NOW EXISTS AN THE FORE FRONT YOU SEE SHOWS WHERE THE BUILDINGS ARE AND WHERE EACH ONE OF THOSE BUILDINGS ARE. THEY'RE REALLY -- NO OTHER WAY TO DESCRIBE THESE WORN PATHWAYS. THEY SAT DOWN TO DO THAT INTENTIONALLY. AND THANK YOU.

>> OKAY. WE HAVE ALSO, PATRICIA THIS, IS YOUR OPPORTUNITY AS PROMISED TO SPEAK.

>> OKAY. CAN YOU HEAR ME?

>> YES I'LL BE BRIEF. MY NAME IS PATRICIA LA COAT AT 1173 WOODLEY AVENUE AND I'M A GOOD FRIEND OF JOAN'S, AND HAD A NICE INTERACTION WITH MATT AND GENA AND THEIR DOG, SLOPPO. IT'S SAD TO ME THIS HAPPENING BUT I WANT TO SUPPORT JOAN IN WHAT SHE'S GOING THROUGH WITH THIS. I ARE BEEN TO HER HOUSE MANY TIMES. AND WHEN I WENT TO HER HOUSE AFTER THE STRUCTURES WERE PUT UP I IMMEDIATELY NOTICED A SENSE OF YOU KNOW, LESS SPACE, LESSENS OF -- YOU SAW IT IN THE PHOTOS. AND JOAN IS VERY REASONABLE. I THINK IF MATT AND YOU KNOW, GINA REALLY HAD, THEY DID A LOT OF WORK. YOU GUYS DID A LOT OF WORK IN CONSIDERING. I THINK IF YOU SAT DOWN AND TALKED. THAT IS WHAT FACE-TO-FACE STUFF DOESN'T HAPPEN ANYMORE. IT'S A GOOD EXAMPLE OF IT NEEDING TO HAPPEN. SO ANYWAY, I CAN ATTEST TO THE FACT MUCH OF HER VIEW BLOCKED AND

THE FEELING I GET IN THE HOUSE IS VERY SIMILAR TO WHAT JOAN IS SUFFERING FROM WHERE WITH THESE STRUCTURES SO I HOPE THERE CAN BE SOME KIND OF COMPROMISE AND I HOPE I SHARE IN GOOD TERMS WITH MATT AND GINA BECAUSE MY DOG ANNIE DOESN'T GET ALONG WITH ALL DOGS BUT GETS ALONG WITH THEIR DOG, SLOPPO.

>> THANK YOU FOR COMING TONIGHT. WE HAVE DAVID SCOTT NEXT. NEXT UP. DAVID. YOU HAVE TWO MINUTES.

>> HELLO.

>> YES. WE CAN HEAR.

>> THANK YOU. APPRECIATE THE TIME. MY NAME DAVID SCOTT. MY FAMILY AND ARE NEIGHBORS AND SHARE LINES WITH MATT AND GINA TO WEST NORTHWEST. WE HAVE BEEN RESIDENTS SINCE 2017 AND HERE TO SPEAK FROM THE APPLICATION. MATT AND GINA KEPT US WELL INFORMED AND TOOK CONSIDERATION OF SURROUNDING HOMES AND ABILITY TO PLACE THE UNITS AND THEY COORDINATED WITH US AND OTHER NEIGHBORS ON THE WORKMEN ARRIVED TO CONSULT AND SO FORTH. INSTALLATION PROCESS ITSELF CONSTRUCTION WITH VARIOUS MOVING IN MY OPINION HE DID WHAT THEY SAID THEY'RE GOING TO DO AND THE RESULTING STRUCTURES, WE THINK ARE WELL CONSTRUCTED AND AESTHETICALLY PLEASING. I HAVE A CLEAR VIEW OF THEM. THE PEAKED ROOF IS AESTHETICALLY PLEASING AND WELL DESIGNED STRUCTURE THAT WE THINK ADDS VALUE TO SURROUNDING HOMES AND IN MY BEEN THEY DON'T OBSTRUCT ANYTHING. I CAN UNDERSTAND JOAN'S POINT OF VIEW FROM

HER WINDOWS. WE DON'T HAVE THAT ANGLE. BUT I DON'T THINK THEY'RE THESE DARK STRUCTURES THAT REALLY DETRACT FROM THE SURROUNDINGS IN ANY WAY. IN TERMS OF USE, WE'VE NOTICED NO NOISE OR DISRUPTIONS FROM MATT AND GINA. YOU KNOW. SO THAT NOT BEEN AN ISSUE. AND I HAVE HAD NEIGHBORS HERE, AND FRIENDS HERE TO SEE THE STRUCTURES AND FEEL THEY'RE, AGAIN, VERY AESTHETICALLY PLEASING AND ADD VALUE TO SURROUNDING HOMES. SO I THINK TO WRAP UP, AS DIRECT NEIGHBORS WE HAVE NO ISSUES WITH THE STRUCTURE AND SUPPORT MATT AND GINA'S APPLICATION FOR APPROVAL.

>> DAVID. DOES THAT CONCLUDE YOUR STATEMENT?

>> I'M SORRY?

>> IF THAT CONCLUDES YOUR STATEMENT, I JUST WANT TO --.

>> YES. PLEASE.

>> AS YOU CAN TELL FROM THE COMMISSION EARLIER, THERE MAY BE A DISCUSSION LATER ABOUT POSSIBLE RELOCATION OF ONE OR BOTH OF THESE STRUCTURES. AMONG THOSE OPTIONS WOULD BE RELOCATING THE STRUCTURE ONE IN FRONT OF THE PROPERTY. A COUPLE FEET CLOSER TO YOUR PROPERTY. IS THAT SOMETHING WOULD YOU OBJECT TO?

>> I DON'T THINK SO. RIGHT NOW, I THINK IT'S RIGHT UP AGAINST OUR FENCE AS IT S IF I SEE AN EXTRA COUPLE INCHES IN PERSPECTIVE IT'S NOT GOING TO BOTHER ME. I HAVE A CONSTRUCTION BACKGROUND AS

WELL. I GUESS IT'S FOR ANOTHER DISCUSSION BUT I KNOW DIFFICULTIES MOVING SOMETHING LIKE THAT, TOO.

>> THANK YOU DAVID. I APPRECIATE THAT COMMENT.

>> THANK YOU.

>> AND, LET'S SEE WE DO HAVE KAREN MEADOWS AND SUZIE BAILEY COMING UP. BUT ERIN, YOU'RE RECOGNIZED.

>> HI. THANK YOU. CAN YOU HEAR ME?

>> YES.

>> GREAT. ON HERE IS MY HUSBAND ANTHONY. WE LIVE AT 1148 WRIGLEY PEAK ACROSS THE ROAD. SO WE CAN'T, WE'RE NOT IMPACTED AT ALL BY THE ADU. WE JUST WANT TO SPEAK IN SUPPORT OF MATT AND GINA. AND BASICALLY, YOU KNOW AGREE WITH WHAT DAVID HAD BEEN SAYING. THEY'RE EXTREMELY CONSCIENTIOUS NEIGHBORS AND WE'VE KNOWN THEM SEVERAL YEARS, THEY'VE BEAUTIFIED THE NEIGHBORHOOD ON THEIR GARDEN AND WORK HARD ON THEIR PROPERTY WITH THAT PATIO THEY'VE BUILT. SO I DO FEEL FOR JOAN. I APPRECIATE WHAT SHE HAD TO SAY. I, THERE WAS A PANDEMIC GOING ON THAT LENT TO THE LACK OF COMMUNICATION, BUT I KNOW THAT MATT AND GINA AS THEY FACED IN THEIR REMARKS WERE REALLY TRYING TO BE AS CONSCIENTIOUS AS THEY COULD AND WENT ABOUT THIS DEVELOPING THIS PROJECT. SO WE JUST WANT TO SUPPORT THEM. WE HOPE AWE PROVE.

>> THANK YOU.

>> THAT IS IT.

>> APPRECIATE YOU COMING TONIGHT, ERIN. WE HAVE A SELF MORE PEOPLE THAT RAISED THEIR HANDS. WE'RE THIS A TIGHT TIME LINE HE HERE. LET'S GET THESE LAST FEW PEOPLE IN HERE. SUZY? I NEED TO UNMUTE. KEEP IT TO A MINUTE THAT WOULD BE GREAT.

>> I'M SUZY BAILEY I LIVE OVER JOAN'S BACK FENCE AND I NEW NUDGE THESE PROJECTS. I HADN'T TALKED TO JOAN ABOUT IT. I DON'T KNOW THE PEOPLE WHO BUILT THOSE. WHEN I LOOKED, I JUST WANT TO SAY I'M A DAUGHTER OF TWO ARCHITECTS. I GROUP UP WITH ARCHITECTURE AROUND ME. MY MOTHER WAS EDITOR OF AN NATIONALLY PUBLISHED ARCHITECTURAL MAGAZINE SO I HAVE A BACK GROUND OF LOOKING AT THINGS. WHEN I LOOKED AT THE VIEW OF THE TWO UNITS, FROM THE POINT OF VIEW OF THE BUILDERS, IT LOOKED REALLY NICE. I'VE BEEN IN JOAN'S HOUSE WHEN IT WAS FOR SALE. I TOOK ONE LOOK AT THE PICTURE SHE SHOWED OF WHAT SHE SAW OUT OF HER LIVING ROOM AND I WAS ABSOLUTELY HORRIFIED. THAT REALLY DOES IMPACT HER LIFE. AND HER, WHAT SHE LOOKS AT. AND, YOU KNOW, I'M NOT HERE TO TAKE SIDES. I'M JUST SAYING HOW I THOUGHT, I'M JUST SHOCKED. I WAS JUST SHOCKED TO SEE WHAT IT DID TO HER VIEW OF HER --.

>> THANK YOU. THANK YOU FOR COMING IN AND EXPRESSING YOUR VIEWS TONIGHT. DO YOU HAVE ANYTHING ELSE THAT YOU WANT TO TOUCH ON?

>> NO. THAT IS IT.

>> THANK YOU.

>> I THINK IT WOULD HAVE BEEN GOOD TO TALK TO HER. I REALLY DO. IF THAT HAD BEEN ME, I -- I DON'T KNOW WHAT I WOULD HAVE DONE. I WOULD HAVE BEEN SO UPSET.

>> THANK YOU. MONA HALIBEE?

>> YES. HI. I LIVE AT 1157 SO I'M THE HOUSE THAT IS ADJACENT ON THE OTHER SIDE OF MR. SCOTT. I AM SPEAKING IN SUPPORT OF MATT AND GINA'S APPLICATION. I'M NOT IMPACTED BY THEIR STRUCTURE. THE STRUCTURES ARE FAR ENOUGH IN THE BACK THAT THEY LINE UP WITH MY SIDE GARDEN. AND MY DECK. MY UPSTAIRS DECK. SO I'M IN THE IMPACTED BUT I'M SPEAKING IN SUPPORT OF MATT AND GINA, BECAUSE I'D LIKE TO JUST SAY ABOUT THEIR CHARACTER. THAT I FIND THEM TO BE EXTREMELY RESPECTFUL AND HELPFUL WHENEVER THEY'VE BEEN ANY NEED THEY'RE RIGHT THERE. THEY'RE VERY THOUGHTFUL WHEN THEY MAKE ANY DECISIONS AND SO FAR, I HAD A GOOD RELATIONSHIP WITH THEM. SO I JUST WANTED TO SPEAK IN FAVOR OF THEIR CHARACTER. AND YOU KNOW, I'M SORRY THIS IS IMPACTING JOAN. AND SHE IS MY NEIGHBOR ON THE EASTERN SIDE. AND I HOPE THAT THIS CAN BE RESOLVED BUT I AM SPEAKING IN SUPPORT OF MATT AND GINA'S APPLICATION AND I HOPE IT CAN BE APPROVED. THANK YOU.

>> THANK YOU FOR COMING.

>> MAY BY PROCEED WITH THE RESPONSE? OR DO WE NEED TO --.

>> YES. WE HAVE AS LONG AS IT'S DONE BEFORE 9:00. THAT PORTION
DONE BEFORE 9:00.

>> SOUNDS GOOD. THEN, YOU THOUGH WE'LL HOLD COMMENTS FROM THIS
COMMISSION. WE'LL DOES APPLICANT HAVE AN OPPORTUNITY TO PROVIDE
A RESPONSE.

>> HI, THERE.

>> CAN I GO?

>> SURE.

>> TWO MINUTES I SHOULD LET YOU KNOW, GINA.

>> I JUST WANT TO MAKE SURE THAT LAEL PUTS UP THE IMAGE THAT I
GAVE HER BEFORE STARTING.

>> ALLISON IF YOU CAN HOLD UP THE TIMER THAT WILL BE GREAT.

>> I WILL DO THAT RIGHT NOW. GINA, CAN YOU REMIND ME WHICH ONE?
I RECEIVED A COUPLE THINGS FROM YOU GUYS? .

>> THE SIX NEIGHBORS THAT--THERE WE GO.

>> SHOULD BE UP.

>> OKAY. I THINK IT'S IMPORTANT HERE IN, THIS DISCUSSION, WHY
DIDN'T WE APPROACH JOAN? FROM THE GET GO, MATT AND I WERE
GARDENING WHEN JOAN APPROACHED US FOR THE VERY FIRST TIME AND
IMMEDIATELY ASKED US TO REMOVE OUR VERY OLD APPLE TREE NOT
ENCROACHING ON HER PROPERTY. SO THAT WAS A BAD START. IT WAS,

AND THIS PAST TUESDAY, I RECEIVED NOTICE ON TUESDAY IF NEIGHBORS WERE TO SUPPORT APPROVAL OF OUR TWO ACCESSORY BUILDINGS IN WRITING, THEIR LETTERS WERE DUE THAT DAY. EACH OF THE SIX HOUSEHOLDS I SPOKE TO THAT AFTERNOON E-MAILED LETTERS TO JOINING ADJUSTMENT BOARD IN FAVOR OF APPROVAL OF OUR ACCESSORY BUILDINGS. INCLUDING THREE NEIGHBORS WHO SHARE A FENCE LINE WITH JOAN. ONE LIVES ACROSS THE STREET FROM HER AND 2 ACROSS THE STREET FROM US. IT'S SPEAKING WITH JOAN NEXT DOOR NEIGHBOR TO THE EAST, I HAVE A BETTER UNDERSTANDING OF JOAN'S CHARACTER. THE NEIGHBOR DESCRIBED VARIOUS SITUATIONS BROUGHT ON MY JOAN THAT HER AND OTHER NEIGHBORS HAVE FACED WHEN SHE, HERSELF HAD PERSONALLY REACHED HER LIMIT WITH JOAN. JOAN HAD CALLED HER DIRECTLY AND REQUESTED HER SON CELL PHONE NUMBER. THE REASON BEING THAT HER ADULT SON WHO LIVES IN THE HOME AND HAS HEALTH CONDITIONS LEAVES HIS LIGHT ON PAST JOAN'S BED TIME. JOAN WANTS TO BE ABLE TO CALL HIM TO HAVE HIM TURN OFF A PED ROOM LIGHT SO AS NOT TO INCONVENIENCE HER. I'M SHARING THIS SENSITIVE INFORMATION BECAUSE WE NEED TO SHINE LIGHT ON JOAN'S OVERREACHING REQUEST. I'D LIKE TO REMIND THE BOARD AND PUBLIC, LIKE JOAN'S NEIGHBOR'S SON WHO HAS EVERY RIGHT TO GO TO SLEEP AND TURN OFF A LIGHT WHEN DESIRED, WE ALSO HAVE THE RIGHT, THE LEGAL RIGHT TO ADD HABITABLE SPACE TO OUR LAND THE WAY WE V OUR ACCESSORY BUILDINGS MEET EVERY APPLICABLE BERKELEY MUNICIPAL CODE REQUIREMENT. I WOULD ALSO LIKE TO ADD THE THREE SUPPORTING

LETTERS IN FAVOR OF JOAN'S REQUEST HAVE FIVE FEET OF HEIGHT REMOVED FROM MY ART STUDIO MAKING IT UNINHABITABLE ARE FROM BERKELEY RESIDENTS AS FAR AS A 35 MINUTE WALK TO BONITA REVENUE. NOT ONE OF HER SUPPORTING LETTERS ARE FROM OUR BLOCK OR HERS.

>> THANK YOU. I'M GOING TO CLOSE PUBLIC HEARING TO GIVE THE CAPTIONER AN OPPORTUNITY TO TAKE A TEN MINUTE BREAK AND GIVE EVERYONE HERE AN OPPORTUNITY TO TAKE A TEN MINUTE BREAK.

>> IS MATT ABLE TO REBUT?

>> NO. YOU HAD TWO MINUTES FOR TWO OF YOU.

>> OKAY.

>> SO, THE, IT'S 8:48. PLAN ON COMING BACK PROMPTLY A FEW MINUTES BEFORE 9:00 TO START AT 9:00 PROMPTLY. EVERYONE YOU GO, TAKE A TEN MINUTE BREAK.

>> GREAT. THANK YOU.

>> I'LL LEAVE IT TO THE ARCHITECTS FOR THEIR THOUGHTS. I THINK MOVING THIS BACK UNFORTUNATELY FOR THE APPLICANTS IF WE GO THAT ROUTE WOULD ADD ANOTHER COST TO THEM ON TOP OF THE COSTS THEY'VE ALREADY INCURRED BUT COST IS ALSO SOMETHING NOT SOMETHING IN WHICH WE DO OR SHOULD BASE OUR DECISIONS. I THINK MOVING SOMETHING IS BETTER THAN TAKING IT APART THAT WOULD TAKE EXCAVATION. I WOULD SUPPORT SOME KIND OF COMPROMISE THAT WOULD ALLOW US TO MOVE THIS FORWARD TONIGHT.

>> IF I MAY SAY SOMETHING, IGOR MENTIONED COMPROMISE. I WANT TO MENTION THAT THE APPLICANTS DID SEND ME SOMETHING PRIOR TO THE HEARING. I FRANKLY HAVE NOT HAD A CHANCE TO LOOK AT IT CAREFULLY BUT I BELIEVE IT INCLUDES SOMETHING IN REGARDS TO COMPROMISE. IF YOU WOULD LIKE TO SEE IT NOW LET ME KNOW.

>> NOW WOULD BE GOOD POINT FOR IMPACT. SHOSHANA WOULD YOU LIKE TO SPEAK FIRST?

>> I'D LIKE TO SPEAK FIRST.

>> GO FOR IT. I HAVE ANOTHER COMMENT ABOUT THAT. SO MY ORIGINAL COMMENT WAS I WANT TO REMIND EVERYONE AND STAFF, PLEASE CORRECT ME IF I'M WRONG BECAUSE I'M GOING TO SAY WHAT I THINK IS THE STANDARD WE SHOULD BE USING TO DECIDE THIS AND IT'S YOUR GUYS' JOB TO SET US STRAIGHT ON THIS. MY UNDERSTANDING IS FOR A CASE LIKE THIS WE NEED TO LOOK AT IT AS IF IT'S NOT BEEN BUILT, BECAUSE IT'S BEEN BUILT WITHOUT A PERMIT. WE NEED TO IMAGINE THIS WAS A PLAN WE'RE LOOKING AT AND DECIDE IF IT'S A GOOD PLAN OR NOT. AND IT'S VERY IMPORTANT THAT WE AS ZONING COMMISSIONERS REALLY TAKE THAT SERIOUSLY BECAUSE WE CAN'T LET THE FACT THAT SOMEBODY BUILT SOMETHING WITHOUT A PERMIT MAKE IT HARDER TO SAY NO. THAT'S NOT A GOOD INCENTIVE STRUCTURE AND WE NEED TO HOLD THIS AS THE SAME STANDARD AS SOMETHING PROPOSED. THIS IS OUR PROPOSAL, HOW ABOUT THIS. WE NOT SHOULD WE HAVE THEM MOVE IT, IT SOUNDS EXPENSIVE AND I WANT TO SECOND WHAT IGOR SAID COST SHOULD

BE IRRELEVANT AND STAFF CORRECT ME IF THAT'S NOT RIGHT BUT HOW I'VE VIEWED THE CODE ENFORCEMENT AFTER THE PROJECT ENFORCEMENT.

>> AS NOTED IN THE STAFF REPORT AS I TEND TO REFER TO IT'S AN APPLICATION TO LEGALIZE THE APPROVAL. AND STAFF IN CONSULTATION BASED ANALYSIS ON.

>> YOU OF COURSE PHRASED EVERYTHING IN THE APPROPRIATE WAY AND WE LOOKED AT THE PICTURES IT LOOKS SO NICE IT'S HARD TO QUESTION IT BUT WE CAN'T LET THAT INFLUENCE OUR DECISION.

>> I UNDERSTAND AND I APPRECIATE YOU BRINGING UP THAT POINT, YES.

>> THANK YOU. SO THAT'S MY FIRST AND MOST IMPORTANT POINT. I WANT TO DECIDE THIS ON THE RIGHT BASIS. SECOND THOUGH I WANT TO ACKNOWLEDGE INSTEAD OF IMAGINING WHAT THE IMPACT COULD BE WE HAVE A STRONG SENSE OF WHAT THE IMPACT IS. WE DON'T HAVE TO SPECULATE. SO THAT IS DIFFERENT AND IT'S TOTALLY FINE TO SAY THIS DID IMPACT THE NEIGHBOR AND I THINK IT'S OKAY TO USE THAT AS EVIDENCE IN OUR DECISION. I BELIEVE THIS HAS NEGATIVELY IMPACT THE NEIGHBOR. I'M GOING TO ECHO WHAT CARRIE SAID IT'S ALARMING AND THEY CAN SEE IT. THESE ARE ALL THINGS IF I COULD IMAGINE THEY WOULD HAVE IMPACTED MY DECISION SO I'M HAPPY TO TAKE THAT INTO CONSIDERATION. I ALSO WANT TO SECOND WHAT IGOR SAID AND HE SAID I SAID THIS THOUGH I HAVEN'T YET, YOU DID CORRECTLY READ MY MIND, IGOR WHICH IS I AM PRETTY DISAPPOINTED

THAT THE NEIGHBORS WEREN'T CONSULTED. I DON'T KNOW HOW YOU CAN CONSIDER IMPACT TO NEIGHBORS WITHOUT CONSULTING THEM. THAT DOESN'T MAKE SENSE TO ME. THE FACT THAT WAS STATED SO MANY TIMES IN THE APPLICANT LETTER AND STATEMENT SEEMS DISINGENUOUS AND OBJECT TO THAT. I WISH THEY WOULD HAVE ADMITTED THEY DIDN'T TALK TO THE NEIGHBOR AND DIDN'T REALIZE THE IMPACT. I DON'T KNOW WHAT THE IMAGINED HAPPENED BUT THAT'S THE ONLY THING THAT MAKES SENSE THEY DIDN'T TAKE INTO COUNTY THE IMPACT OF THE NEIGHBOR BECAUSE THEY DID NOT TALK TO THE NEIGHBOR. THAT IS A BIG PROBLEM FOR ME AND I TALKED MORE THAN I USUALLY DO. I'M SORRY. THE LAST THING, REGARDING COMPROMISE, I'LL HEAR IT BUT I DON'T KNOW WHY THIS WASN'T BROUGHT UP BY THE APPLICANT INSTEAD OF COMMENTS ABOUT THE PEOPLE THEY ARE AND WHAT A BAD PERSON THE NEIGHBOR IS WHICH IS AS IGOR STATED CORRECTLY, IRRELEVANT. I'M RESENTFUL WE DIDN'T HEAR THINGS WHEN THE TIME WAS DURING THE APPLICANT STATEMENT. IF WE WANT TO HEAR IT NOW, FINE. OVER. THANK YOU FOR LISTENING. I'M DONE.

>> THANK YOU, SHOSHANA FOR ALL THE COMMENTS. DEBBIE, WOULD YOU LIKE TO HEAR THE COMPROMISE OFFER OR WOULD LIKE TO SPEAK?

>> I'LL HEAR THE COMPROMISE OFFER, FIRST. AS LONG AS YOU COME BACK TO ME, PLEASE. S

>> THIS IS THE DOCUMENT THAT WAS SENT. THERE ARE MORE NOTIFICATION AND THE TREES REMOVED AND DISCUSSION OF A HEDGE A

PROPOSED HEDGE. LET ME PUT THIS IN A WAY THAT'S HOPEFULLY MORE VISUAL. I BELIEVE THIS IS A MARK UP PHOTO SHOWING THE HEDGE WAS INSTALLED OR PLANTED. SORRY, IT'S NOT CONSTRUCTION. ANOTHER PHOTO THERE'S THE DISCUSSION OF HEDGES AND PROPOSED HEDGE. THE GREEN SHOWED A PROPOSED HEDGE. THIS IS THE DOCUMENT SENT TO ME. DEBBIE.

>> FIRST, I JUST WANTED TO CONFIRM HAVING SUBMITTED AN APPLICATION FOR AN AUP THAT THE NEIGHBOR SIGNED OFF WHO SAW THE PLANS AND THERE'S BEEN A YELLOW SIGN OUT. CAN STAFF CONFIRM?

>> AS THE PROJECT STARTED AS A CODE ENFORCEMENT PLACE REPORTED BY THE NEIGHBOR AND FRANKLY WITH THE DIFFERENT PROTOCOLS EMPLOYED DURING COVID TO KEEP UP THE IMPORTANT NEIGHBOR NOTIFICATION THAT HAS BECOME BASICALLY TRANSITION WITH EVERY PROJECT. WITH THIS PROJECT BECAUSE WE WERE BRINGING IT TO THE ZONING BOARD THE NEIGHBORS WHO HAVE BEEN AFFECTED WERE INFORMED OR AWARE OF THE PROJECT FROM THE BEGINNING AND THE STRUCTURES DO EXIST, WE ACTUALLY DID NOT USE CONVENTIONAL POST CARDS OR NEIGHBOR NOTIFICATION AS THAT'S NOT TYPICALLY RECOVERS. THAT'S NOT REQUIRED BY CODE.

>> OKAY.

>> THAT'S UNFORTUNATE. SO THE OTHER THING IS WHEN YOU LOOK AT THIS DRAWING, YOU LOOK AT THE SHADOW STUDY AND THEN LOOK AT THE PLAN SHEET FIRST PAGE, THE DISTANCE BETWEEN THESE TWO STRUCTURES

AND 25 STODDARD WAY, YOU SEE THE STREET LINE THERE BUT WHEN YOU LOOK AT THE BUILDING IS NOT A STRAIGHT LINE LIKE THAT. IT'S STEPPED BACK TWICE. SO IF YOU GO BACK TO THE PICTURE YOU HAD WITH THE HEDGES, SO THERE IS ONE WINDOW WHERE THEY SHOWED THE GLARE. CAN SOMEONE CLARIFY FOR ME WHAT WINDOW THAT WAS TAKEN FROM. WAS THAT HER LIVING ROOM, BREAKFAST ROOM, DINING ROOM.

>> I WILL BRING THAT UP.

>> BELIEVE THAT'S THE LIVING ROOM.

>> IT SAYS LIVING ROOM.

>> THERE YOU GO.

>> THE LIVING ROOM SEES THE GLARE FROM WHICH OF THE STRUCTURES?

>> THE SECOND STRUCTURE.

>> THE ART STUDIO.

>> STRUCTURE 1.

>> IF YOU WERE TO LOOK AT THAT PHOTO OF THE GLARE AND THEN GO TO THE SUPPLEMENTAL DOCUMENT THAT SHOWS THE HEDGE PROPOSED HEDGE, GO DOWN ONE PAGE, KEEP GOING. DO YOU SEE WHERE IT SAYS LR. THOSE PHOTOS WERE TAKEN JUST INSIDE THE LR AND LOOK OUT ON TO PREEXISTING HEDGES AT 25 STODDARD WAY AND WHAT WE'RE PROPOSING IS IN BETWEEN OUR TWO UNITS WHICH ARE TE BLACK BOXES ON THE FAR

SCREEN LEFT, WE WOULD GET THE HEDGE TO GET RID OF THE GLARE SO IT DIDN'T SHINE IN THE PROPERTY. THE DRAWING NOT TO SCALE.

>> BUT IT'S BETTER ON THE PLANS WHICH SHOWS ONE STRAIGHT LINE. THE BUILDING IS NOT ONE STRAIGHT LINE. THIS IS HELPFUL BECAUSE THERE'S OTHER SPACE ON THE PROPERTY FROM THE KITCHEN AND I ASSUME THE EATING ROOM IS IN THE KITCHEN SHE WAS REFERRING TO AND THE ISSUE WAS THE LIVING ROOM. YOUR PROPOSAL IS HEDGE TO STOP THE GLARE, CORRECT?

>> THAT'S CORRECT.

>> ALL RIGHT, THANK YOU.

>> ANY OTHER COMMENTS FROM YOU, DEBRA?

>> NO, I'LL KEEP MY MOUTH SHUT RIGHT NOW, THANK YOU.

>> I WOULD LIKE TO MOVE TOWARDS SOME KIND OF A MOTION. I SEE HER HAND UP. ANYTHING TO RECOGNIZE?

>> THANK YOU, CHAIR. I WANTED TO APOLOGIZE TO COMMISSIONER SANDERSON FOR BRIEFLY INTERRUPTING.

>> THAT'S OKAY. I DID WANT TO ECHO STATEMENT THAT COMMISSIONER'S COLLEAGUES HAVE ALREADY STATED IT'S HARD TO ASSUME INTENTION IN A QUASI-LEGAL BODY LIKE THIS IT'S NOT OBJECTIVE I AGREE WITH THE THAT STATEMENT WE SHOULD LOOK IN THE IMPACT MEASURE AND I THINK IT'S IMPORTANT TO HAVE COMMUNICATION WITH NEIGHBORS AND

GENERALLY PROJECTS THAT DO ENSURE AND I DON'T HAVE THE TECHNOLOGY KNOWLEDGE TO SUGGEST DIFFERENT STRUCTURAL PLANS AND KEEP INTO ACCOUNT THE NEIGHBORS' CONCERN SO I'D PREFER A MOTION TO A CONTINUANCE AND I'D LIKE TO PUT THAT OUT THERE.

>> THANK YOU. BEFORE THE CHAIR STARTS I'D LIKE TO OFFER MY THOUGHTS ON THIS. MY ORIGINAL -- I AGREE FIRST WITH THE PRINCIPLE AND IT'S DIFFICULT TO USE YOUR IMAGINATION TO SAY, OKAY, WHAT IF THIS CAME BEFORE US WITH A RECOMMENDATION FOR APPROVAL FROM STAFF AND IT WASN'T BUILT YET. WOULD WE APPROVE IT? IT DOES MEET ALL THE REQUIREMENTS OF THE ZONING. IT'S NOT A HOUSING ACCOUNTABILITY ACT. THERE'S ADJUSTMENTS FOR IT WOULD WE ASK THAT THEY CONSIDER RELOCATION AND MODIFICATION AND WERE IT BEFORE US AT THE SAME TIME, WE DO HAVE INSTEAD OF STORY POLLS, ACTUAL PHOTOGRAPHS ILLUSTRATING IMPACTS AND I AGREE WITH CARRIE THAT THE PHOTOGRAPH OF THE ROOF WITH THE STARTLING GLARE THOUGH ACKNOWLEDGES IT'S ONLY A BRIEF PORTION OF THE DAY IS QUITE STARTLING AND A NEGATIVE IMPACT ON THE NEIGHBOR, WE'D WANT TO MITIGATE AT THE VERY LEAST AS WE'VE HISTORICALLY DONE BY DEMANDING REQUIRING THAT ROOF BE PAINTED WITH A NON-REFLECTIVE PAINT. AS THE SOMETHING THAT I CERTAINLY WOULD SUPPORT IN MY IMAGINATION WE'VE DONE IT BEFORE. HERE'S THE QUESTION ABOUT THE LOCATION OF THESE BUILDINGS ON THE PROPERTY, I'M NOT PARTICULARLY CONCERNED ABOUT STRUCTURE 2 WHICH IS A CONSIDERABLE DISTANCE FROM THE KITCHEN BUT I'M NOT HAPPY ABOUT THE VIEW OF

THE ROOF IN THE LIVING ROOM. THAT'S AN IMPORTANT VIEW FOR THE NEIGHBOR. I AGREE THAT THIS IS NOT ABOUT CHARACTER OR JUST ABOUT WHAT NEIGHBORS OUGHT TO DO AND WE SOMETIMES HAVE TO STEP IN AND DO IT ON BEHALF OF THEY CAN'T SEE EYE TO EYE. I WAS CONSIDERING ASKING THAT STRUCTURE ONE THE ART STUDIO THE ONE ON THE NORTH NEAR 1147 GRIZZLY PEAK BE PULLED BACK CLOSER TO THE HOUSE. THE IRONY IS IT WOULD MAKE THE CONDITION WORSE BECAUSE OF THE HEDGES. I WAS THINKING TO COMPEL THEM AND TO MAKE IT LESS BAD IN MY OPINION WOULD BE IF IT MOVED TOWARDS THE NEIGHBORS HOUSE AND DIDN'T HAVE TO RELY ON FUTURE HEDGES. THAT'S WHY I ASK THE QUESTION BECAUSE THAT'S THE QUESTION I WOULD HAVE ASKED TO THE NEIGHBOR IN THE NORTH WOULD HAVE COME TO US BEFORE IT WAS BUILT. WE DON'T WANT TO HAVE NEGATIVE IMPACT ONE NEIGHBOR OBJECTS TO FOR THE BENEFIT OF ANOTHER NEIGHBOR. IT'S SOMETHING I WOULD LIKE YOU GUYS TO CONSIDER EITHER FOR TONIGHT, PROMOTION, IF YOU WISH FOR A MOTION FOR APPROVAL OR WE COULD ASK THE APPLICANT TO CONSIDER WAYS OF MITIGATING THE PARTICULAR NOTORIOUS PHOTO BROUGHT FORTH. THAT'S THE ONE THAT DISTURBED ME THE MOST TOO. BESIDES PLANNING A HEALTH WHICH WILL TAKE A WHILE TO GROW AND MAY NEVER MATURE TO DO THE JOB. I THINK WE HAVE OTHER CONSIDERATIONS AND WOULD LIKE TO HEAR WHAT YOU THINK ABOUT THAT BEFORE MOVING FORWARD.

>> THANK YOU, CHARLES. I WOULD LIKE TO SECOND THE MOTION DOHEE JUST MADE THE EXACT MOTION I WAS ABOUT TO MAKE. THANK YOU,

DOHEE. I WOULD NOT VOTE APPROVE THIS AS-IS WERE IT COME BEFORE US AS A PLAN. CHARLES HAD HELPFUL SUGGESTIONS JUST NOW. I'M NOT AN ARCHITECT AND MORE IMPORTANTLY I DON'T HAVE A TASTE FOR REDESIGNING PROJECTS IN THIS FORMAT WHICH IS WHY CONTINUANCE IS THE BEST IDEA. NOT CLOSED MINDED TO VOTING FOR A MOTION THAT HAS SIGNIFICANT CHANGES THAT WOULD GUARANTEE NO IMPACT TO THE NEIGHBOR BUT I PERSONALLY FIND A CONTINUANCE, LETTING THE APPLICANT REDESIGN IT IN CONSULTATION WITH THE NEIGHBOR AND COMING BACK TO US WITH A MODIFIED PROPOSAL TO ADDRESS THE IMPACTS IS THE BEST COURSE OF ACTION. SO APPLICANT IF THAT'S WHAT WE DO TODAY, YOU JUST GOT SOME PRE ADVICE FROM AN EXPERIENCED ARCHITECT. THAT'S PRETTY GOOD. YOU CAN CONSULT WITH YOUR OWN AND SEE WHAT YOU THINK BUT I THINK THAT'S THE WAY TO GO IS CONTINUING POSSIBLY OFF CALENDAR BUT I THINK WE SHOULD CONTINUE IT AND LOOK AT A PROPOSAL THAT ACTUALLY ADDRESSES THESE CONCERNS.

>> SO WE HAVE A MOTION AND SECOND. DISCUSSION ON THE MOTION, CARRIE, YOUR HAND IS UP.

>> THANK YOU, CHARLES FOR YOUR UNPAID ADVICE. YOU SAID SOMETHING THIS RUNG A BELL WITH ME WHICH IS IF THERE WERE NO BUILDING AND WERE COMING TO US FOR A PERMIT WE'D REQUIRED STORY POLLS. THE STORY POLLS WOULD TELL THE STORY. NOT AS WELL AS HAVING THE BUILDINGS MAYBE BUT THEY WOULD ALLOW US TO CONSIDER WHERE ELSE

ON THE SITE WOULD BE LESS OF A DETRIMENT. AND FOR ME THE NO-BRAINER WAS TO PUT BOTH BUILDINGS ADJACENT TO THE STONE PATIO BECAUSE THEN THEY COULD TAKE ADVANTAGE OF HAVING THE MEETING SPACE OUT THERE IN FRONT OF THEM. HONESTLY IF WE'RE STARTING THIS PROPERLY WE WOULD HAVE HAD THE STORY POLLS AND WOULD HAVE HAD A DISCUSSION ON WHAT THE ROOF LINE OF THE BUILDINGS WOULD LIKE AND WHERE THEY WOULD BE PLACED AND THAT'S WHAT I'M LOOKING FOR IS SOMETHING THAT WOULD REMOVE THE DETRIMENT ALLOW THEM TO HAVE THE STRUCTURES AND I WON'T EVEN SPEAK -- SORRY. I WANT TO SAY ONE LAST THING. BACK IN THE DAY WHEN WE USED TO MEET IN PERSON, I HAD THIS LITTLE GOLDEN GATE BRIDGE MODEL I WOULD PUT IN FRONT OF ME WHENEVER WE HAD SOMETHING WITH A VIEW IMPACT. AND THIS ALTHOUGH MAY NOT HAVE A VIEW OF THE GOLDEN GATE BRIDGE, THIS NEIGHBOR SPEAKS OF BEING ABLE TO THE LIGHT THAT COMES FROM THE WEST AND THE SUN SET. AND WOULD HAVE HAD THIS COME TO US FOR A PERMIT. THAT'S ALL. THOSE ARE PROTECTED IN OUR GENERAL PLAN.

>> THANK YOU FOR ALL THE COMMENTS. I HAVE ONE MORE HAND RAISED, DEBBIE.

>> I DON'T KNOW WHERE I AM ON CONTINUING IT BUT THERE'S AN AGREEMENT BETWEEN THE PLANS AND THE PHOTO THAT I CANNOT RECONCILE IN MY MIND VISUALLY. IF THIS COMES BACK, WHEN YOU LOOK AT THE AERIAL PHOTO OR THE SHADOW STUDIES, ACCORDING TO THE AERIAL PHOTO THE STRUCTURE OF THE EXERCISE STUDIO IS -- I'M

USING MY HANDS WHICH NO ONE CAN SEE, THE EXERCISE STUDIO IS ACROSS FROM THE LIVING ROOM AND THE ART STUDIO IS FURTHER OVER. SOMETHING IS NOT ADDING UP. THE PICTURE APPEARS TO SAY IT'S LOOKING AT THE ART STUDIO BUT IN THE SHADOW STUDY, THE ART STUDIO IS QUITE A BIT A WAYS FROM THE LIVING ROOM. I DON'T KNOW WHETHER THERE'S SOME -- I DON'T KNOW WHAT'S OFF.

>> CAN I LOOK AT FOR A SECOND.

>> I DON'T WANT TO REOPEN THE PUBLIC HEARING. IT LOOKS LIKE WE'LL BE CONTINUING AND WE CAN SPEAK TO THAT IF WE DON'T APPROVE IT TONIGHT.

>> THAT'S ALL I HAD TO SAY. I FIND IT INCONSISTENT. I'M DONE.

>> THANK YOU. I HAVEN'T HEARD ANY PART OF THE COMMISSION TO VOTE ON THIS TONIGHT. WE DO HAVE A MOTION TO CONTINUE IT TO GIVE THE APPLICANT AN OPPORTUNITY TO SPEAK WITH THE NEIGHBOR AND WORK WITH THE NEIGHBOR AND SEE IF SOME POSITIVE OUTCOME CAN COME OF THAT. WHY DON'T WE GO AHEAD AND TAKE A VOTE SINCE THERE'S NO OTHER MOTIONS ON THE FLOOR AND SEE WHERE WE STAND.

>> CAN WE CLARIFY IF THIS IS OFF CALENDAR OR TO DATE CERTAIN?

>> WHO MADE THE MOTION?

>> I DID.

>> DO YOU PREFER TO THIS TO BE A DATE CERTAIN OR A MONTH OUT OR TWO MONTHS OUT OR A DATE WHEN THE APPLICANT IS PREPARED TO RETURN? BY ME AS THE MOTION MAKER.

>> IF YOU HAVE RECOMMENDATIONS TO THE MOTION MAKER ON THAT -- WE'D LOVE TO HEAR THEM.

>> I WANTED TO GIVE SPACE TO OTHER BOARD MEMBERS IF THEY HAD AGREEMENTS. I'M FINE WITH IT BEING OFF CALENDAR.

>> IT'S UP TO THE APPLICANT TO ASK FOR THE NEW HEARING AND

>> I AGREE.

>> THAT'S THE MOTION BEFORE US. GOOD CAN WE TAKE ROLL CALL.

>> CAN YOU MAKE AN AMENDMENT.

>> YOU CAN OFFER ONE.

>> I'D LIKE TO OFFER AN AMENDMENT THAT IT NOT BE PUT OFF CALENDAR BUT ON CALENDAR FOR THE REASON THAT THE NEIGHBORS ARE WORKED UP, PEOPLE ARE GOING TO -- IF IT'S ON CALENDAR THEN THERE IS AN INCENTIVE FOR EVERYONE TO WORK TOGETHER AND NOT WAIT AND WAIT AND WAIT AND CONTINUE IT ON. I WOULD PREFER IT BE ON CALENDAR TO A DATE THAT IS REASONABLE AND THERE IS ROOM FOR NEGOTIATOR I DON'T KNOW IF STAFF HAS RECOMMENDED NEGOTIATION WITH THESE NEIGHBORS BUT I CAN SEE WHY HAVING THE APPLICANT AND THE OCCUPANT TALKING DIRECTLY MAY BE DIFFICULT.

>> MEDIATE LAND USE FOR SMALL PROJECTS AND PICK A DATE CERTAIN SIX WEEKS TO TWO MONTHS AWAY SO WE GET SOME CLOSURE ON THIS AND BOTH PARTIES KNOW THEY HAVE TO TALK TO EACH OTHER AND CAN'T JUST WAIT AROUND.

>> IS PART OF THE RECOMMENDATION THE TWO PARTIES AGREE TO MEDIATION --

>> WE CAN'T FORCE THEM TO.

>> THAT'S MY RECOMMENDATION, DATE CERTAIN TWO MONTHS AND CONSIDER THE POSSIBILITY OF USING A MEDIATOR TO FIND SOME RESOLUTION AND THEN WHEN IT COMES BACK, WE NEED SOME CLARIFICATION ON THE RELATIONSHIP OF THESE TWO BUILDINGS TO 25 STODDARD.

>> TO BE CLEAR, THE AMENDMENT TO YOUR RESOLUTION WOULD BE DATE CERTAIN OF TWO MONTHS FROM TODAY THEY WOULD COME BACK AND THE RECOMMENDATION IS SEEK MEDIATION BUT NOT A REQUIREMENT AND THE MATERIALS THAT WE REVIEWED DO PROVIDE AN ACCURATE RENDERING OF THE RELATIONSHIP OF THE MALCONTENT NEIGHBOR WITH THE STRUCTURES. IS THAT ACCEPTABLE TO YOU AS THE MAKER OF THE MOTION?

>> WOULD IT BE POSSIBLE TO STICK WITH THEM BUT INCLUDE THOSE CONDITIONS OF MAKING SURE THEY MEDIATE WITH EACH OTHER?

>> WE CAN'T MAKE SURE THEY MEET.

>> I WOULD LIKE TO HEAR THE SECONDER.

>> OKAY.

>> SHOSHANA WHAT'S WERE OPINION?

>> I AGREE WITH DEBRA AND I WASN'T THINKING ABOUT THIS CLEARLY SO THANK YOU FOR BRINGING IT UP AND CHANGED MY MIND. HERE'S MY THINKING AND TELL ME IF YOU AGREE OR NOT. NORMALLY, WHEN A PROJECT HAS YET TO BE BUILD WHAT IS WHAT WE'RE IMAGINING THAT'S HAPPENING THERE'S A STRONG INCENTIVE FOR THE APPLICANT TO MOVE FORWARD AS QUICKLY AS POSSIBLE BECAUSE THEY WANT TO GET THEIR PROJECT BUILT. HOWEVER, THAT'S NOT THE CASE HERE BECAUSE THE PROJECT'S ALREADY BUILT, THEIR INCENTIVE IS TO DRAG IT OUT. THEY'RE NOT EAGER TO SPEND THIS MONEY THEY'LL HAVE TO SPEND TO MOVE IT OR ALTER IT IN SOME WAY. SO IN ALL THAT TIME THAT THEY'RE HAVING THIS EXISTING STRUCTURES IN PLACE, THE NEIGHBOR IS BEING IMPACTED.

>> IT COULD BE 2092.

>> I THINK BECAUSE OF THE SPECIFIC FACT OF THIS CASE WE SHOULD PUT PRESSURE ON THE APPLICANT TO MAKE A DECISION SOONER AND TWO MONTHS SEEMS REASONABLE AND I WOULD SUPPORT THAT BUT WHAT DO YOU THINK?

>> THANK YOU, SHOSHANA AND DEBRA FOR PROVIDING YOUR THOUGHTS. I DO WANT CONTINUANCE BUT WITH A BIT SURE THE BEST ROUTE. I'M AMENABLE TO BRINGING IT TO CALENDAR. I THINK OCTOBER 14 MAY BE

TOO SOON BECAUSE WE'LL REBOUND TO NOTICE THAT IN A COUPLE WEEKS. THAT MEANS OCTOBER 28 AND THERE'S NO MEETINGS IN NOVEMBER AND WE HAVE ONE MEETING IN DECEMBER ON DECEMBER 9TH. IF YEAR TRYING TO MEET DECEMBER 9 IS PROBABLY THE --

>> OOMPH.

>> SAY THE DATES AGAIN.

>> OCTOBER 28 OR DECEMBER 9.

>> THANK YOU. DEBRA, YOU'RE THE PRO. WHAT DO YOU THINK?

>> I THINK WE HAVE TO GO TO THE DECEMBER MEETING AS MUCH AS I'D LIKE CLOSURE ON THIS SOONER BUT IF THERE'S NO MEETING IN NOVEMBER, I THINK OCTOBER'S TOO SOON.

>> I AGREE.

>> I KNOW WE HAVE A TIME CRUNCH AND I LOOKED AT THE RELATIONSHIP BETWEEN THE HOUSE AND YARD AND ACTUALLY IT'S REALLY HELPFUL. IT HAS ONE OF THE FOUNDATIONS ON IT. WE WERE GIVEN ATTACHMENT NUMBER TWO, 1 OF 15 AND -- IT'S NOT RIGHT.

>> AS LONG AS WE'RE ASKING SINCE DEBRA BROUGHT IT UP, THANK YOU VERY MUCH, CAN WE HAVE A PLAN FOR THE NEIGHBORING HARD AND STRUCTURES SO WE KNOW, APPLES ARE APPLES.

>> I THINK THAT'S A CONDITION OF THIS MOTION.

>> SORRY, I WAS LOOKING AT GOOGLE MAPS. I SHOULD DO MY JOB.
LET'S CLOSE IT OUT TO MOVE ON.

>> DOUGH WE HAVE CLARIFICATION NOVEMBER VERSUS DECEMBER.

>> THIS IS FOR 1151 GRIZZLY PEAK TO CONTINUE TO 12/9 WITH THE
RECOMMENDATION THE APPLICANT AND NEIGHBOR SEEK MEDIATION AND
THAT THEY CLARIFY THE RELATIONSHIP BETWEEN THE STRUCTURES AND
PROVIDE MORE ACCURATE PLANS.

>> CORRECT.

>> BOARD MEMBER OLSON.

>> YES.

>> BOARD MEMBER DUFFY.

>> YES.

>> BOARD MEMBER GAFFNEY, YES.

>> BOARD MEMBER SANDERSON.

>> YES. BOARD MEMBER KIM.

>> YES.

>> VICE CHAIR O'KEEFE.

>> AND CHAIRPERSON.

>> YES.

>> THE MOTION CARRIES UNANIMOUSLY. I HOPE THAT YOU GUYS CAN HAVE A MEETING OF THE MINDS AND WE'LL SEE WHAT HAPPENS AND WE'LL SEE YOU DECEMBER 9.

>> THANK YOU FOR YOUR TIME.

>> YOUR WELCOME. YOU'LL GET MORE OF IT IN A FEW MONTHS. LET'S GO TO OUR NEXT ITEM THEN, LAST ITEM FOR TONIGHT THOUGH WE HAVE SOME ADMINISTRATIVE ISSUES AS WELL, THIS IS 2956 HILLEGASS AVENUE AND WHO IS OUR PLANNER?

>> GIVE US A SUMMARY OF YOUR STAFF REPORT.

>> GOOD EVENING. I'LL SHARE MY SCREEN. OKAY. ALL RIGHT. IS MY SCREEN SHARING?

>> YES.

>> OKAY. GOOD EVENING, MEMBERS. THE PROJECT BEFORE YOU IS AT 2956 HILLEGASS AVENUE. IT IS IN THE SINGLE FAMILY RESIDENTIAL DISTRICT R1 AND MAJORITY OF THE SURROUNDING USE RESIDENTIAL. THE AVENUE AND COLLEGE AVENUE ARE COMMERCIAL DISTRICTS WITHIN CLOSE PROXIMITY. THE MEDICAL CENTER IS ONE BLOCK WEST TO THE SUBJECT PROPERTY. THE PROJECT IS --

>> I WASN'T AWARE THIS IS AS CLOSE TO MY HOUSE AS IT IS. I'M REMOVING MYSELF FROM THE DISCUSSION. SHOSHANA, YOU'RE IN CHARGE.

>> OKAY. COOL.

>> I'M GOING TO MUTE MYSELF.

>> I'LL MOVE YOU BACK AS AN ATTENDEE.

>> IT'S A GOOD THING TO BE CAREFUL ABOUT THAT BECAUSE THERE WAS ONE CLOSE TO MY HOUSE BUT I HAD NO AWARENESS OF IT.

>> SHOSHANA CAN YOU TEXT ME WHEN YOU'RE READY FOR ME TO COME BACK?

>> I WILL.

>> THANK YOU.

>> THANK YOU, CHARLES. ANYWAY, LONG STORY SHORT, IT DIDN'T SEEM TO MATTER BUT I RECUSED MYSELF AND SOMEONE CUT DOWN A TREE AND I COULD SEE IT AND GLAD I PART OF THE IT BECAUSE IT WOULD HAVE BEEN INAPPROPRIATE. IT'S AN IMPORTANT ROLE WE HAVE. STAFF REPORT.

>> OKAY. THE MONTH IS THE ADDITIONAL OF 170 SQUARE FOOT THIRD FLOOR BALCONY SO THE EXISTING FAMILY DWELLING. A USE PERMIT IS REQUIRED BECAUSE THE ADDITION IS ON A SITE NON-CONFORMING FOR LOT COVERAGE AND AN AUP IS REQUIRED BECAUSE THE ADDITION IS OVER 14 FEET IN HEIGHT. THE EXISTING LOT COVERAGE IS AT 43% WHICH IS OVER THE ALLOWABLE LOT COVERAGE FOR THE ZONING DISTRICT BY 3%. HOWEVER, THE PROPOSED BALCONY WOULD NOT [INDISCERNIBLE] THE BUILDING HEIGHT. IT WOULD BE LOCKED APPROXIMATELY 16 FEET ABOVE GRADE AND THE GUARDRAIL. THIS WOULD INCREASE THE OVERALL HEIGHT

OF THIS PORTION OF THE BUILDING TO APPROXIMATELY 20 FEET AND THAT'S TO THE TOP OF THE RAILING. THE BALCONY WOULD BE LOCATED OUTSIDE THE REQUIRED REAR AND SETBACK. NOTE THE AVERAGE HEIGHT OF THE DWELLING IS 22'3". THIS AVERAGE HEIGHT CAN BE INCREASED TO A MAXIMUM OF 35 FEET IN THE ZONING DISTRICT WITH AN AUP. SINCE THE PROPOSED BALCONY WOULD BE LOCATED OUTSIDE ALL THE REQUIRED SETBACKS AND SEPARATED FROM THE CLOSEST NEIGHBOR PROPERTY AT 2954 HILLEGASS AVENUE BY APPROXIMATELY 15 FEET, IT'S NOT EXPECTED TO CREATE DETRIMENTAL IMPACT TO PRIVACY OF THE NEIGHBORING DWELLINGS. THOUGH THE ADDITION WOULD INCREASE THE HEIGHT OF THE BUILD REAR, THE ROOF LINE WOULD BE LOWER THAN THE DWELLING ROOF LINE AND WITHOUT NOT IMPACT THE MAXIMUM HEIGHT OR EXCEED THE HEIGHT LIMIT AND SUNLIGHT AND AIR AND IMPACT TO SURROUNDING PROPERTY DUE TO THE PROJECT WOULD NOT BE DETRIMENTAL. BECAUSE OF THE PROJECT'S CONSISTENCY WITH THE ZONING ORDINANCE AND GENERAL PLAN AND MINIMAL IMPACT ON SURROUNDING PROPERTIES, STAFF RECOMMEND THE ZONING ADJUST BOARD APPROVE THIS WITH THE PLANS AND CONDITIONS. I BELIEVE THE ARCHITECT IS AVAILABLE.

>> ARE THERE ANY QUESTION FOR STAFF AT THIS TIME? NO ONE FROM THE BOARD IS RAISING THEIR HANDS SO I TAKE IT NO QUESTIONS FROM STAFF. LET'S HEAR FROM THE APPLICANT. APPLICANT, ONCE WE CAN HEAR YOUR VOICE, YOU'LL HAVE FIVE MINUTES.

>> GREAT, THANK YOU. CAN EVERYBODY HEAR ME?

>> WE CAN.

>> THE TIMER'S SET UP.

>> THANK YOU. I CAN SHARE MY SCREEN I UNDERSTAND. I CAN PUT ME ON VIDEO. THAT'S ME AND I'D LIKE TO SHARE MY SCREEN. CAN PEOPLE SEE IMAGES? GREAT. THANK YOU. WELL, THANK YOU, VERY MUCH. I'M EDWARD BUCHANON THE PROJECT ARCHITECT FOR THIS PROJECT AT 2956 HILLEGASS. THIS IS TO ADD A ROOF DECK OFF THE MASTER BEDROOM AT THE REAR OF THE HOUSE AND THE PROVED ROOF DECK WILL PROVIDE SUNNY OUTDOOR SPACE ON A LOT WITH LITTLE OUTDOOR SPACE ON THE GROUND. LOCATED AT THE REAR OF THE HOUSE, THE DECK IS PRIMARILY DIRECTED WEST AND ONLY ACCESSED THROUGH THE MASTER BEDROOM WHICH MEANS THIS IS A PLACE FOR THE OWNERS TO QUIETLY ENJOY A CUP OF COFFEE OR GLASS OF WINE BUT NOT AN INTENSE USE TYPE OF SPACE. THERE ARE NO VIEWS TO IMPACT WITH THIS PROJECT, IT'S IN A DENSE URBAN NEIGHBORHOOD AND BECAUSE THE DECK WILL BE BUILT ON TOP OF AN EXISTING ROOF THE ONLY REAL ADDITION IS THAT OF A GUARDRAIL AND IT'S AN OPEN GUARDRAIL AND NO IMPACT FOR NEIGHBORS' ACCESS TO AIR AND LIGHT. BECAUSE OF THE DISTANCE BETWEEN THE STRUCTURE AND THE EXISTING HOMES LARGER FORM, THE ONLY ADDING SHADOWS ARE CAST FROM THE OPEN GUARDRAIL ON TO THE ADJACENT DRIVEWAY TO THE NORTH. IT'S VERY NEGLIGIBLE. PRIVACY IS ALWAYS A CONCERN IN PROJECTS LIKE THIS AND THERE'S ALWAYS A MUTUAL DESIRE TO

PRESERVE IT. FROM THIS VIEW, YOU CAN SEE IN THIS AREAL VIEW THERE'S A NEIGHBORHOOD PATTERN ALREADY WITH ADJACENT REAR NEIGHBORS ALL HAVING SIMILAR UPPER FLOOR ROOF DECKS INCLUDING THE NEIGHBORS TO THE NORTH RIGHT HERE. THIS IS ESSENTIALLY SETTING A STANDARD FOR NEIGHBORHOOD PRIVACY AND IN THIS REGARD APPROVING THIS DECK WOULD SIMPLY BE ALLOWING MY CLIENTS TO ENJOY THE SAME RIGHTS AS THEIR NEIGHBORS. THE NEIGHBOR TO THE NORTH AT 2954 HAS THE VIEW IS ABOUT 17 FEET AWAY FROM THE DECK AND THE VIEW IS OF THE DRIVEWAY AND THE ENTRY PORCH ON THE GROUND LEVEL AND A SECONDARY REAR BEDROOM WINDOWS HERE AND SUN PORCH AT THE UPPER LEVEL. THROUGHOUT MUCH OF THE YEAR, AS WE'VE BEEN BY IN THE PROPERTY, THEY HAVE SHADES DRAWN PRESUMABLY BECAUSE OF THE SUNNY ORIENTATION AND TO PROTECT THEIR OWN PRIVACY. THERE'S NO CASUAL DIRECT VIEW IN THE NEIGHBORS MASTER BEDROOM WHICH IS THIS AREA UP HERE. UNLESS YOU WALK TO THE FAR CORNER AND LOOK BACK TOWARDS THE HOUSE. IT'S NOT A CASUAL EASY THING TO DO AND THE DECK IS ORIENTED TO THE WEST AND TO ENSURE PRIVACY MY CLIENTS ARE PROPOSING SCREENING PLANT TO THE NORTH AND SOUTH SIDE OF THE DECK TO SOFTEN THE EDGE AND CREATE THE VISUAL PRIVACY BETWEEN THEM AND NEIGHBORS TO THE NORTH AND TO THE SOUTH. SIMPLY TO CONCLUDE, I JUST WANT TO POINT OUT ALL IMPROVEMENT SO FAR SO THIS PROPERTY HAVE BEEN PERMITTED PROPERLY AND GONE THROUGH ALL THE RIGHT CHANNELS AND SIGNED OFF. THIS IS THE ABUNDANCE OF LETTERS FROM MOST THE NEIGHBORS ENJOY STRONG SUPPORT AND HAS

MINIMAL IMPACT TO SURROUNDING NEIGHBORS AND PROVIDES THE VERY MUCH NEEDED, VERY USEFUL OUTDOOR AREA ON A SMALL LOT. THAT'S ALL I HAVE.

>> THANK YOU VERY MUCH. ARE THERE ANY QUESTIONS FOR THE APPLICANT AT THIS TIME? ALL RIGHT. YOU GUYS ARE SO QUIET. ALL RIGHT. THANK YOU, APPLICANT. AS BEFORE, WE'LL GO AHEAD AND NOW TURN OUR ATTENTION TO MEMBERS OF THE PUBLIC. I'LL GIVE THEM A CHANCE TO SPEAK AND THEN APPLICANT, YOU'LL HAVE A CHANCE TO COME BACK AND RESPOND TO ANYTHING SAID OR ADD ANY LAST COMMENTS AFTER WE HEAR FROM THE PUBLIC.

>> GREAT.

>> THANK YOU. SO ATTENDEES, IF YOU WOULD LIKE TO SPEAK ON THIS PROJECT, NOW IS THE TIME TO RAISE YOUR HAND AND I WE HAVE SIX HANDS UP. THAT'S GREAT AND ONCE AGAIN I'LL REMIND YOU TO PRESS STAR 9 IF YOU'RE JOINING BY PHONE IF YOU'D LIKE TO SPEAK AND I WILL CALL ON THE MEMBERS OF THE PUBLIC IN THE ORDER THEY RAISED THEIR HANDS. EACH MEMBER GETS TWO MINUTES. WE HAVE A TIMER UP. HOPEFULLY YOU CAN SEE IT AND FIRST I'LL RECOGNIZE DANA SACK.

>> THE LETTERS YOU RECEIVED FROM NEIGHBORS NONE ARE IMPACTED BY THE DECK ONLY 2954 AND THE NEIGHBORS ON WEBSTER STREET WOULD BE IMPACTED BY THE DECK BECAUSE IT'S IN THE BACK. THERE'S VERY LITTLE CHANGE TO THE FRONT OF THE HOUSE SO THE COMMENTS ARE REALLY IRRELEVANT. ONE COMMENTER IS FROM OAKLAND, TWO IS FROM

PIEDMONT AVENUE, ONE IS A BLOCK AWAY. THESE ARE PEOPLE NOT IMPACTED ANYWAY. THOSE ARE NOT HONEST COMMENTS. THE APPLICANT YOU SAW THE DOORS OVER THE FUTURE DECK OVER THE ROOF. THOSE WERE INSTALLED WITHOUT PERMITS IN RESPONSE TO THE NEIGHBORS AT 2954, BARBARA AND MARK TELLING NEIGHBORS IT WAS DANGEROUS TO HAVE DOORS ON A ROOF WITHOUT RAILING. THEY PUT UP A GRILL TO KEEP THE DOORS FROM OPENING AND MADE THIS APPLICATION. CLEARLY THEY WERE PLANNING TO BUILD THAT DECK WITHOUT PERMITS. THE OTHER THING THEY DID BESIDES THAT WAS MR. STAR SENT A LETTER TO BARBARA'S HUSBAND, MARK, IN FRANCE, ACCUSING HER OF INFIDELITY AND ADULTERY INCLUDING A PICTURE OF A MAN STANDING AT THE FRONT DOOR OF THE HOUSE WHICH YOU ALSO SAW A PICTURE OF IN THE ARCHITECT'S PRESENTATION. I'M THE LAWYER WHO IS PROSECUTING THE DEFAMATION LAWSUIT OVER THAT FOR INVASION OF PRIVACY. YOU'RE BEING ASKED TO TRUST PEOPLE WHO DID SUSPECT A HEINOUS ACT VIOLATION OF PRIVACY FROM THEIR YARD POINTING THE CAMERA AT THE FRONT DOOR AND YOU WANT TO GIVE THE SAME PEOPLE A DECK THAT LOOKS INTO BARBARA AND MARK'S BEDROOM? THAT'S WAY BEYOND THE PALE. THANK YOU.

>> THANK YOU. I JUST WANT TO SIGH BEFORE WE GONE, MEMBERS OF THE PUBLIC HAVE THE RIGHT TO SPEAK ABOUT WHATEVER THEY'D LIKE SO WE'RE NOT GOING TO CENSOR YOU BUT CAUTIONARY ADVICE, COMMENTS ABOUT PEOPLE'S CHARACTER OR INTENTIONS HAVE VERY LITTLE RELEVANCE TO THIS HEARING. WE ARE HERE TO TALK ABOUT THE PERMIT APPLICATION IN FRONT OF US AND THAT'S IT. IT COULD BE FROM A

VERY GOOD PERSON OR BAD PERSON IN TERMS OF OUR DECISION MAKING. I WANT TO SAY THAT FOR EVERYONE, DO YOUR BEST TO KEEP YOUR COMMENTS RELEVANT TO THE DECISIONS WE'RE MAKING. THANK YOU. NEXT UP WE HAVE BARBARA. BARBARA. YOU HAVE TWO MINUTES ONCE WE HEAR YOUR VOICE.

>> THANK YOU VERY MUCH. I'M 71 YEARS OLD AND ON THE FACULTY ON U.K. BERKELEY AND WE HAVE LIVED AT 2945 FOR 30 YEARS IN PEACE AND HARMONY UNTIL RECENTLY. THE GOAL OF THE OWNERS OF 2956 AND WE AGREED TO THE LAST CHANGE BECAUSE THERE WOULD BE NO IMPACT AND THE PICTURE FROM THE ARCHITECTS ARE PICTURES TAKEN AFTER THEY ALREADY MODIFIED THE BACK SIDE OF THEIR HOUSE TO PUT FLATTEN THE ROOF AND PUT THESE SLIDING DOORS. THEY DID THAT IN A STEALTHY DEVELOPMENT SELECTIVE DISCLOSURE OF INFORMATION BECAUSE IT'S DETRIMENTAL TO US AND I WON'T TALK ABOUT THE CHARACTER. AS DANA SAID, AS WE PUSHED BACK ON THE IMPACT FOR PLANS THEY BECAME AGGRESSIVE AND VINDICTIVE AND TRYING TO DEFAME US AND THIS MAY BE A PROJECT FOR QUIET LIVING BUT THE NEW OWNERS HAVE BEEN CONDUCTING LOUD CONVERSATIONS ON THE PORCH SOMETIMES LATE AT NIGHT. SOMETHING WE NEVER HAD TO PUT UP WITH FROM PREVIOUS OWNERS. ONE MORE THING, THIS IS NOT LOOKING JUST INTO OUR BEDROOM AND IT'S NOT A SUNROOF, IT IS MY HOME OFFICE WHERE I WORK EVERY MORNING, SOMETIMES IN THE EVENING AND ALSO ON THE WEEKEND. IT'S NOT JUST A SUN ROOM. THANK YOU VERY MUCH.

>> THANK YOU VERY MUCH.

>> NEXT UP, WE HAVE ANDREA CAROL.

>> HELLO. GOOD EVENING. I'M ANDREA CAROL AND I AM A NEIGHBOR. I LIVE ACROSS THE STREET. MY FAMILY MOVED ON TO HILLEGASS IN 1976 AND HAVE BEEN HERE EVER SINCE. IN THE LAST 50 OR SO YEARS WE'VE SEEN A LOT OF CHANGES TO OUR BLOCK BETWEEN WEBSTER AND ASHBY AND NOT ALL HAS BEEN GOOD BUT I HAVE TO TELL YOU THE STARRS DESPITE THE PANDEMIC HAVE DONE AN AMAZING JOB TO TURN A VERY SEISMICALLY UNSOUND AGING, CRAMPED HOME INTO A BEAUTIFUL FAMILY HOME ABOVE AND BEYOND WHAT THEY NEEDED TO DO. AND THE TINY DECK AND IT REALLY IS VERY SMALL THAT'S GOING TO GO OFF THEIR PRIVATE MASTER BEDROOM IS NOT GOING TO IMPACT THE PRIVACY OF ANY OF THE NEIGHBORS. I HAVE BEEN IN THEIR MASTER BEDROOM TO VERIFY THIS. I ALSO HAD SPENT TIME IN THE HOME BEFORE THEY WERE OWNERS AND THE LARGE DECK THAT USED TO SPAN THE ENTIRE BACK OF THE HOUSE HAS BEEN REMOVED AND IT ACTUALLY IS EVEN LESS INTRUSIVE THE WAY THEY'RE IMAGINING THE SMALL BALCONY. AGAIN, I CAN'T TELL YOU ENOUGH ABOUT HOW BEAUTIFUL THE HOME HAS TURNED OUT AND I REALLY LOOK FORWARD TO THEM BEING ABLE TO FINISH THIS PROJECT AND LIVE WITH THEIR FAMILY THERE. THANK YOU.

>> NEXT UP WE HAVE JOHN BUTERAS.

>> CAN YOU HEAR ME?

>> YES, JOHN GUTIERREZ, ATTORNEY REPRESENTING BARBARA AND MARK
NOT IN THE MATTER DANA IS HERE TO SPEAK ABOUT.

To: City of Berkeley Zoning Adjustment Board

CITY OF BERKELEY - CITY CLERK
2021 OCT 4 PM 12:13

Berkeley, 10/02/2021

Dear Zoning Adjustment Board,

We are writing to appeal your decision to approve use permit #ZP2021-0068 for the addition of a 170 square foot third-floor balcony to the rear of the 2956 Hillegass Ave property.

Applicants at 2956 Hillegass have been doing major construction on their property, adding features that were **not** in the original plans which neighbors signed off on 2 years ago (November 2019), in a piecemeal manner.

The property at 2956 is on a small key lot and is already over lot coverage. The proposed balcony is large (170 sqft) and acts as a deck rather than a balcony. The nuisance that will result from this balcony project will strongly affect 3 neighbors (2954 Hillegass, 2523 Webster, and 2525 Webster), whose properties are contiguous to the applicant's backyard.

Misrepresentation at the ZAB hearing:

- At the 09/15/2021 hearing, the applicants' architect showed sketches of the rear side of the house claiming they corresponded to the "original" situation, when in fact the third floor elevation windows (now sliding doors) and the steep roof beneath them (now a flat roof) were modified in February 2021, **before** the permit application was filed for the balcony (see Appendix 1). In fact, these planned changes and actions were intended to request approval for a balcony after the major house construction was completed.
- The applicants installed a large H-VAC unit on a platform on the south end of their third floor back elevation, without any screen (see photos starting page 6 of Appendix 1). This was also not in the original construction plans.
- The applicants' architect minimized the impact of the balcony by representing the home office of 2954 Hillegass, heavily used for remote work, and no more than 15 feet from the proposed balcony, as a "sunroom".
- Meanwhile, many "neighbors", most of them living several blocks away, sent emails and voiced support for the balcony project, even though **none of their properties had any proximity** with the rear of 2956 Hillegass. Privacy and sound nuisance from the proposed rear deck and backyard does not affect neighbors who are not directly contiguous. These supporters commented on the exterior and interior beauty of the house, while apparently unaware of, or omitting to mention that:
 - the beautiful tree that provided effective screening between all 4 properties (2523 Webster, 2525 Webster, 2954 Hillegass and 2956 Hillegass) had been cut down without consultation with the affected neighbors.

- new, poor quality fences had been raised where no such fence stood previously, both on the street side and at the back of the applicants' property, and all the landscaping bushes in the front of the house were gone.

- The applicants' architect pointed out that the other properties also had balconies.
 - Indeed, 2954 Hillegass has a large balcony/deck in the rear of the house on the 2nd floor. The difference is: 1) immediately in front of this deck, beyond the backyard of 2954 Hillegass, on the west side, there is a parking lot. On the north side, there is a thick line of trees that provides an effective screen to the next property backyard. The balcony only overlooks one backyard, on the southside (2523 Webster) but from a larger distance, and 3) the deck is not used for entertainment, and rarely used at all.
 - The balcony at 2523 Webster is much lower, and there is no view from it onto the backyard of either 2525 Webster, 2956 Hillegass or 2954 Hillegass.
 - The balcony at 2525 Webster has been transformed into an enclosed sunroom.

Impact

The 3rd floor balcony **will substantially impact the privacy and peace** of all 3 neighbors (2523 Webster, 2525 Webster and 2954 Hillegass):

- It looms high over the backyards of 2523 and 2525 Webster, and is at most 15 feet from the home office and one of the bedrooms of 2954 Hillegass.

- It will create noise nuisances detrimental to all, and particularly to those of us working from home (or present at home) a substantial part of the time. The noise nuisance is anticipated based on past behavior of the applicants, who have shown no consideration for others during the major construction work (e.g. not providing advance warning for periods of excruciating construction work). The applicants, through their architect, have indicated their intention to use the balcony for recreation, which undoubtedly will result in loud conversations, possibly late at night.

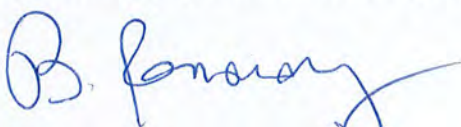
Conclusion

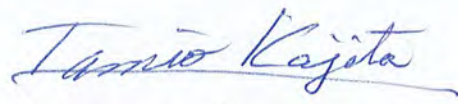
All these actions and plans only benefit the applicants. Having a small lot and less open space is not a hardship that justifies being granted a large balcony. All the adjacent neighbors lose their privacy and peace for one property.

We also object to ethically questionable tactics by which the applicants (1) did not fully disclose their entire project at the design stage, (2) had all neighbors sign off on an initial relatively low impact plan, and (3) later stealthily added features that have impact on the peace and privacy of the closest neighbors.

Counter proposal:

We suggest using the proposed 170 square foot space to build a **sunroom**, rather than a balcony, enclosed with walls on all sides and covered, to minimize privacy and noise impact on the 3 neighboring properties affected by the project.


BARBARA ROMANOWICZ
2954 HILLEGASS AVE
BERKELEY 94705

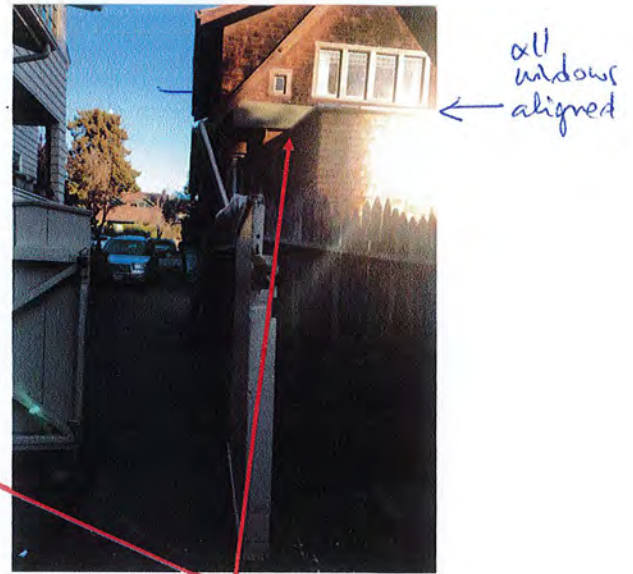
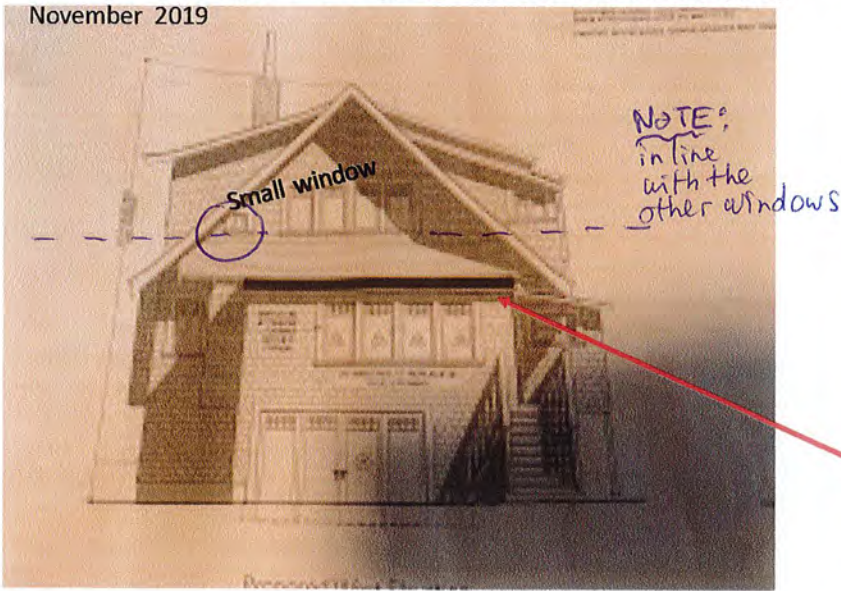

TAMIO KAJITA
2523 WEBSTER ST 553
BERKELEY, CA 94705

Appendix 1
to Appeal letter for
Use permit # 2P2021-0068

2956 HILLEGASS back elevation
before February 2021

CITY OF BERKELEY - CITY CLERK
2021 OCT 4 PM 12:13

Back of 2956 Hillegass from originally approved construction plans,
November 2019



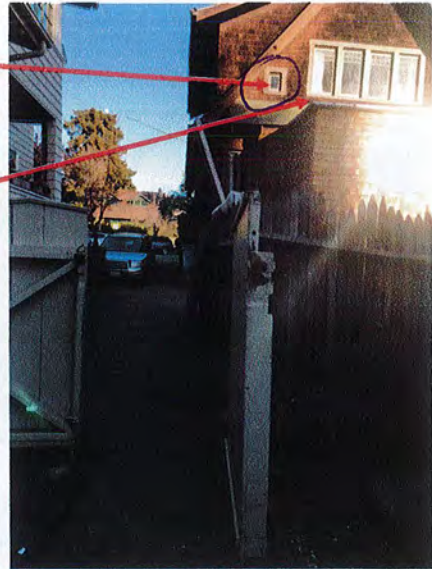
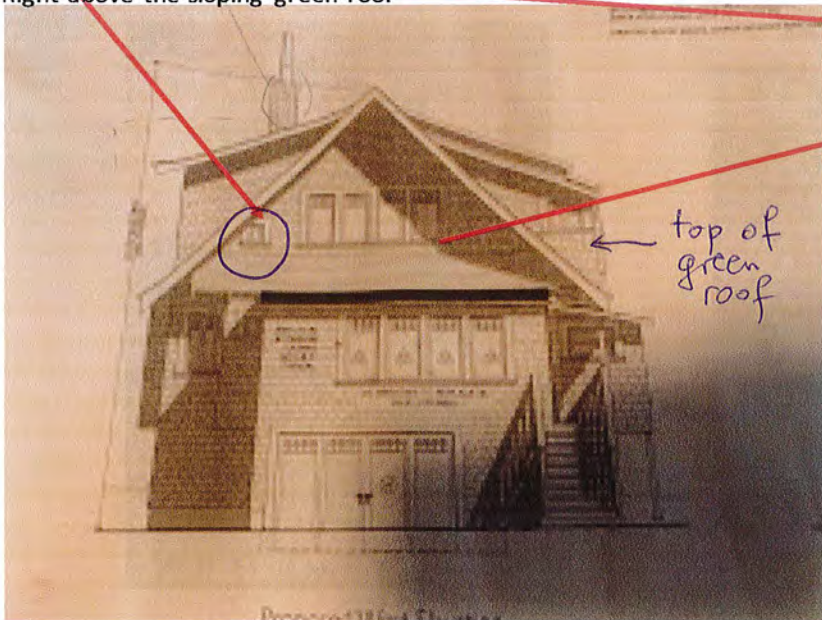
(as part of an email from Adam Starr to Barbara Romanowicz Dated Nov 23, 2019). It conforms to the appearance of the back Of 2956 Hillegass before removal of $\frac{3}{4}$ of the steeply dipping green roof and installation of sliding doors on top of the flat roof that is barely visible because it is in line of sight

The almost horizontal roof was partly covered by the small steeply sloping roof, which extended all across the back elevation

- 2 -

2956 HILLEGASS BACK ELEVATION BEFORE FEBRUARY 2021 (some other details)

Small window: its bottom aligns with bottom of 4 panel elevation window,
Right above the sloping green roof



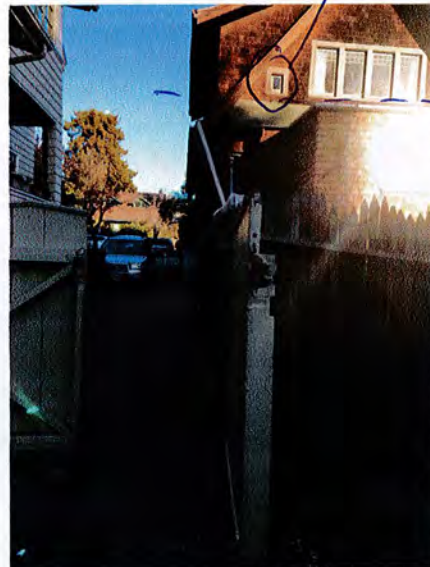
Steeply sloping green roof reaches right under the small window and the 4 paneled larger window pane. Note that the bottom of those windows is at the same level as the bottom of the little window on the left

2956 HILLEGASS BACK ELEVATION BEFORE FEBRUARY 2021

Small window

Before February 2021

View of green steep roof and 4-pane windows in 2006



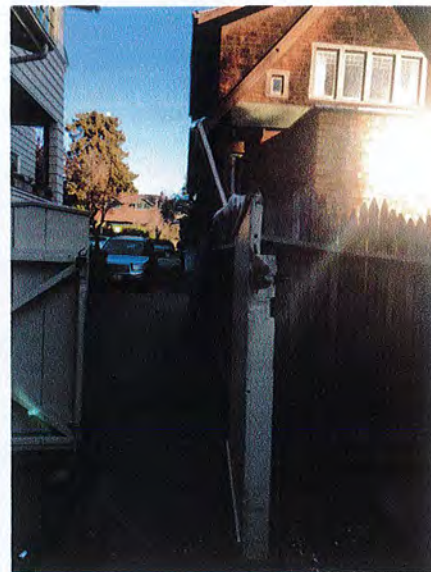
4 -

2956 HILLEGASS BACK ELEVATION INSTALLATION OF SLIDING DOORS IN FEB. 2021

Installation of sliding doors in February 2021



Before the construction

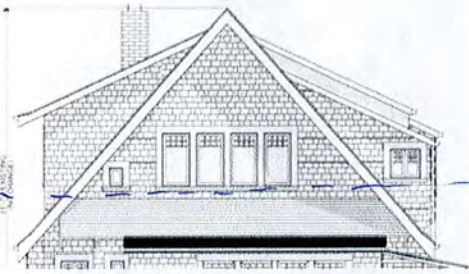


Only a small portion of the green roof is left
The bottom of the opening for the sliding doors is now well below the bottom of the small window on the left

2956 HILLEGASS BACK ELEVATION
AFTER REMOVAL OF STEEP ROOF
AND SLIDING DOOR INSTALLATION

After the fact, February 12, 2021

Original plans as approved



Note the lack of any safety barriers on the sliding doors

Current view of flat roof at 2956 Hillegass from 2954 Hillegass 2nd floor bedroom

New HVAC unit





Administrative Record
ZAB Appeal:
2956 Hillegass Ave.

This attachment is on file and available for review upon request from the City Clerk Department, or can be accessed from the City Council Website.

City Clerk Department
2180 Milvia Street
Berkeley, CA 94704
(510) 981-6900

or from:

The City of Berkeley, City Council's Web site
<http://www.cityofberkeley.info/citycouncil/>

**NOTICE OF PUBLIC HEARING – BERKELEY CITY COUNCIL
PUBLIC PARTICIPATION BY REMOTE VIDEO ONLY**

ZAB APPEAL: 2956 HILLEGASS AVENUE, USE PERMIT #ZP2021-0068

Notice is hereby given by the City Council of the City of Berkeley that on **TUESDAY, FEBRUARY 8, 2022 at 6:00 P.M.** a public hearing will be conducted to consider an appeal of the decision by the Zoning Adjustments Board 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.

A copy of the agenda material for this hearing will be available on the City's website at www.CityofBerkeley.info as of **JANUARY 27, 2022**. **Once posted, the agenda for this meeting will include a link for public participation using Zoom video technology.**

For further information, please contact Samantha Updegrave, Zoning Officer, (510) 981-7414, or supdegrave@cityofberkeley.info.

Written comments should be mailed 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.

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 or in person to the City Clerk. 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.

Mark Numainville, City Clerk

Mailed: January 25, 2022

NOTICE CONCERNING YOUR LEGAL RIGHTS: *If you object to a decision by the City Council to approve or deny (Code Civ. Proc. §1094.6(b)) or approve (Gov. Code 65009(c)(5)) an appeal, the following requirements and restrictions apply: 1) Pursuant to Code of Civil Procedure Section 1094.6, no lawsuit challenging a City decision to deny or approve a Zoning Adjustments Board decision 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 Zoning Adjustments Board decision, 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.*

If you challenge the above in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Berkeley at, or prior to, the public hearing. Background information concerning this proposal will be available by request from the City Clerk Department and posted on the City of Berkeley webpage at least 10 days prior to the public hearing.



Office of the City Manager

INFORMATION CALENDAR

February 8, 2022

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Mark Numainville, City Clerk

Subject: Update on Berkeley's Redistricting Process for City Council Districts

CURRENT SITUATION AND ITS EFFECTS

This report is an update on Berkeley's redistricting activities for the January-March 2022 timeframe.

BACKGROUND

Berkeley's Independent Redistricting Commission (IRC) convened for the first time in 2020. The 13-member Commission is fully responsible for developing and adopting revisions to Berkeley's City Council districts. Since the districts must be balanced with approximately the same number of people in each one, redistricting is required every ten years to account for population shifts. The Commission must use the U.S. Census as the population data source, along with input from the public and other criteria established in the City Charter and other redistricting laws.

Public Submission of Redistricting Maps

The period for public submission of redistricting maps ended on Monday, November 15, 2021. A total of 29 maps were submitted for consideration by the Commission. The plans from the public provide valuable input to the Commission in the form of common themes and specific interests expressed, but they are not required to be the template from which the Commission determines the final boundaries.

In addition to redistricting maps, the Commission has received community input in a variety of ways. A "Community of Interest" or "COI" form is available in English and Spanish, allowing people to describe their community and why it should be represented in one City Council district. To date, 62 forms have been received from across the eight existing districts. Written comments have also been provided throughout the process, and the community continues to attend the Commission's public meetings and hearings to give verbal testimony.

Map Development Process

The discussion of Communities of Interest and maps submitted by the public continued into January of 2022. The Commission has now transitioned into the map drafting phase, with the final map to be adopted in March 2022. All maps and COI forms are available online through the City's redistricting web page at cityofberkeley.info/redistricting. Key redistricting milestones are presented below:

- January 10 – IRC meeting (regular)
Discussion regarding public map submissions. Direction to staff on the number of draft maps and significant elements desired in the draft maps.
- January 27 – IRC public hearing
First review of draft maps. Discussion and direction regarding revisions. May narrow number of draft maps under consideration.
- February 17 – IRC public hearing
Second review of draft maps. Discussion and direction regarding revisions. May narrow number of draft maps under consideration.
- Date TBD – IRC meeting (special)
Special meeting to receive additional feedback from the public on draft maps, if needed.
- February 28 – IRC public hearing
Third review of draft maps. Direction to staff on final map for adoption.
- March 16 – IRC meeting (regular)
Commission adopts final map and accompanying redistricting report.
- March 22 – City Council meeting (special)
City Council adopts first reading of the final map ordinance without alteration in accordance with the City Charter.
- April 12 – City Council meeting (regular)
City Council adopts second reading of the final map ordinance without alteration in accordance with the City Charter.

On January 10, the Commission established the following themes to be used in the development of the first set of five draft maps:

Themes to be prioritized in all draft maps:

- a. 10% Maximum Population Variance
- b. Contiguity
- c. Communities of Interest/Neighborhoods
- d. Use major arterial streets as boundaries where possible
- e. Correct the features of the 2010 map for Councilmember residences
- f. Include at least one compact student district in every map

Themes to be included in one or more draft map variation:

- a. Single, north-south West Berkeley district
- b. Topography/Transit Access/Wildfire Risk
- c. Two different maps with different configurations for two student majority districts
- d. A map that has a high level of continuity with the existing boundaries that includes changes only as required by the six mandatory criteria above.

Maps are being drafted by three-member ad-hoc subcommittee pursuant to the direction of the Commission, with assistance from commission staff.

Community Messaging and Outreach

Staff and the commission have coordinated to develop a robust outreach program throughout the redistricting process. The plan's objectives are to reach diverse communities, provide information, and encourage participation in the redistricting process.

The City's initial method of communicating with the public is through community news releases, which are sent to approximately 9,000 subscribers and posted on the City's website. Each release is followed by a cascade of related messaging across the following channels:

- Social media posts on Twitter (16,000+ followers) and Nextdoor (53 neighborhood groups)
- Emails sent to 400+ community groups and interested parties
- Targeted outreach to ~40 high-interest community groups
- Calls to contacts at local media outlets
- Paid advertisements in local media outlets
- Utilization of pass-through messaging by City Councilmembers
- Continuation of the collaborative relationship with the Associated Students of the University of California and other campus partners

When possible, IRC messages will also be re-published through the e-newsletters managed by the Berkeley Public Library and Berkeley Unified School District.

In-person outreach continues to be limited by the COVID-19 pandemic. The number of public events also decreases during the winter months due to inclement weather. Nonetheless, Staff has coordinated four in-person outreach dates in 2022. Open house events are scheduled at Northbrae Community Church on January 22 from 1:00-3:00 p.m., and at the South Berkeley Senior Center on January 24 from 5:00-7:00 p.m. On February 1st and 3rd, staff will have an informational table at the intersection of Bancroft Way and Telegraph Avenue from 9:00 a.m. to 3:00 p.m. Additional in-person outreach events will be attended as they become available.

Printed Draft Maps and Final Maps

Printed maps will be available in two sizes. Large-scale maps provide a detailed view of district boundaries; however, the large size limits where they can be placed in public facilities. Smaller, ledger-sized 11"x17" map books will be provided at locations where placement of larger maps is not feasible. Map books include an overview of each proposed map, an individual page dedicated to each of the proposed districts, and related population data.

- Large-scale paper maps will be available at two locations – the Central Library at 2090 Kittredge Street, and the South Berkeley Senior Center at 2939 Ellis Street. Ledger-sized map books will also be provided at those locations.
- Ledger-sized map books will be available at each of the City's four library branches, two pools, and five community centers, the Central Administrative Offices at 2180 Milvia Street, and at the 1947 Center Street facility.

The first draft maps will be distributed to these locations within a day after they are made available to the public and published online on January 20. Maps will be redistributed as they are revised by the Commission, up to and including the final map. All maps and materials will be available online at cityofberkeley.info/redistricting/. Community of Interest forms are also already available at all of the locations described above.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable environmental effects or opportunities associated with the subject of this report.

CONTACT PERSON

Mark Numainville, City Clerk, (510) 981-6900



Office of the City Manager

INFORMATION CALENDAR
February 8, 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: Healthy Checkout Ordinance Protocols

INTRODUCTION

On September 22, 2020, the City Council approved the adoption of the Healthy Checkout Ordinance 7,734-N.S. in which applicable retail stores would be required to meet standards in Sec 9.82.030 A-C in all checkout areas. The City's Public Health Division was identified to conduct biannual reviews of qualifying food and beverage categories and Environmental Health was identified to conduct enforcement of the ordinance.

CURRENT SITUATION AND ITS EFFECTS

The Public Health Division has developed a process to conduct a biannual review of the qualifying food and beverage categories that will begin on July 2022, seven months after enforcement of the ordinance began on January 1, 2022. This biannual review will be conducted by a City staff member with an educational background and professional experience in the field of nutrition. Categories will be based on nationally accepted nutrition standards and references. The Public Health Division developed forms to document the review, and the results will be provided to the Council biannually as an Information Item.

The Environmental Health Division developed a procedure for enforcement that is aligned with the Division's regular inspections of businesses considered "Large Retail Stores" (defined as commercial establishments selling goods to the public with a total floor area over 2,500 square feet and selling 25 linear feet or more of food). Inspections associated with the Healthy Checkout Ordinance will be conducted as part of the subject facility's routine inspection schedule beginning in January 2022. Responses to complaints of noncompliance will occur as soon as practical, typically within five (5) business days or longer, depending on Division priorities at the time the complaint is received. Inspections will follow standard inspection procedures and follow issuance of administrative citation(s), when applicable, according to Chapter 1.28 of the Berkeley Municipal Code A fee study will be conducted by the Division to determine the actual personnel and resource costs for these unfunded additional activities.

BACKGROUND

The City of Berkeley recognizes the negative health impacts associated with diets that include an excess of added sugars and sodium, and that placement of unhealthy snacks near a register can entice increased consumption. For this reason, the Healthy Checkout Ordinance No. 7,734-N.S. was approved and went into effect on March 1, 2021 with enforcement commencing on January 1, 2022.

Berkeley funded community-based organizations, Bay Area Community Resources (BACR) and Community Health Education Institute (CHEI), led informational and educational activities with twenty-five (25) retail businesses that fall under the defined criteria of "Large Retail Store" to support their understanding and compliance of the Healthy Checkout Ordinance prior to enforcement going in to effect on January 1, 2022.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

There are no identifiable environmental sustainability and climate impacts.

POSSIBLE FUTURE ACTION

Regular informational items will be submitted to City Council to keep Councilmembers updated on the activities associated with the Healthy Checkout Ordinance.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

This Ordinance requires staff resources that are not funded, which impacts staff time and Division budgets.

CONTACT PERSON

Janice Chin, Public Health Division Manager, HHCS, (510) 981-5121

Attachments:

- 1: Protocol for Biannual Review, Healthy Checkout Ordinance 7,734-N.S.
- 2: Protocol for Enforcement of Healthy Checkout Ordinance
- 3: Ordinance No. 7,734-N.S; Healthy Checkout



Health, Housing and
Community Services Department
Office of the Director

Attachment 1

MEMORANDUM

To: Dee Williams-Ridley, City Manager

From: Lisa Warhuus, PhD, Director

Date:

Subject: Proposed Protocol for Enforcement of Healthy Check-Out Ordinance by Environmental Health Division Field Staff

Effective January 1, 2022, the City of Berkeley's Environmental Health Division (EHD) will begin conducting inspections at qualifying food facilities (i.e. retail food markets with greater than 2500 sq. ft. of floor sales) for compliance with the City of Berkeley's "Healthy Check-Out" (HCO) ordinance. These inspections will be conducted as part of the subject facility's regular routine inspection.

In addition, EHD staff will respond to and investigate complaints of noncompliance with the HCO ordinance as soon as practical, typically within five (5) business days or longer, depending on EHD priorities at the time the complaint is received. (**Note:** Violations of the HCO ordinance are not assigned the same priority as other more 'acute' health and safety issues such as foodborne illness-related complaints and/or COVID-related complaints.)

In situations where EHD inspectors identify and document a violation(s) of the HCO ordinance and/or other compliance issues related to the HCO ordinance, EHD staff will document the violation(s) on the official inspection form for that facility. If the violation(s) cannot be corrected during the course of the routine inspection, EHD inspectors will apply the same criteria used in determining whether a follow-up inspection is necessary.

Follow-up inspections are chargeable inspections (currently billed at \$170/hr. or fraction thereof), and are a useful enforcement tool in achieving compliance in most instances. However, if additional follow-up inspections are necessary to correct violations of the HCO ordinance, facilities will continue to be charged for any additional follow-up inspections. If compliance with the HCO ordinance still cannot be achieved after multiple follow-up inspections, EHD staff may consider elevating enforcement efforts,

A Vibrant and Healthy Berkeley for All

Subject Proposed Protocol for Enforcement of Healthy Check-Out Ordinance by EHD Field Staff

Date:

Page 2 of 2

which includes the issuance of an administrative citation(s), per Chapter 1.28 of the Berkeley Municipal Code (BMC) with the associated penalties/fines:

\$100 for the first violation

\$200 for the second violation

\$500 for the third and subsequent violations

Community members with general inquiries about the HCO ordinance, or those wishing to report a violation(s) of the HCO ordinance may contact EHD either via telephone:

510.981.5310, or via the general Environmental Health email inbox:

envhealth@cityofberkeley.info .



Health, Housing and
Community Services Department

Attachment 2

Healthy Checkout Ordinance 7,734 – N.S. **PROTOCOL FOR BI-ANNUAL REVIEW**

Public Health (PH) Division staff shall review on a bi-annual basis the qualifying food and beverage categories listed in Section 9.82.030. of Ordinance No. 7,734-N.S. “Healthy Checkout”.

PH Division staff will refer to/cite professional sources on nutrition standards, guidance for healthy food and beverage categories, and/or healthy checkout toolkits in the review.

PH Division staff will mark each category item as NO CHANGE or CHANGE based on alignment with the most up to date Dietary Guidelines for Americans to assess if ordinance definitions and categories are supported by the guidelines.

If a category section is marked as “NO CHANGE,” PH Division staff has completed review of that section. If a category section is marked as “CHANGE”, PH Division staff will complete and attach “Attachment A”, providing: (a) reason/justification for the change, and (b) recommended language for the change

After completion of the Bi-Annual Review form and Attachment A (if applicable), PH Division staff shall sign, date and route through to HHCS Department Director.

If there are no changes, an informational item will be submitted to City Council.

If the review proposes changes, the HHCS Department will submit a council report to City Council for approval of the proposed changes to the Ordinance.

Results of the Bi-Annual Review will be made available online within 2 weeks of submission and/or approval by City Council.

The next Bi-Annual Review will be scheduled 6 months from the last completed review date.

BI-ANNUAL REVIEW ROUTING
Review and/or sign document(s) and pass along to:

- PH Staff Reviewer: _____ Date: _____
- PH Senior Manager: _____ Date: _____
- PH Division Manager: _____ Date: _____
- EH Division Manager.: _____ Date: _____
- HHCS Department Director: _____ Date: _____

BI-ANNUAL REVIEW RESULTS
Chapter 9.82.030 of Ordinance No. 7,734-N.S.

DATE: _____

Qualifying Food and Beverage Categories	Mark if noted as No Change or Change*
A. Beverage Must have no added sugars or artificial sweeteners	
B. Food Items Added Sugars – no more than 5 grams per labeled serving	
Sodium – no more than 200 milligrams per labeled serving	
C. Food item categories	
Chewing Gum or mints with no added sugars	
Fruit	
Vegetables	
Nuts	
Seeds	
Legumes	
Yogurt	
Cheese	
Whole Grains	

**For all recommended changes, INCLUDE ATTACHMENT A (Documentation for Change)*

Completed by Public Health Division staff:

Name: _____

Classification: _____

Signature and Date: _____

***ATTACHMENT A- Documentation for Proposed Change(s)**

CATEGORY (as it is currently approved in Ordinance No. 7,734-N.S.):

RECOMMENDED CHANGE:
Justification for change (include reference):
Recommended language for change:

ORDINANCE NO. 7,734-N.S.

ADDING CHAPTER 9.82 TO THE BERKELEY MUNICIPAL CODE "HEALTHY CHECKOUT"

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

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

9.82.010. Findings and Purpose.

The City of Berkeley hereby finds and declares as follows:

- A. Diets with an excess of added sugars and sodium are correlated to chronic health issues including diabetes, high blood pressure, and stroke.
- B. Food choices are strongly affected by the environments in which they are made. The placement of unhealthy snacks near a register increases the likelihood that consumers will purchase those foods and drinks, thus undermining consumer health choices and public health initiatives.
- C. It is in the interest of the health, safety, and welfare of all who live, work, and do business in the City that large stores offer healthy options and do not actively encourage the purchase of unhealthy foods.
- D. This Chapter is consistent with the General Provisions of Environmental Health of the City (Berkeley Municipal Code 11.04).

9.82.020. Definitions.

- A. "Added Sugars" means sugars added during the processing of food and beverages, or are packaged as such, and include sugars (free, mono and disaccharides), sugars from syrups and honey, and sugars from concentrated fruit or vegetable juices that are in excess of what would be expected from the same volume of 100 percent fruit or vegetable juice of the same type, as defined in Section 101.9 of Title 21 of the Code of Federal Regulations.
- B. "Artificial Sweetener" means sweeteners with few to no calories that have a higher intensity of sweetness per gram than sucrose.
- C. "Category List" means the list of foods and beverages which meet the standards of BMC 9.82.030.
- D. "Checkout Area" means any area that is accessible to a customer of the Large Retail Store that is either:
 - i. within a 3-foot distance of any Register; or
 - ii. designated primarily for or utilized primarily by customers to wait in line to make a purchase at a Register, up to and including the Checkout Endcap.
- E. "Checkout Endcap" means product displays placed at endpoints of areas designated primarily for or utilized primarily by customers to wait in line to make a purchase.
- F. "Register" means a device used for monetary transactions that calculates the sales of goods and displays the amount of sales for the customer.
- G. "Large Retail Store" means a commercial establishment selling goods to the public with a total floor area over 2,500 square feet and selling 25 linear feet or

more of food.

9.82.030. Healthy Checkout Areas.

Each Large Retail Store shall, at all hours during which the Large Retail Store is open to the public, ensure that all foods and beverages sold in all Checkout Areas meet the standards in Sec 9.82.030 A-C and comply with the list of qualifying food and beverage categories:

- A. Beverages with no added sugars and no artificial sweeteners.
- B. Food items with no more than 5 grams of added sugars, and 200 milligrams of sodium per labeled serving.
- C. Food items must be in the following categories: chewing gum and mints with no added sugars, fruit, vegetables, nuts, seeds, legumes, yogurt or cheese and whole grains.

City staff will provide technical assistance for implementation. Bi-annual review of qualifying food and beverage categories will be done by the Public Health Division. There will be a 120 day phase-in period if any changes are made.

9.82.040. Enforcement.

- A. The City is hereby authorized to issue all rules and regulations consistent with this ordinance, including, but not limited to, fees for re-inspection.
- B. Compliance with this Chapter shall be administered by the City during regular inspections of qualifying Large Retail Stores. The City may require a Large Retail Store to provide such information as may be necessary to determine the Large Retail Store's compliance with this Chapter.

9.82.050. Violation--Penalty.

- A. A Large Retail Store that violates any provision of this chapter may be subject to administrative citations pursuant to Chapter 1.28 of this Code.
- B. This section shall not limit the City from recovering all costs associated with implementing this chapter or investigating complaints pursuant to fee resolution.
- C. Remedies and penalties under this chapter are cumulative and not exclusive.

9.82.060. Effective Date.

This ordinance and the legal requirements set forth herein shall take effect and be in force March 1, 2021. Enforcement pursuant to 9.82.040 shall commence no sooner than January 1, 2022.

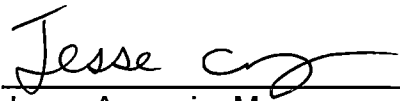
Section 2. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.

At a regular meeting of the Council of the City of Berkeley held on September 22, 2020, this Ordinance was passed to print and ordered published by posting by the following vote:

Ayes: Bartlett, Davila, Droste, Hahn, Harrison, Kesarwani, Robinson, Wengraf, and Arreguin.
Noes: None.
Absent: None.

At a regular meeting of the Council of the City of Berkeley held on October 13, 2020, this Ordinance was adopted by the following vote:

Ayes: Bartlett, Davila, Droste, Hahn, Harrison, Kesarwani, Robinson, Wengraf, and Arreguin.
Noes: None.
Absent: None.

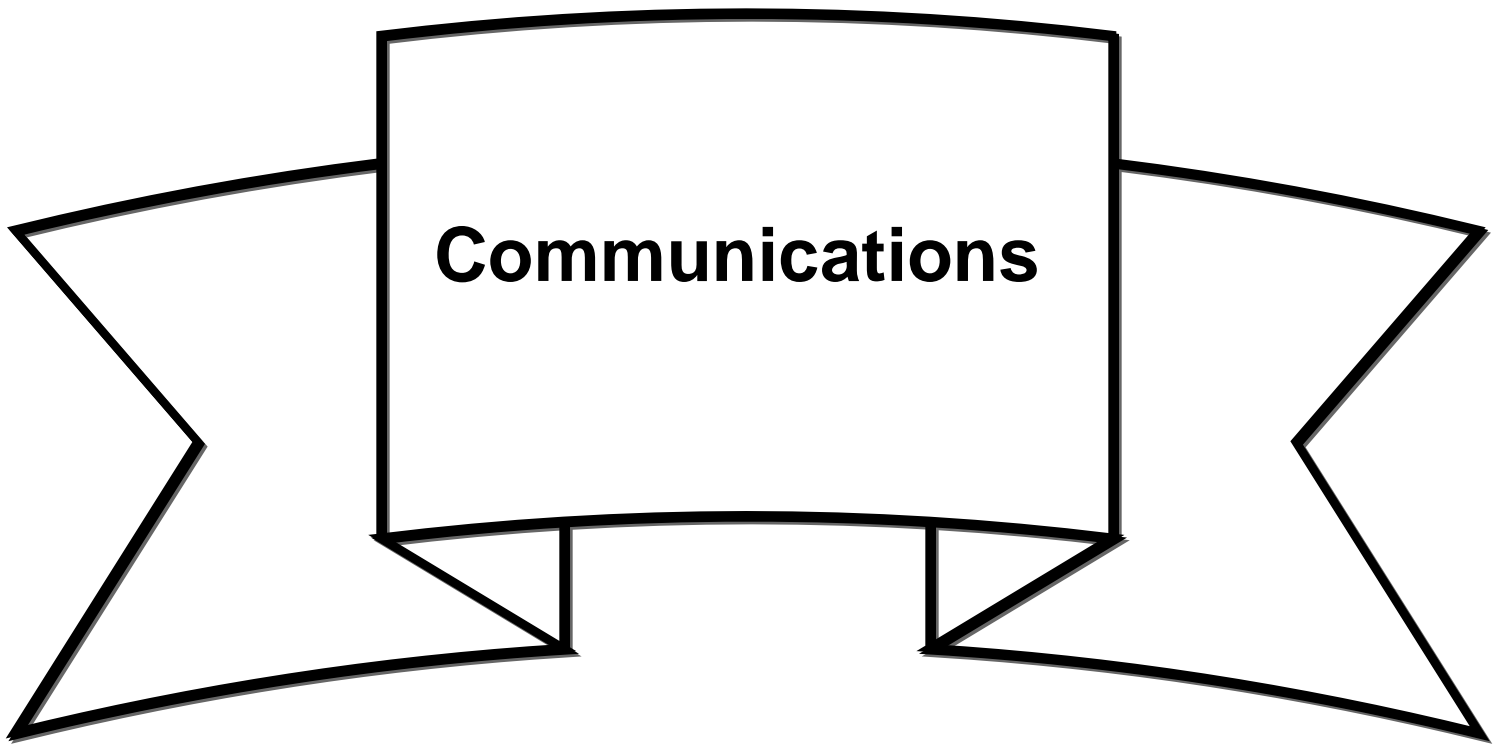


Jesse Arreguin, Mayor

ATTEST: 

Mark Numainville, City Clerk

Date signed: October 20, 2020



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