



Planning Commission

AGENDA

REGULAR MEETING OF THE PLANNING COMMISSION

This meeting is held in a wheelchair accessible location.

Wednesday, January 16, 2019
7:00 PM

Basement Multipurpose Room
1947 Center Street

See “**MEETING PROCEDURES**” below.

All written materials identified on this agenda are available on the Planning Commission webpage: <http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=13072>

PRELIMINARY MATTERS

1. **Roll Call:** Pinto, Prakash, appointed by Councilmember Maio, District 1
Martinot, Steve, appointed by Councilmember Davila, District 2
Schildt, Christine, Chair, appointed by Councilmember Bartlett, District 3
Lacey, Mary Kay, appointed by Councilmember Harrison, District 4
Beach, Benjamin, appointed by, Councilmember Hahn, District 5
Kapla, Robb William, for Councilmember Wengraf, District 6
Fong, Benjamin, appointed by Councilmember Worthington, District 7
Vincent, Jeff, appointed by Councilmember Droste, District 8
Wrenn, Rob, Vice Chair, appointed by Mayor Arreguin
2. **Order of Agenda:** The Commission may rearrange the agenda or place items on the Consent Calendar.
3. **Public Comment:** Comments on subjects not included on the agenda. Speakers may comment on agenda items when the Commission hears those items. (See “*Public Testimony Guidelines*” below):
4. **Planning Staff Report:** In addition to the items below, additional matters may be reported at the meeting. **Next Commission meeting: February 6, 2019**
5. **Chairperson’s Report:** Report by Planning Commission Chair.
6. **Committee Reports:** Reports by Commission committees or liaisons. In addition to the items below, additional matters may be reported at the meeting.
7. **Approval of Minutes:** Approval of Draft Minutes from the meeting on December 5, 2018.
8. **Future Agenda Items and Other Planning-Related Events**

AGENDA ITEMS: All agenda items are for discussion and possible action. Public Hearing items require hearing prior to Commission action.

- 9. Action:** **Public Hearing on Tentative Tract Map for 2747 San Pablo Avenue**
Recommendation: Hold public hearing and consider tentative tract map.
Written Materials: Attached
Web Information: N/A.
Continued From: N/A
- 10. Action:** **Options for Encouraging Student Housing in the Southside**
Recommendation: Discuss materials and provide direction on drafting Zoning Ordinance amendments and/or communications that encourage development of student housing.
Written Materials: Attached
Web Information: N/A
Continued From: 9/5/18
- 11. Discussion:** **Review First Draft Executive Summary and Mitigation Actions of the Local Hazard Mitigation Plan**
Recommendation: Discuss materials and establish process for Planning Commission to provide feedback at the February meeting.
Written Materials: Attached
Web Information: <https://www.cityofberkeley.info/Mitigation/>
Continued From: 11/7/18
- 12. Action:** **Chair and Vice Chair Nominations**
Recommendation: Nominate candidates for elections at the February meeting
Written Materials: N/A
Web Information: N/A
Continued From: N/A

ADDITIONAL AGENDA ITEMS: In compliance with Brown Act regulations, no action may be taken on these items. However, discussion may occur at this meeting upon Commissioner request.

Communications:

- 2018-12-17 Margy Wilkinson - San Francisco Chronicle article regarding penalties for illegally demolished landmark property.
- 2018-12-20 Jeff Vincent- one email and two articles regarding housing supply and affordability

Late Communications (Received after the Packet deadline):
None.

ADJOURNMENT

Meeting Procedures

Public Testimony Guidelines:

Speakers are customarily allotted up to three minutes each. The Commission Chair may limit the number of speakers and the length of time allowed to each speaker to ensure adequate time for all items on the Agenda. **To speak during Public Comment or during a Public Hearing, please line up behind the microphone.** Customarily, speakers are asked to address agenda items when the items are before the Commission rather than during the general public comment period. Speakers are encouraged to submit comments in writing. See “Procedures for Correspondence to the Commissioners” below.

Consent Calendar Guidelines:

The Consent Calendar allows the Commission to take action with no discussion on projects to which no one objects. The Commission may place items on the Consent Calendar if no one present wishes to testify on an item. Anyone present who wishes to speak on an item should submit a speaker card prior to the start of the meeting, or raise his or her hand and advise the Chairperson, and the item will be pulled from the Consent Calendar for public comment and discussion prior to action.

Procedures for Correspondence to the Commissioners:

- To have materials included in the packet, the latest they can be submitted to the Commission Secretary is close of business (5:00 p.m.), on Tuesday, eight (8) days prior to the meeting date.
- To submit late materials for Staff to distribute at the Planning Commission meeting, those materials must be received by the Planning Commission Secretary, by 12:00 p.m. (noon), the day before the Planning Commission meeting.
- Members of the public may submit written comments at the Planning Commission meeting. To submit correspondence at the meeting, please provide 15 copies, and submit to the Planning Commission Secretary before the start time of the meeting.
- If correspondence is more than twenty (20) pages, requires printing of color pages, or includes pages larger than 8.5x11 inches, please provide 15 copies.
- Written comments/materials should be directed to the Planning Commission Secretary, at the Land Use Planning Division (Attn: Planning Commission Secretary).

Communications are Public Records: Communications to Berkeley boards, commissions, or committees are public records 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 a City board, commission, or committee, 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 Secretary of the relevant board, commission, or committee. 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 Secretary to the relevant board, commission, or committee for further information.

Written material may be viewed in advance of the meeting at the Department of Planning & Development, Permit Service Center, **1947 Center Street, 3rd Floor**, during regular business hours, or at the Reference Desk, of the Main Branch Library, 2090 Kittredge St., or the West Berkeley Branch Library, 1125 University Ave., during regular library hours.

Note: If you object to a project or to any City action or procedure relating to the project application, any lawsuit which you may later file may be limited to those issues raised by you or

someone else in the public hearing on the project, or in written communication delivered at or prior to the public hearing. The time limit within which to commence any lawsuit or legal challenge related to these applications is governed by Section 1094.6, of the Code of Civil Procedure, unless a shorter limitations period is specified by any other provision. Under Section 1094.6, any lawsuit or legal challenge to any quasi-adjudicative decision made by the City must be filed no later than the 90th day following the date on which such decision becomes final. Any lawsuit or legal challenge, which is not filed within that 90-day period, will be barred.

Meeting Access: This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services Specialist, at 981-6418 (V) or 981-6347 (TDD), at least three (3) business days before the meeting date. Please refrain from wearing scented products to public meetings.



Planning Commission

1 **DRAFT MINUTES OF THE REGULAR PLANNING COMMISSION MEETING**
2 **December 5, 2018**

3 The meeting was called to order at 7:03 p.m.

4 **Location:** North Berkeley Senior Center, Berkeley, CA

5 **1. ROLL CALL:**

6 **Commissioners Present:** Steve Martinot, Robb William Kapla, Christine Schildt, Benjamin
7 Fong, Benjamin Beach, Mary Kay Lacey, Rob Wrenn, Savlan Hauser (alternate for Jeff
8 Vincent).

9 **Commissioners Absent:** Prakash Pinto (leave of absence), Jeff Vincent (leave of absence)

10 **Staff Present:** Secretary Alene Pearson, Elizabeth Greene, Nilu Karimzadegan, Jim Frank,
11 Erik Anderson and Beth Thomas.

12 **2. ORDER OF AGENDA:** No changes.

13 **3. PUBLIC COMMENT PERIOD:** No speakers.

14 **4. PLANNING STAFF REPORT:**

15 Staff announced that this will be the last meeting held at the North Berkeley Senior Center and
16 the next meeting will be held in the Multi-purpose Room at 1947 Center Street. Additionally, staff
17 pointed out that at December 11, 2018 Council meeting, amendments to support Small
18 Businesses and rezoning of a parcel at 1050 Parker will be discussed. There are 2 information
19 items pertaining to Small Businesses and a referral to Planning Commission that are included in
20 the packet provided to Council.

21 **Information Items:**

- 22 • City Council Report dated November 27, 2018 (Referral Response: Modifications to the
- 23 Zoning ordinance to Support Small Businesses)
- 24 • Survey Results on Zoning Ordinance Amendments to Support Small Businesses
- 25 • Short Term Referral to Expedite Components of the More Student Housing Now
- 26 Resolution, and budget referral to the annual appropriation ordinance adoption
- 27

28 **Communication:**

- 29 • 2018-11-16 – Supporting modifications to the zoning ordinance
- 30

31 **Late Communications** (Received after the Packet deadline):

- 32 • 2018-12-05 – Adriana Ortega Housing Letter

- 33 • 2018-12-05 – Commission Meeting and Contact Information Brochures
- 34 • 2018-12-05 – Charley Pappas_RE ST PL

35 **Late Communications** (Received and distributed at the meeting): None.

36 **5. CHAIR REPORT:** None.

37 **6. COMMITTEE REPORT:** None

38 **7. APPROVAL OF MINUTES:**

39 Motion/Second/Carried (Kapla/Fong) to approve the Planning Commission Meeting Minutes
40 from November 7, 2018 with amendments to Home Occupation to allow for one non-resident
41 individual engaged in business-related activities. Ayes: Martinot, Kapla, Schildt, Fong, Beach,
42 Lacey, Wrenn. Noes: None. Abstain: Hauser. Absent: Pinto (7-0-1-1)

43

44 **FUTURE AGENDA ITEMS AND OTHER PLANNING-RELATED EVENTS:** At the next meeting,
45 January 16, 2019 Student Housing, Local Hazard Mitigation Plan and Report back to Office of
46 Emergency services will be presented.

47 **AGENDA ITEMS**

48 **9. Action: Public Hearing: Retail Nursery Microbusiness**

49 Staff reported that the Council voted at the September 2018 meeting to allow small Distributers
50 and Cultivators to operate in Berkeley and to allow all cannabis businesses to operate as for-
51 profit business. At the October 9, 2018 work session, the Council gave directions to maintain
52 existing Retailer quotas, expand buffers for Retailers and supported the conversion of existing
53 non-cannabis nurseries to cannabis retail nurseries. Staff described the draft ordinance, which
54 would allow two existing nurseries to convert to Retail Nursery Microbusinesses (RNM)
55 regardless of the number of Retailers and Cultivators in the City. RNM would be subject to the
56 performance and development standards in place for the cannabis uses included as part of the
57 RNM. The Commission held a public hearing, asked clarifying questions and discussed the
58 proposed amendment.

59

60 Motion/Second/Carried (Schildt /Beach) to close the public hearing for item 9. Ayes:
61 Martinot, Kapla, Schildt, Fong, Beach, Lacey, Wrenn, Hauser. Noes: None. Abstain: None.
62 Absent: Pinto. (8-0-0-1)

63

64 Motion/Second/Carried (Kapla/Wrenn) to adopt proposed language and require a Use Permit
65 for the conversion of an existing nursery to a Retail Nursery Microbusinesses. Ayes:
66 Martinot, Kapla, Schildt, Fong, Beach, Lacey, Wrenn, Hauser. Noes: None. Abstain: None.
67 Absent: Pinto.
68 (8-0-0-1)

69

70 **Public Comments:** 4 Comments

71 **10. Discussion: Bicycle Parking Standards**

72 Department of Public Work staff presented 2017 Berkeley Bicycle Plan and a summary of
73 bicycle parking best practices to the Planning Commission and asked for direction on Berkeley's
74 bicycle parking standards. Additionally staff proposed that the Planning Commission consider
75 incorporating standards for bicycle parking into the Zoning Ordinance for all districts. The
76 Commission is interested in moving this proposal forward if it can be folded in ZORP and does
77 not require excessive Planning staff time.

78 Public Comments: None

79 **The meeting was adjourned at 8:38 pm**

80 **Commissioners in attendance: 8 of 9**

81 **Members in the public in attendance: 8**

82 **Public Speakers: 4 speakers**

83 **Length of the meeting: 1 hours and 35 minutes**

DRAFT



Planning and Development Department
Land Use Planning Division

Staff Report

2747 San Pablo Avenue

Tentative Map #8369 to allow condominium ownership in a forty-two (42) unit project with thirty-nine (39) residential units, one (1) commercial unit, and two (2) live/work units under construction at 2747 San Pablo Avenue.

I. Application Basics

A. Chronology of Subdivision Application:

- June 14, 2017 Map Application submitted.
- July 17, 2018 Map Application considered complete.
- December 5, 2018 Subdivision Map Act deadline (50 days from complete).
- January 16, 2019 Planning Commission hearing (both applicant and staff agreed to extend the deadline).

B. CEQA Determination:

Construction of the project is categorically exempt pursuant to Section 15332, of the CEQA Guidelines (“In-Fill Development Projects”). Approval of the Tentative Map is also categorically exempt pursuant to Section 15301, of the CEQA Guidelines, which involves the division of existing multifamily or single-family residences into common interest ownership.

C. Parties Involved:

- Applicant/Owner: Yorke Lee (Yihua Li), 12230 Saratoga-Sunnyvale Rd, Saratoga, CA

II. Project Description

A. Background:

On June 28, 2007, the Zoning Adjustments Board (ZAB) granted Use Permit #06-10000109, to allow the development of a five-story mixed use building with 39 residential condo units (including 6 inclusionary units), a café, two live-work units and 49 parking spaces, on a 17,386 square-foot lot. The ZAB found the construction and the uses consistent with the 2002 General Plan, the 1993 West Berkeley Plan, and the applicable provisions of the Berkeley Municipal Code (BMC).

The project approved by the ZAB included six (6) dwelling units affordable to low income households to comply with Berkeley Municipal Code (BMC) Section 23C.12. Because the project approved by the ZAB received a density bonus of eleven (11) dwellings, for a period of 30 years, six (6) of the low income dwellings are also subject to additional affordability requirements to comply with State Density Bonus Law (Government Code Section 65915(f)(2)). A Regulatory Agreement between the City and the applicant stating that all the units will be sold as condominiums was signed on February 6, 2017.

III. Analysis

A. Subdivision Map Act Consistency:

The Public Works Department reviewed the form and content of the Tentative Tract Map application, and has verified that it contains the content required by the Subdivision Map Act, including the subdivision number, the legal address of the legal owner or subdivider, sufficient legal description to define the boundary of the proposed subdivision, the location, pavement and right of way width, grade and name of existing streets or highways, the widths, location, and identity of all existing easements. The Public Works Department has determined that the Tentative Tract Map is suitable for review by the Planning Commission.

B. Tentative Map Ordinance (Berkeley Municipal Code Chapter 21.16) Consistency:

The Planning Commission may approve, conditionally approve, or deny the tentative map in accordance with Berkeley Municipal Code (BMC) Section 21.16.047.

According to this section of the Code, the Planning Commission shall deny approval of the tentative map if it can make any of the following findings from BMC Section 21.16.047.A through 21.06.047.G. Staff analysis relating to whether the findings can be made are included.

A: *That the proposed map is not consistent with the applicable general and specific plans.*

B: *That the design or improvement of the proposed subdivision is not consistent with applicable general and specific plans.*

C. *The site is not physically suitable for the proposed density of development.*

Staff Analysis: The subject property and proposed improvements were evaluated and found to be consistent with the General Plan and Zoning Ordinance, and the density was found to be physically appropriate for the site and consistent with applicable zoning regulations, in conjunction with the Zoning Permits issued by the Zoning Adjustments Board on December 10, 2013 (and subsequent modifications). Staff does not believe that either Findings A, B or C can be made.

- D. *That the design of the subdivision or the type of the improvements is likely to cause environmental damage or substantially and avoidably injure fish, or wildlife, or their habitat.*
- E. *That the design of the subdivision or the type improvements is likely to cause serious public health problems.*

Staff Analysis: The potential for substantial environmental damage, or harm to fish and wildlife, or their habitat, or the likelihood of public health problems was evaluated when the Use Permits for the project were approved by the ZAB in order to determine whether any of the exceptions to the CEQA Exemption for in-fill development were present. No potential environmental or public health impacts were found. Staff does not believe that either Findings D or E can be made.

- F. *That conflicts with existing public access easements, in accordance with Section 6674(g), of the Subdivision Map Act, which states: "That the design of the subdivision or the type of improvements will conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision. In this connection, the governing body may approve a map if it finds that alternate easements, for access or for use, will be provided, and that these will be substantially equivalent to ones previously acquired by the public. This subsection shall apply only to easements of record or to easements established by judgment of a court of competent jurisdiction and no authority is hereby granted to a legislative body to determine that the public at large has acquired easements for access through or use of property within the proposed subdivision."*

Staff Analysis: The City of Berkeley Public Works department has verified that the proposed Subdivision will not conflict with any easements of record, or with any easements established by judgment of court.

- G. *That the design of the subdivision does not provide, to the extent feasible, for future passive or natural heating or cooling opportunities in the subdivision.*

Staff Analysis: Subdivision of the project into condominiums will not alter passive or natural heating or cooling opportunities since it is limited to the subdivision of existing multiple family residences. Staff does not believe that Finding G can be made.

B. Density Bonus:

Government Code Section 65915 requires cities to grant a density bonus, and incentives, to housing projects that meet certain affordability levels. Based on the City's application of Density Bonus law, staff determined that the base project for this development site would have 28 units. Based on a "base project" of 28 units, a 35-percent density bonus would have been 10 units. However, the applicants requested and the ZAB granted a bonus of 11 units.

To allow for construction of the 11 density bonus units the applicant requested, and was granted, the following waivers and modifications apply:

- 1) Waiver/modification of height/story limit to allow five stories and 51-feet: Section 23E.64.070.B limits building height in the C-W District to four stories & 50-feet. The project includes a fifth story to accommodate the density bonus units; and
- 2) Waiver/modification was granted from the requirement that inclusionary units be "reasonably dispersed throughout the project, be of the same size and contain, on average, the same number of bedrooms as the non-inclusionary units in the project" (BMC Section 23C.12.040.D).

C. Affordable Housing Mitigation Fee:

The applicants will construct six low income units instead of paying the affordable housing mitigation fee.

IV. Public Notice

BMC Section 21.16.045 requires public notice. Notice was provided as follows:

- Published in the Berkeley Voice on Friday, January 4, 2019;
- Posted at the subject property on Thursday, January 3, 2019;
- Mailed to the applicant and owner of the subject property, and to owners and occupants of properties abutting upon or confronting 2749 San Pablo Avenue, on Friday, January 4, 2019.

At the time of the writing of this report, there have been no responses.

V. Recommendation

Because of the project's consistency with Berkeley's Tentative Map Ordinance, its Condominium Conversion Ordinance, and General Plan, and because it presents minimal impact on surrounding properties, Staff recommends that the Planning Commission:

APPROVE Tentative Map #8369 pursuant to BMC Section 21.16.047 and subject to the attached Findings and Conditions (see Attachment 1).

Attachments:

1. Findings and Conditions

2. Tentative Tract Map #8369
3. Condominium Plans for Tentative Map #8369
4. Notice of Public Hearing

Staff Planner: Jim Frank, JFrank@cityofberkeley.info, 510-981-7548

ATTACHMENT 1

FINDINGS AND CONDITIONS

JANUARY 16, 2019

CEQA FINDINGS

1. Construction of the project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code §21000, et seq.) pursuant to Section 15332 of the CEQA Guidelines (“In-Fill Development Projects”) and the approval of the Tentative Map is also categorically exempt pursuant to Section 15331 of the CEQA Guidelines which involves the operations and permitting of existing facilities involving no expansion of use beyond prior approvals. 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 will not affect any historical resource.

TENTATIVE MAP FINDINGS

2. Pursuant to Berkeley Municipal Code Section 21.16.047, the Planning Commission cannot make any of the seven findings for denial of the tentative map for the following reasons:
 - A. The proposed Tentative Map is consistent with the applicable general plan policies because:
 1. The project is consistent with Policy H-19 because by adding 39 housing units, the project helps Berkeley meet its regional housing need.
 2. The project is consistent with Policy H-1 because it will provide six (6) units affordable by Low Income residents.
 - B. The design and development of the project proposed to be subdivided is consistent with the City of Berkeley’s General Plan because:
 1. The project is consistent with Policy LU-3 in that it is an infill development project that adds 39 units of housing in a location that is planned for mixed-use development.
 2. The project is consistent with Policy LU-7 because it conforms to the applicable zoning standards for the C-W District, and will further goals of revitalizing West Berkeley.
 3. The project is consistent with Policy UD-24 in that the project reinforces the City’s plans for redeveloping underutilized sites in a way that would increase the quality of the built environment and provide new housing and commercial opportunities.
 - C. The project site and proposed improvements were evaluated and found to be consistent with the General Plan and Zoning Ordinance, and the density was found to be physically suitable for the site and consistent with applicable zoning regulations, in conjunction with the Zoning Permits issued by the Zoning Adjustments Board on June 28, 2007.

-
- D. The project will not have negative environmental effects or substantially and avoidably injure fish or wildlife in their habitat since it is limited to the subdivision of a mixed-use building that was evaluated to determine whether any of the exceptions to the CEQA Exemption for in-fill development relating to environmental damage or harm to fish and wildlife or their habitat, and none were found.
 - E. The project will not conflict with any public access easements, as determined pursuant to a review by the Berkeley Public Works Department.

STANDARD CONDITIONS

- 1. The Final Map shall be submitted for certification and shall be recorded in compliance with the *Berkeley Municipal Code*, Title 21, and with the *Subdivision Map Act* of the State of California.
- 2. Prior to approval of the Final Tract Map, an Affordable Housing Agreement shall be entered into with the City's Housing Department that specifies the number, location, and pricing of units that will be affordable in accordance with Condition 68 of City Council Resolution No. 62,833 –N.S.
- 3. A copy of the Conditions, Covenants, and Restrictions shall be filed with the Planning and Development Department prior to approval of the Final Map.
- 4. The *Standard conditions of approval for all subdivisions, new condominiums and commercial condominium conversions within the City of Berkeley*, dated January 1994, applies and shall be satisfied prior to approval of the Final Map.

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY STATES THAT TIMESPACE BERKELEY, LLC IS THE OWNER OF THE LAND DELINEATED AND EMBRACED WITHIN THE EXTERIOR BOUNDARY LINES ON THE HEREIN EMBODIED MAP ENTITLED TRACT MAP 8369, BERKELEY, ALAMEDA COUNTY, CALIFORNIA; THAT SAID OWNER ACQUIRED TITLE TO SAID LAND BY VIRTUE OF THE DEED RECORDED SEPTEMBER 16, 2015 UNDER SERIES NO. 2015-254095, RECORDS OF ALAMEDA COUNTY, CALIFORNIA, THAT SAID OWNER CONSENTS TO THE PREPARATION OF AND FILING OF THIS MAP.

TIMESPACE BERKELEY LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

YIHUA LI, MANAGER

OWNER'S ACKNOWLEDGMENT

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

STATE OF CALIFORNIA

COUNTY OF ALAMEDA

ON _____ BEFORE ME, _____

A NOTARY PUBLIC IN AND FOR SAID STATE, PERSONALLY APPEARED YIHUA LI, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME IN HIS AUTHORIZED CAPACITY, AND THAT BY HIS SIGNATURE ON THE INSTRUMENT THE PERSON, OR THE ENTITY UPON BEHALF OF WHICH THE PERSON ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

SIGNATURE OF NOTARY PUBLIC: _____

PRINTED NAME OF NOTARY: _____

PRINCIPAL PLACE OF BUSINESS: _____

COMMISSION EXPIRES: _____

SURVEYOR'S STATEMENT

THIS MAP WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF YIHUA LI IN MARCH OF 2016. I HEREBY STATE THAT THIS MAP SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP, IF ANY. I HEREBY STATE THAT THE MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED, AND THAT THE MONUMENTS ARE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

EVERETT S. MORAN, RCE 18650

DATE: _____

CITY CONSULTANT SURVEYOR'S STATEMENT

THIS MAP CONFORMS TO THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCES. I, PATRICK M. REI, HEREBY STATE THAT IT HAS BEEN EXAMINED BY ME, OR UNDER MY DIRECTION BY CITY OF BERKELEY STAFF, AND AM SATISFIED THAT IT IS TECHNICALLY CORRECT.

CITY CONSULTANT SURVEYOR: PATRICK M. REI
PLS NO.: 8178

DATE: _____

TRACT MAP

BENEFICIARY'S STATEMENT

THE UNDERSIGNED, AS BENEFICIARY OF THE DEED OF TRUST RECORDED JANUARY 15, 2017, UNDER SERIES NUMBER 2017-019022, OFFICIAL RECORDS OF ALAMEDA COUNTY, CALIFORNIA, DOES HEREBY JOIN IN AND CONSENT TO THE EXECUTION OF THE FOREGOING OWNER'S STATEMENT AND TO THE PREPARATION AND FILING OF THIS MAP AND ALL DEEDINGS AND DEDICATIONS THEREON.

BANK OF THE ORIENT, A CALIFORNIA BANKING CORPORATION

NAME: _____
TITLE: _____

NAME: _____
TITLE: _____

BENEFICIARY'S ACKNOWLEDGMENT

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

STATE OF _____

COUNTY OF _____

ON _____ BEFORE ME, _____

A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED

WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY(IES) UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND:
(SIGNATURE OF NOTARY PUBLIC): _____

PRINTED NAME OF NOTARY: _____

PRINCIPAL PLACE OF BUSINESS: _____

COMMISSION EXPIRES: _____

CITY ENGINEER'S STATEMENT

I HAVE EXAMINED THIS MAP AND THE SUBDIVISION AS SHOWN IS SUBSTANTIALLY THE SAME AS IT APPEARS ON THE TENTATIVE MAP (IF ANY) AND APPROVED ALTERATIONS THEREOF.

NISHA A. PATEL, RCE 72491
CITY ENGINEER

DATE: _____

OWNER/SUBDIVIDER:
TIMESPACE BERKELEY, LLC
12230 SARATOGA-SUNNYVALE ROAD
SARATOGA, CA 95070

PLANNING DIRECTOR'S STATEMENT

THIS MAP HAS BEEN APPROVED BY THE PLANNING DIRECTOR, CITY OF BERKELEY ON _____, 2018, AND WHEN RECORDED BECOMES THE OFFICIAL MAP OF THIS LAND DIVISION.

TIMOTHY BURROUGHS
PLANNING DIRECTOR

CLERK OF THE BOARD OF SUPERVISORS STATEMENT

I, ANIKA CAMPBELL-BELTON, CLERK OF THE BOARD OF SUPERVISORS OF THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA, DO HEREBY STATE THAT CERTIFICATES HAVE BEEN FILED AND DEPOSITS HAVE BEEN MADE IN CONFORMANCE WITH THE REQUIREMENTS OF SECTION 66492 AND 66493 OF THE GOVERNMENT CODE OF THE STATE OF CALIFORNIA.

DATE: _____

ANIKA CAMPBELL-BELTON
CLERK OF THE BOARD OF SUPERVISORS,
COUNTY OF ALAMEDA, STATE OF CALIFORNIA

BY: _____
DEPUTY COUNTY CLERK

RECORDER'S STATEMENT

FILED THIS _____ DAY OF _____, 2018, AT _____ M. IN BOOK _____ OF MAPS, AT PAGE _____, AT THE REQUEST OF CHICAGO TITLE COMPANY.

FEE: _____ INSTRUMENT NO.: _____

STEVE MANNING
COUNTY RECORDER

BY: _____
DEPUTY COUNTY RECORDER

A ONE LOT SUBDIVISION FOR CONDOMINIUM PURPOSES

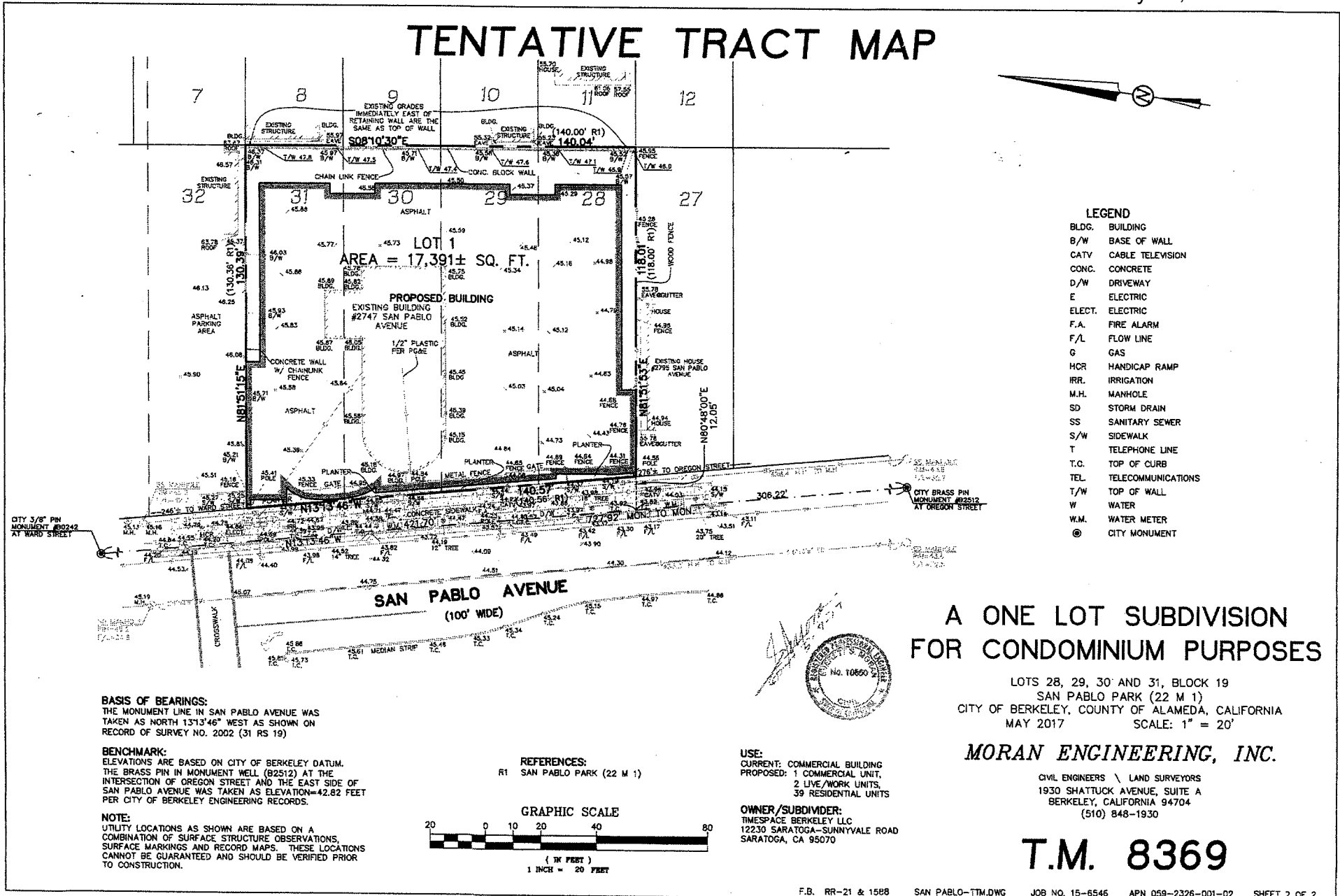
LOTS 28, 29, 30 AND 31, BLOCK 19
SAN PABLO PARK (22 M 1)
CITY OF BERKELEY, COUNTY OF ALAMEDA, CALIFORNIA
OCTOBER 2018

MORAN ENGINEERING, INC.

CIVIL ENGINEERS \ LAND SURVEYORS
1930 SHATTUCK AVENUE, SUITE A
BERKELEY, CALIFORNIA 94704
(510) 848-1930

T.M. 8369

TENTATIVE TRACT MAP



- LEGEND**
- B.L.G. BUILDING
 - B/W BASE OF WALL
 - CATV CABLE TELEVISION
 - CONC. CONCRETE
 - D/W DRIVEWAY
 - E ELECTRIC
 - ELECT. ELECTRIC
 - F.A. FIRE ALARM
 - F/L FLOW LINE
 - G GAS
 - HCR HANDICAP RAMP
 - IRR. IRRIGATION
 - M.H. MANHOLE
 - SD STORM DRAIN
 - SS SANITARY SEWER
 - S/W SIDEWALK
 - T TELEPHONE LINE
 - T.C. TOP OF CURB
 - TEL. TELECOMMUNICATIONS
 - T/W TOP OF WALL
 - W WATER
 - W.M. WATER METER
 - ⊙ CITY MONUMENT

A ONE LOT SUBDIVISION FOR CONDOMINIUM PURPOSES

LOTS 28, 29, 30 AND 31, BLOCK 19
 SAN PABLO PARK (22 M 1)
 CITY OF BERKELEY, COUNTY OF ALAMEDA, CALIFORNIA
 MAY 2017 SCALE: 1" = 20'

MORAN ENGINEERING, INC.

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 1930 SHATTUCK AVENUE, SUITE A
 BERKELEY, CALIFORNIA 94704
 (510) 848-1930

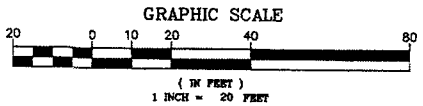
T.M. 8369

BASIS OF BEARINGS:
 THE MONUMENT LINE IN SAN PABLO AVENUE WAS TAKEN AS NORTH 131°46' WEST AS SHOWN ON RECORD OF SURVEY NO. 2002 (31 RS 19)

BENCHMARK:
 ELEVATIONS ARE BASED ON CITY OF BERKELEY DATUM. THE BRASS PIN IN MONUMENT WELL (B2512) AT THE INTERSECTION OF OREGON STREET AND THE EAST SIDE OF SAN PABLO AVENUE WAS TAKEN AS ELEVATION=42.82 FEET PER CITY OF BERKELEY ENGINEERING RECORDS.

NOTE:
 UTILITY LOCATIONS AS SHOWN ARE BASED ON A COMBINATION OF SURFACE STRUCTURE OBSERVATIONS, SURFACE MARKINGS AND RECORD MAPS. THESE LOCATIONS CANNOT BE GUARANTEED AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.

REFERENCES:
 R1 SAN PABLO PARK (22 M 1)



USE:
 CURRENT: COMMERCIAL BUILDING
 PROPOSED: 1 COMMERCIAL UNIT,
 2 LIVE/WORK UNITS,
 39 RESIDENTIAL UNITS

OWNER/SUBDIVIDER:
 TIMESPACE BERKELEY LLC
 12230 SARATOGA-SUNNYVALE ROAD
 SARATOGA, CA 95070



EXHIBIT "A"

NOTES AND DEFINITIONS:

1. THIS PROJECT IS LOCATED IN LOT 1 OF TRACT MAP 8369, IN THE CITY OF BERKELEY, COUNTY OF ALAMEDA, STATE OF CALIFORNIA, AS PER MAP FILED IN BOOK _____, PAGES _____ OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER. THIS PROJECT IS COMPOSED OF A COMMON AREA, 1 COMMERCIAL UNIT, 2 LIVE/WORK UNITS AND 39 RESIDENTIAL UNITS.
2. THE CONDOMINIUM DELINEATED HEREIN IS SUBJECT TO THE PROVISIONS OF THE DAVIS-STIRLING COMMON INTEREST DEVELOPMENT ACT, PART 5, DIVISION FOUR OF THE CIVIL CODE.
3. THIS PLAN AND THE DIMENSIONS SHOWN HEREIN ARE INTENDED TO CONFORM TO CIVIL CODE SECTIONS 4285(a) AND 4285(b), WHICH REQUIRES A THREE DIMENSIONAL DESCRIPTION OF THE PROJECT IN SUFFICIENT DETAIL TO IDENTIFY THE COMMON AREAS AND EACH SEPARATE INTEREST. THE DIMENSIONS SHOWN HEREIN ARE NOT INTENDED TO BE SUFFICIENTLY ACCURATE TO USE FOR THE COMPUTATION OF FLOOR AREA OR AIR SPACE VOLUME IN ANY OR ALL OF THE UNITS.
4. THE DIAGRAMMATIC PLANS INTENTIONALLY OMIT DETAILED INFORMATION OF INTERNAL PARTITIONING WITHIN INDIVIDUAL UNITS. LIKEWISE, SUCH DETAILS AS PROTRUSIONS OF VENTS, BEAMS, COLUMNS, WINDOW CASINGS, AND OTHER SUCH FEATURES ARE NOT INTENDED TO BE REFLECTED ON THIS PLAN.
5. THE COMMON AREA IS ALL OF THE LAND AND REAL PROPERTY INCLUDED WITHIN THE BOUNDARY LINES OF SAID LOT 1, EXCEPT THOSE PORTIONS SHOWN AND DEFINED HEREIN AS CONDOMINIUM UNITS.
6. FOR ALL OTHER DEFINITIONS REFER TO THE "DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS OF 2747 SAN PABLO AVENUE, BERKELEY, CALIFORNIA."
7. IF THERE ARE ANY MATTERS OF CONFLICT OR INCONSISTENCIES BETWEEN THIS CONDOMINIUM PLAN AND THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS, THEN THE PROVISIONS OF THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS SHALL PREVAIL.
8. ALL DIMENSIONS ARE IN FEET AND DECIMALS OF A FOOT.
9. BENCHMARK: ELEVATIONS ARE BASED ON CITY OF BERKELEY DATUM. THE BRASS PIN IN MONUMENT WELL (B2512) AT THE INTERSECTION OF OREGON STREET AND THE EAST SIDE OF SAN PABLO AVENUE WAS TAKEN AS ELEVATION=42.82 FEET PER CITY OF BERKELEY ENGINEERING RECORDS.

SURVEYOR'S STATEMENT

I HEREBY STATE THAT I AM A LICENSED LAND SURVEYOR OF THE STATE OF CALIFORNIA AND THAT THIS PLAN CONSISTING OF 9 SHEETS WAS PREPARED UNDER MY SUPERVISION AND IS BASED UPON THE ARCHITECTURAL PLANS PREPARED BY THOMAS DOLAN ARCHITECTURE, AND IS A DESCRIPTION OF A CONDOMINIUM PROJECT WHICH REFERS TO THE BUILDING PERIMETERS ON THE GROUND AND A THREE DIMENSIONAL DESCRIPTION OF THE PROJECT IN SUFFICIENT DETAIL TO IDENTIFY THE COMMON AREAS AND EACH SEPARATE INTEREST PURSUANT TO THE REQUIREMENTS OF CALIFORNIA CIVIL CODE SECTION 4285 (a)&(b).

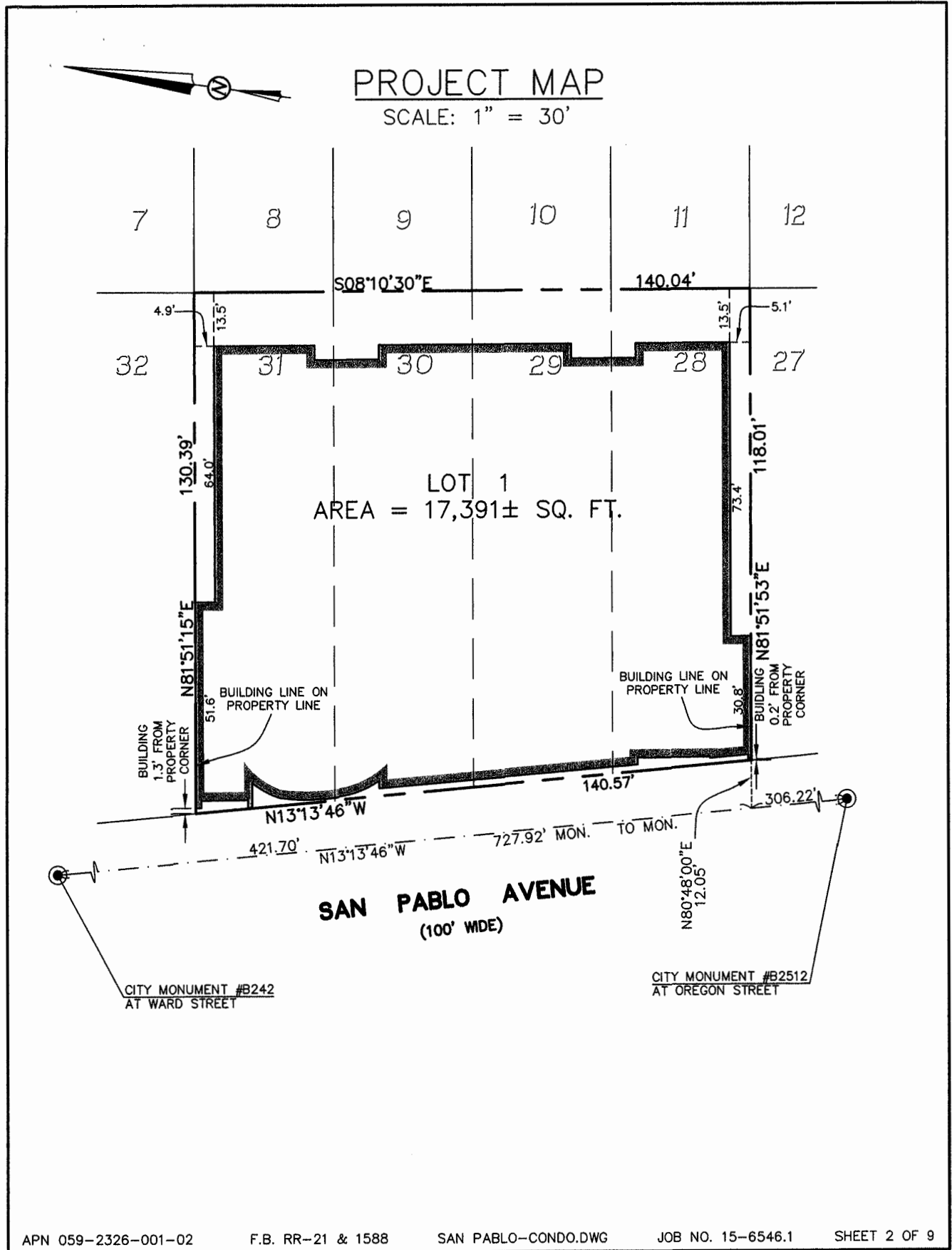
PRELIMINARY CONDOMINIUM PLAN FOR 2747 SAN PABLO AVENUE

LOT 1, TRACT MAP 8369
CITY OF BERKELEY, COUNTY OF ALAMEDA, CALIFORNIA

OWNER
TIMESPACE BERKELEY LLC
12230 SARATOGA-SUNNYVALE ROAD
SARATOGA, CA 95070

MAY 2017

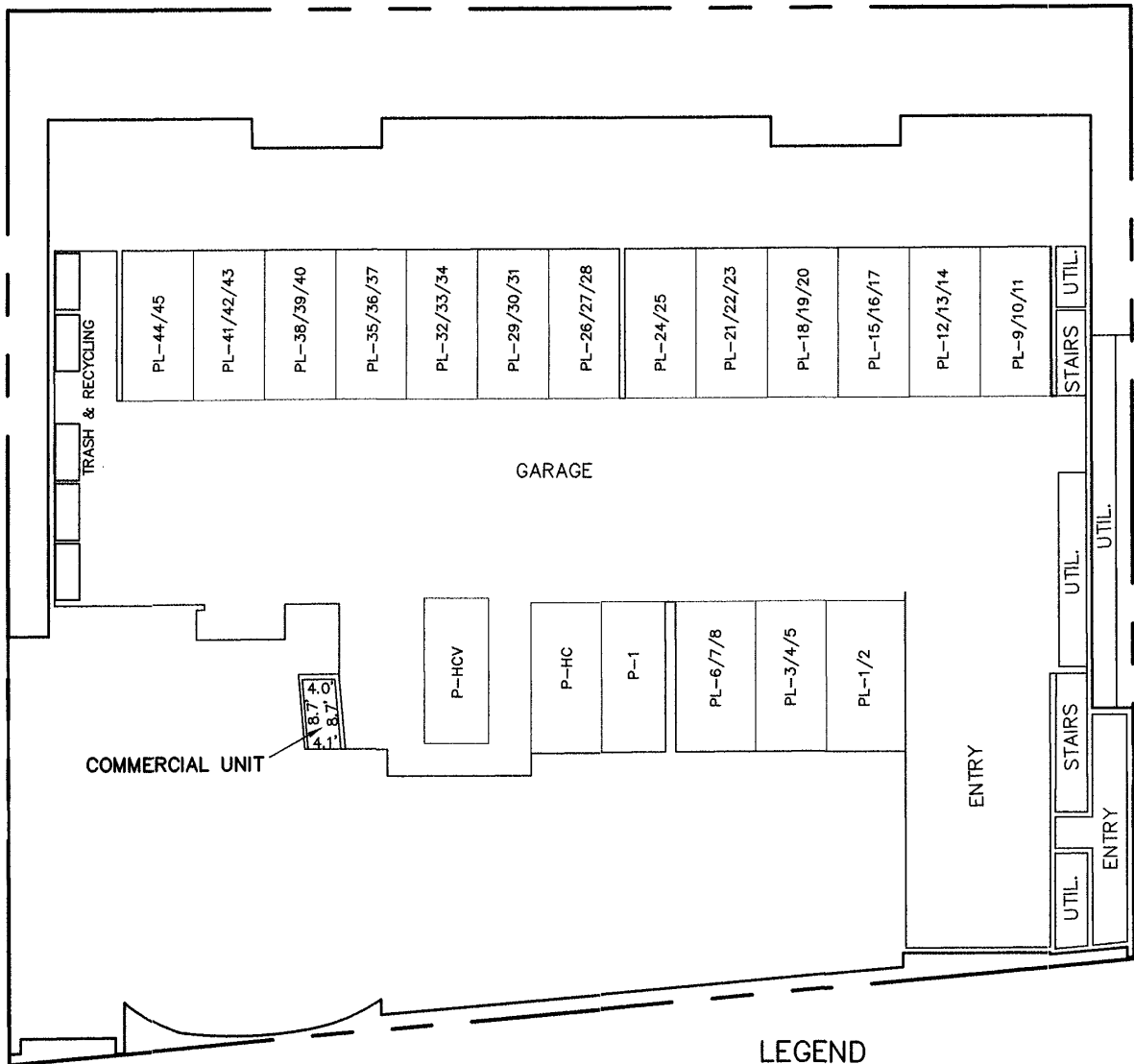
SURVEYOR
MORAN ENGINEERING, INC.
1930 SHATTUCK AVENUE, SUITE A
BERKELEY, CA 94704
(510) 848-1930



GARAGE

LOWER ELEVATION=40.8'
 UPPER ELEVATION=56.6'

SCALE: 1" = 20'



LEGEND

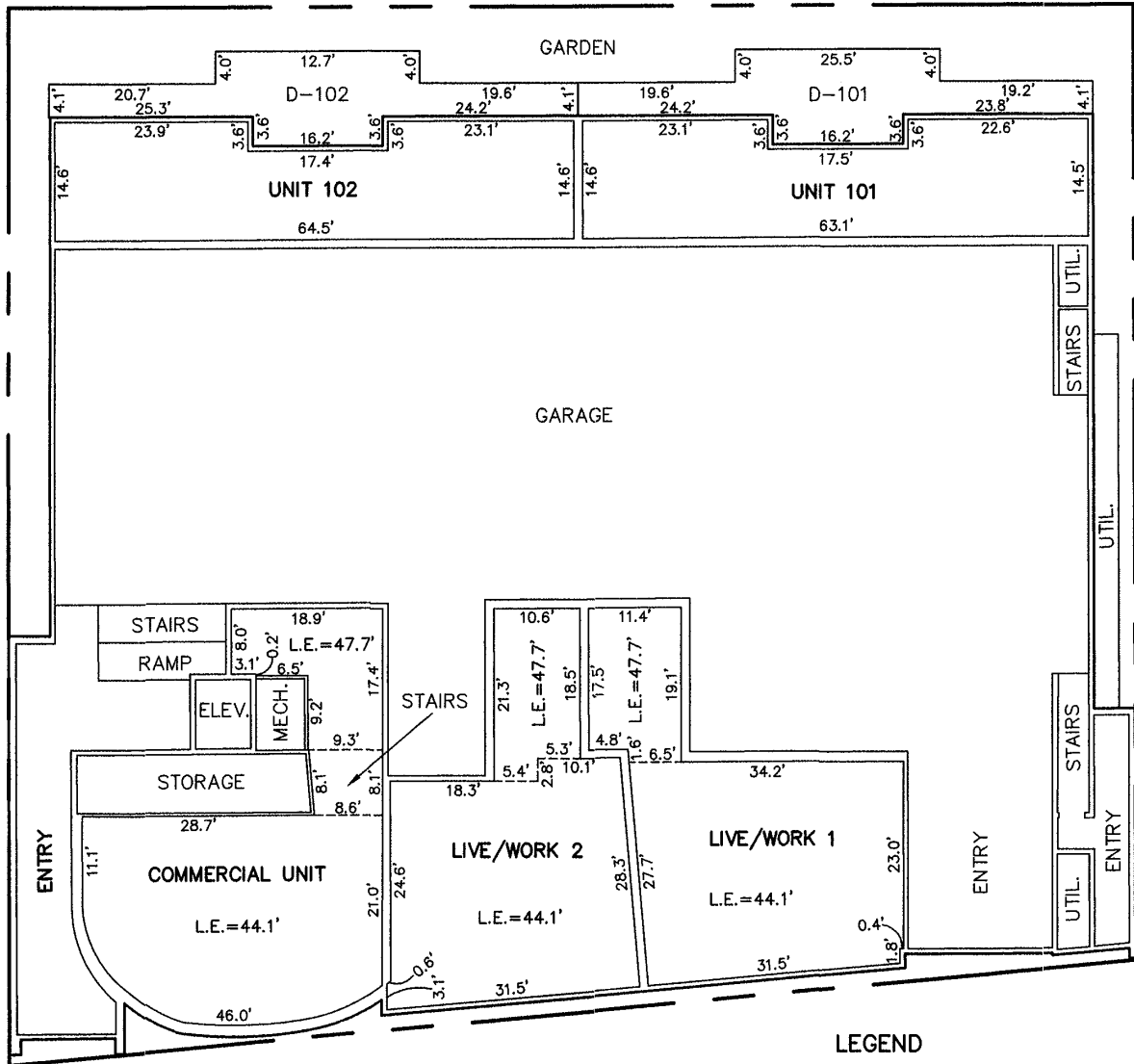
- UTIL. UTILITY
- P PARKING
- PL PARKING LIFT
- HC HANDICAP
- HCV HANDICAP VAN ACCESSIBLE
- P-# DESIGNATED PARKING SPACE

EXTERIOR WALL WIDTHS = 0.6'
 WALLS WIDTHS BETWEEN UNITS = 1.1'

LEVEL ONE

LOWER ELEVATION=47.0' UNLESS OTHERWISE NOTED
 UPPER ELEVATION=56.6' UNLESS OTHERWISE NOTED

SCALE: 1" = 20'



EXCLUSIVE USE
 COMMON AREAS:
 D-# DECK-UNIT

LEGEND

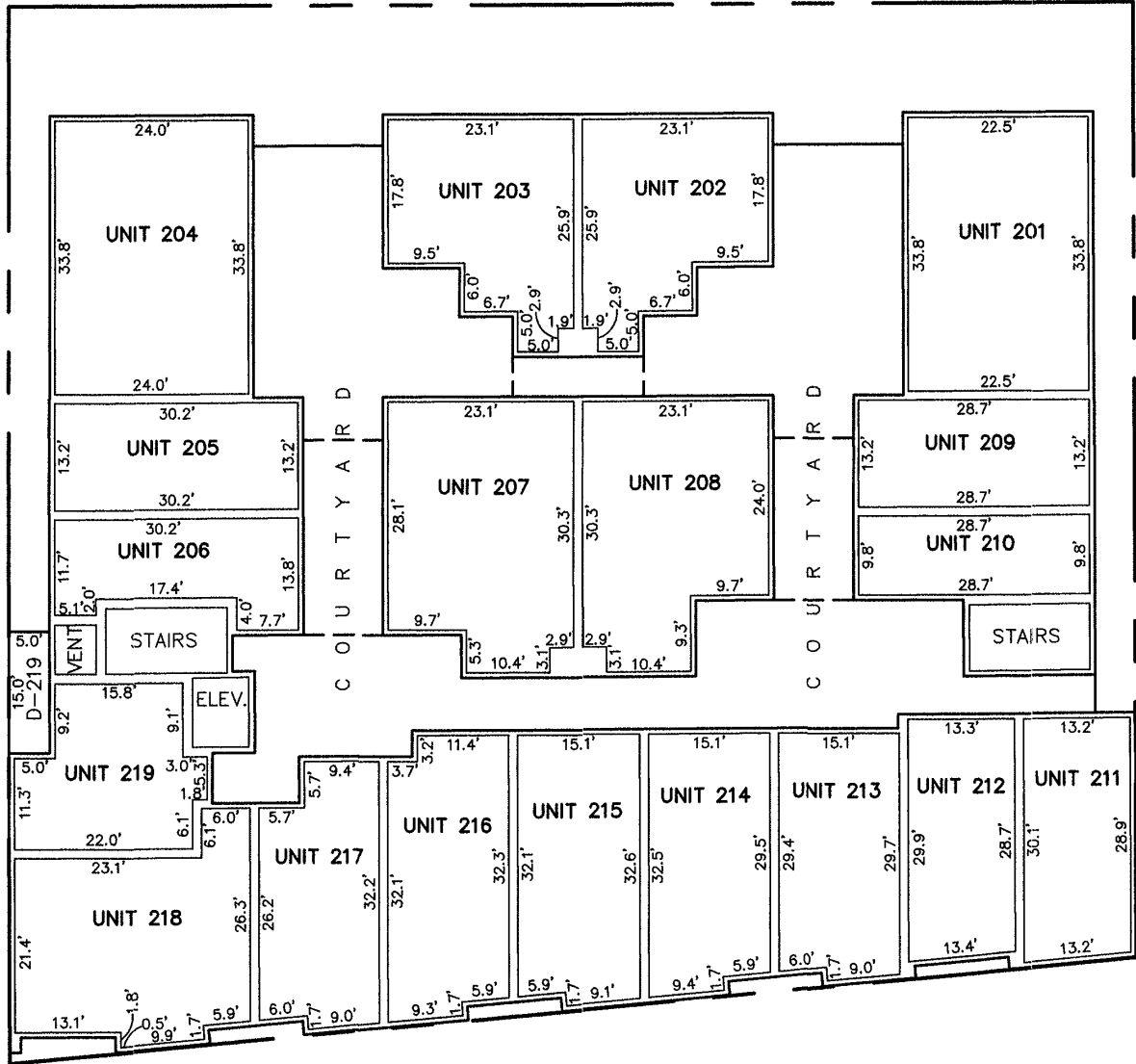
- ELEV. ELEVATOR
- L.E. LOWER ELEVATION
- MECH. MECHANICAL
- UTIL. UTILITY
- U.E. UPPER ELEVATION
- ELEVATION CHANGE

EXTERIOR WALL WIDTHS = 0.6'
 WALLS WIDTHS BETWEEN UNITS = 1.1'

LEVEL TWO

LOWER ELEVATION=57.7'
 UPPER ELEVATION=66.1'

SCALE: 1" = 20'



EXCLUSIVE USE
 COMMON AREAS:
 D-# DECK-UNIT

LEGEND

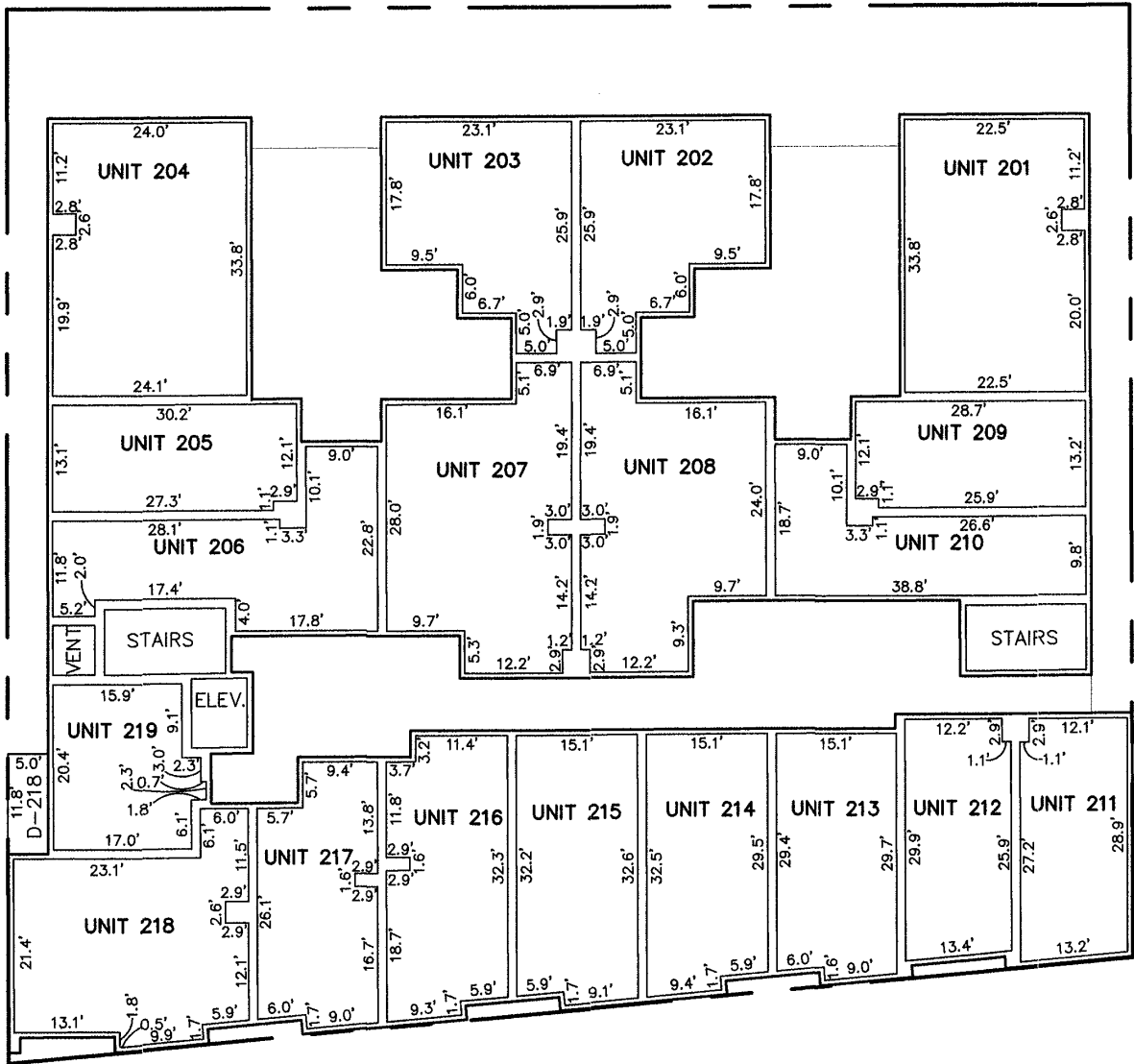
ELEV. ELEVATOR
 --- BUILDING ABOVE

EXTERIOR WALL WIDTHS = 0.6'
 WALLS WIDTHS BETWEEN UNITS = 1.1'

LEVEL THREE

LOWER ELEVATION=67.1'
 UPPER ELEVATION=75.2'

SCALE: 1" = 20'



**EXCLUSIVE USE
 COMMON AREAS:**
 D-# DECK-UNIT

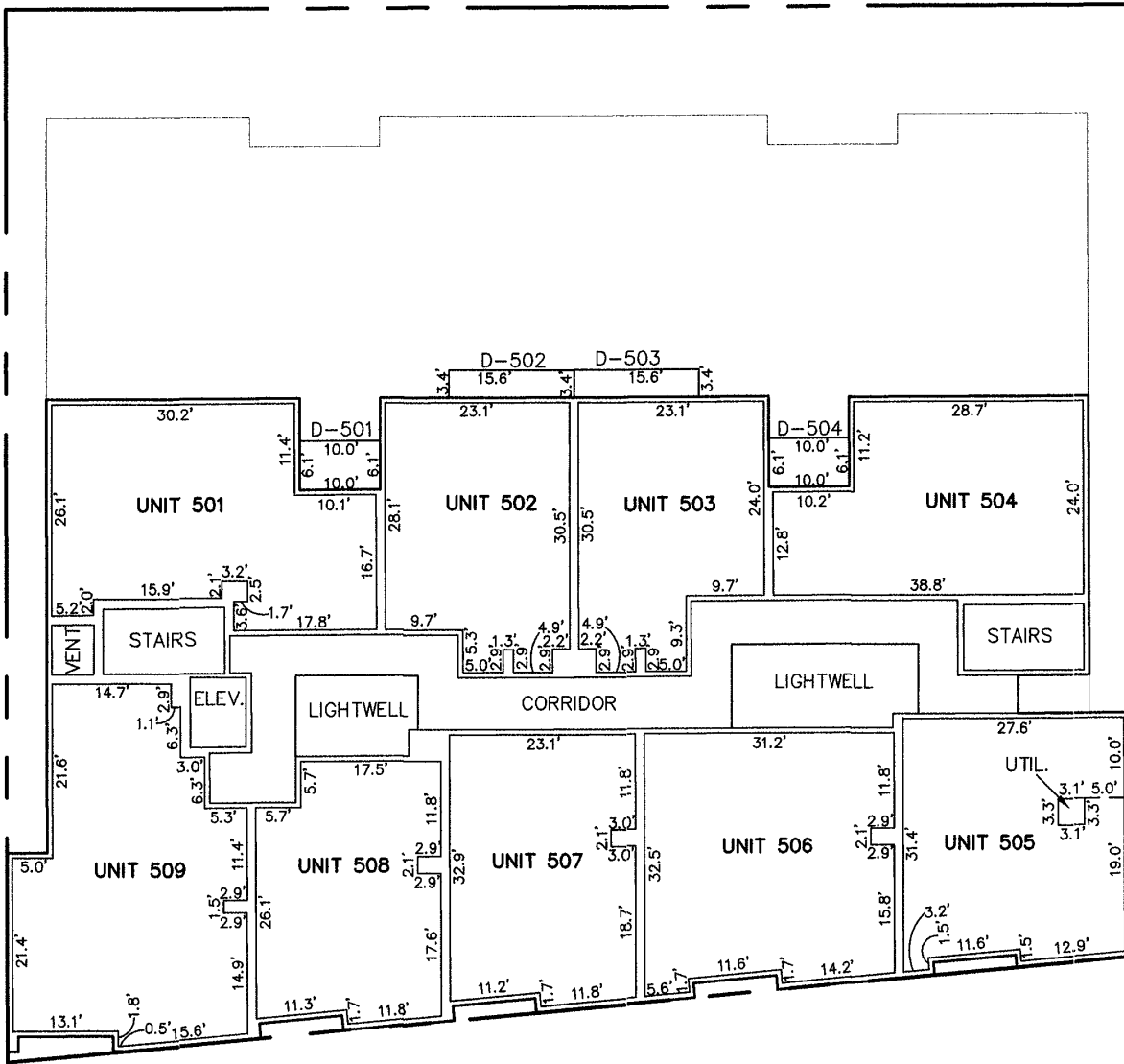
LEGEND
 ELEV. ELEVATOR
 ——— BUILDING BELOW

EXTERIOR WALL WIDTHS = 0.6'
 WALLS WIDTHS BETWEEN UNITS = 1.1'

LEVEL FIVE

LOWER ELEVATION.=86.0'
 UPPER ELEVATION=96.0'

SCALE: 1" = 20'



EXCLUSIVE USE
 COMMON AREAS:
 D-# DECK-UNIT

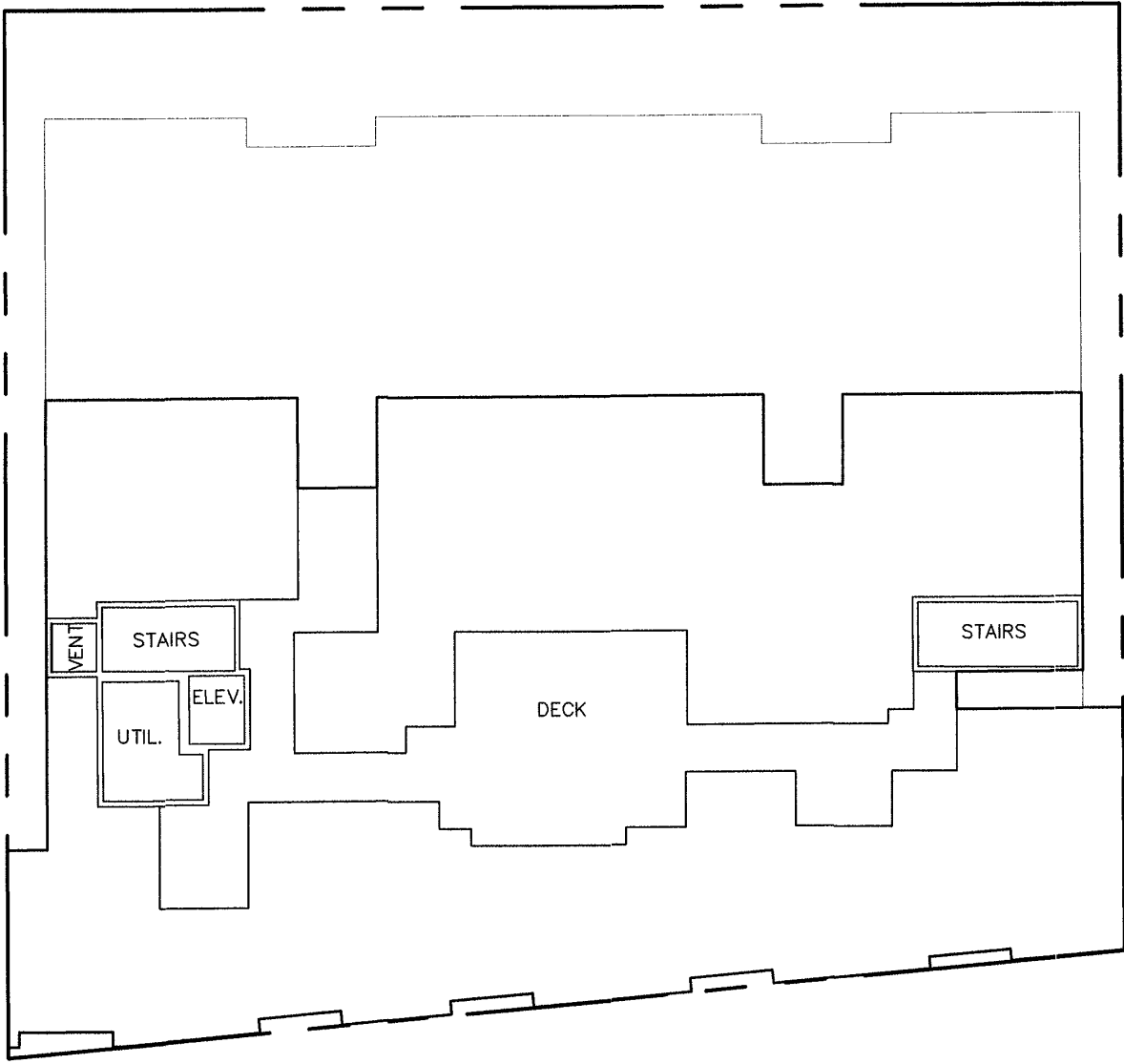
LEGEND
 ELEV. ELEVATOR
 UTIL. UTILITY
 ——— BUILDING BELOW

EXTERIOR WALL WIDTHS = 0.6'
 WALLS WIDTHS BETWEEN UNITS = 1.1'

ROOF

LOWER ELEVATION=87.7'
UPPER ELEVATION=117.0'

SCALE: 1" = 20'



LEGEND

- ELEV. ELEVATOR
- UTIL. UTILITY
- BUILDING BELOW



NOTICE OF PUBLIC HEARING

BERKELEY PLANNING COMMISSION

PROPOSED PROJECT: 2747 San Pablo Avenue

**Where: Multi-Purpose Room
1947 Center Street**

When: January 16, 2019 - 7:00 p.m.

The Berkeley Planning Commission will hold a Public Hearing on the above matter pursuant to Section BMC 21.16 *Tentative Maps*.

PROPOSED PROJECT INFORMATION: The applicant proposes to create thirty-nine (39) residential condominium units, one (1) commercial condominium unit, and two (2) live/work condominium units in a new five-story mixed-use building.

PROJECT APPLICANT: Yihua Li

ENVIRONMENTAL REVIEW STATUS: Construction of the project is categorically exempt pursuant to Section 15332 of the CEQA Guidelines ("In-Fill Development Projects") and approval of the Tentative Map is

also categorically exempt pursuant to Section 15301, of the CEQA Guidelines, which involves the division of existing multifamily or single-family residences into common interest ownership.

TO COMMENT ON THIS APPLICATION: Response to this notice can be made verbally at the Public Hearing and/or in writing before the Hearing. The public is advised that the Commission may limit the number of speakers and the length of time allowed to each speaker. Persons wishing to offer testimony are encouraged to submit their comments in writing. Written comments should be mailed or delivered directly to the Land Use Planning Division, 1947 Center Street, Berkeley, CA 94704. Comments received no later than **Tuesday, January 8, 2019**, will be included in the Commission agenda packet. Comments received thereafter will be submitted to the Commission as supplemental communications at the meeting.

FOR FURTHER INFORMATION: Alene Pearson, Land Use Planning Division, 1947 Center Street, 2nd Floor, Berkeley, CA 94704; PH: (510) 981-7489, FAX: (510) 981-7420, TDD: (510) 981-6903, EMAIL: apearson@cityofberkeley.info.

LEGAL LIMITATIONS: If you object to a project or to any City action or procedure relating to the project application, any lawsuit which you may later file may be limited to those issues raised by you or someone else in the Public Hearing on the project, or in written communication delivered at or prior to the Public Hearing. The time limit within which to commence any lawsuit or legal challenge related to these applications is governed by Section 66499.37 of the Government Code, unless a shorter limitations period is specified by any other provision. Under Section 66499.37, any lawsuit or legal challenge to any quasi-adjudicative decision made by the City must be filed no later than the 90th day following the date on which such decision becomes final. Any lawsuit or legal challenge, which is not filed within that 90-day period, will be barred.

COMMUNICATION ACCESS: To request a meeting agenda in large print, Braille, or on audiocassette or to request a sign language interpreter for the meeting, call (510) 981-7480 (voice) or (510) 981-7474 (TDD). Providing at least FIVE working days notice will ensure availability. Agendas available at: www.ci.berkeley.ca.us.





Planning and Development Department
Land Use Planning Division

STAFF REPORT

DATE: January 16, 2019
TO: Members of the Planning Commission
FROM: Elizabeth Greene, Senior Planner
SUBJECT: Student Housing in the Southside

INTRODUCTION

On September 5, 2018, the Planning Commission considered ways to facilitate the creation of additional student housing in the Southside area. The Commission reviewed City Council (Council) referrals and the More Student Housing Now resolution. It also considered proposed State laws and discussed the environmental analysis that would be necessary for different options.

This report provides information requested at the September meeting. It describes options which could be implemented in the shorter term, and those that have moderate and long-range timelines. It also provides information regarding the preparation of a new CEQA document to provide environmental analysis for future regulatory changes. The report concludes with options for the Commission to consider as ways to promote affordable student housing.

BACKGROUND

At the September 5, 2018 Commission meeting, City staff provided key information for the Commission to consider when formulating options for increasing opportunities for student housing. These included Council referrals, State law, and the status of existing CEQA documents. The discussion focused on zoning changes in the area immediately south of the UC campus, known as the Southside, which is already home to many students and has a specific plan (the Southside Plan (2011)) and zoning ordinances in place to allow high-density housing.

The Commission asked staff to continue to analyze the five actions proposed in the September 5, 2018 report (see Attachment 1), giving priority to the car-free housing and conversion of commercial space options and considering the affordability incentives and requirements of each. Staff was also asked to consider proposals from Commissioner Wrenn (see Attachment 2), explore ways to expedite a new environmental analysis, continue to analyze an in-lieu fee option for density bonus projects, and to prioritize actions which can be implemented quickly and inexpensively.

DISCUSSION

The following section contains descriptions and evaluations of options for the Commission to consider that could increase opportunities for student housing in the immediate, short and long term:

- Immediate (No ordinance changes necessary): SB 1227 and UC development of housing;
- Short-term (Zoning ordinance changes which don't require additional CEQA analysis): Car-Free Housing and conversion of ground-floor retail; and
- Long Term (Zoning ordinance changes which require additional CEQA analysis of impacts): Modifications of development standards, such as height, FAR, and open space.

This section also explains the status of on-going studies related to community benefits and the possible need for a CEQA analysis to implement ordinance changes, and also how Commissioner Wrenn's recommendations fit into these options.

Immediately Available Options

These are options which can be implemented immediately because they do not require changes to the Zoning Ordinance and thus do not trigger any CEQA review.

SB 1227

This bill became law after the Planning Commission meeting in September. It requires cities and counties to grant a 35% density bonus when an applicant for a housing development of five or more units proposes a project that includes at least 20% of the units designated for lower income students. Previous density bonus laws did not have a way to consider affordable student units (counted as beds, not dwellings) as part of a project.

This law has several features which will affect the development of student housing in the Southside:

1. Definition of a unit: For affordable student units, a unit is equivalent to one rental bed and its shared portion of common area space. This will allow Group Living Accommodation (GLA) projects to be eligible for density bonuses.
2. Affordability requirement: The units must remain affordable for 55 years. This is consistent with other density bonus projects.
3. Renter qualifications: To be eligible for an affordable student unit, an individual must be enrolled full time at a qualified college or university and either eligible for or receiving financial aid from the institution. Enrollment and financial aid status will be verified by the institution.
4. Priority for homeless: Priority for the units shall be given to low income students experiencing homelessness, as verified by a homeless service provider or the institution.
5. Rents: Rents will be calculated at 30% of 65% of the area median income for a single-room occupancy unit type.

This law could result in more GLAs, which are often used for student housing. No changes would be required to the Zoning Ordinance.

Encourage UC to develop housing on UC-owned land

The City Council could encourage UC Berkeley to move forward with plans to develop housing on UC-owned land. Projects on UC-owned property may be able to progress faster than standard projects because they are not subject to the same kind of discretionary review and their impacts may already have been considered in University environmental documents.

This has the potential to create a significant number of new units designed specifically for student housing. The Chancellor has committed to adding 7,500 new beds by 2028.

Short-Range Options (9 months – 1 year)

The short-range options require modifications to the Zoning Ordinance. These changes would not significantly change the number of units compared to those considered by the original Southside Plan EIR, and therefore do not exceed the capacity studied in the existing CEQA analysis, so no new CEQA analysis would be required.

Expanding Car-Free Overlay

In 2011, the Southside Plan established a Car-Free Housing overlay which removed the requirement for parking at new dwelling units and Group Living Accommodations (GLA). This overlay was applied to the C-T and R-SMU Districts and approximately two-thirds of the R-S District. See Attachment 3 for a map of the Southside area.

Since the passage of the Southside Plan, 458 privately-developed units have been built in the Car-Free-Housing overlay district, compared to 19 in the areas of the Southside outside the overlay. It is unclear whether there is a direct correlation, or if it simply the case that the area within the overlay also has the greater potential for density due to its development pattern and other zoning standards. It is worth pointing out that within the R-S district, there were 5 developments within the overlay portion, while the only development in the R-S district outside of the overlay was a UC project that was also built without providing parking.

Expanding the Car-Free Housing overlay to the remainder of the R-S District may make that area more attractive to developers and result in additional projects. Most of these properties are already developed with student housing or are owned by UC. The two blocks east of Fulton Street between Durant Avenue and Channing Way, and a portion of the block west of Dana Street between Channing Way and Haste Street, are developed with a wide range of densities on lots of varying size. Removing the parking requirement could increase the feasibility of redeveloping these properties.

Expanding this overlay into the R-3 District within the Southside area (i.e. thereby encompassing all of the Southside area) could incentivize new development there as well, and could result in a significant number of new units; staff believes additional analysis should be conducted before pursuing such a course of action to determine the potential impacts on the neighboring districts which abut the Southside.

While removing parking regulations could encourage housing development in general, it could conflict with the Green Affordable Housing effort to use parking waivers as an incentive to create affordable housing.

Convert ground floor commercial tenant spaces to residential units

Several Council referrals recommended allowing the conversion of ground floor retail space into residential units, particularly in areas that experience a high commercial vacancy rate. The current C-T zoning, which extends along Telegraph Avenue and portions of Durant Avenue and Bancroft Way, prohibits residential use on the ground floor and requires transparency or window displays for offices on the ground floor in order to contribute to the pedestrian experience.

Although interesting storefronts and ground floor activity are generally preferable in pedestrian oriented commercial districts, it could be retained while also allowing ground floor residential units behind retail storefronts. This was recently permitted as part of a Density Bonus project at 2546-2580 Bancroft Avenue, which allowed two residential units, along with other residential space, behind four commercial tenant spaces.

There is not general consensus regarding the minimum dimensions a tenant space needs to have in order to allow for a viable business (see Attachment 4), and the numbers probably vary according to the district and the types of uses expected to locate there. In the Bancroft Avenue example mentioned above, the commercial spaces are 60 – 70 feet deep. San Francisco requires commercial activity (“active uses”) in the first 25 feet behind a street frontage, while Cleveland requires a 40-foot depth.

Additional study and outreach to the business community would be needed to determine the best minimum depth for commercial tenant spaces in the Southside. Depending on the figure and the overall depth of the building or lot, this could allow property owners to consider adding an additional half floor of housing to existing or new buildings. This is not expected to add a significant number of units.

Long-Range Options (18 months – 3 years)

The long-range options will require a new environmental study prior to ordinance changes because the changes are anticipated to result in growth beyond that anticipated in the existing Southside EIR.

As mentioned at the September meeting, the Southside Plan has been modified twice since its 2011 adoption to allow for additional density. The analysis conducted with each change determined that any growth would be within the capacity studied in the EIR, and no new environmental analysis was needed.

Since 2011, 472 units in private (non-University) projects have been approved in the Southside area. Based on these figures, development of non-University residential units in the Southside is likely to exceed the development potential anticipated in the Southside Plan EIR. Future changes to the Zoning Ordinance which could generate significant growth will require a new environmental study. These are consistent with Commissioner Wrenn’s recommendations from September.

Modifications to the Zoning Ordinance could include the following:

1. Increased building height limits or allowed number of stories
2. Increased Floor-Area-Ratio (FAR)
3. Reduced setbacks
4. Reduced open space requirements

The Commission could also consider reclassifying all or portions of the R-3 District to a higher density district, such as R-S or R-SMU.

These types of changes are the most likely to result in significant increases in housing units and GLAs, as they will increase the size of residential and mixed-use buildings permitted in the Southside. In addition to the environmental analysis, these changes will also require study to determine how to best increase the size of existing and new buildings while respecting the existing character of the Southside.

On-going Studies

There are several current and imminent studies that are being conducted for citywide consideration that could affect affordable / student housing development in the Southside, either by increasing incentives for building affordable units, or by changing development standards to allow more units in general.

Community Benefits

There are currently two studies to determine how community benefit requirements could be used in Berkeley. The information that comes out of these studies could be used to develop a program that can be used in the Southside.

1. A development feasibility study, which considers the effect of various development fees on the likelihood of new residential development, is being undertaken at the direction of City Council. The outcome could inform the decision on ideal densities and fee burdens for different housing types.
2. A pilot project for a local affordable housing incentive program is being studied as part of the Adeline Corridor Specific Plan. The program could establish density bonuses for developers, beyond those provided through the State Density Bonus program, based on a higher percentage of affordable units provided in a project.

Since City resources are already being focused on these studies, it is advisable to wait for the results of these studies rather than starting similar studies in the Southside.

Density Bonus studies

The City is also evaluating possible changes to local implementation of the State's Density Bonus regulations.

1. The City has contracted Opticos to study housing density in Berkeley. This would inform density standards that could be included in zoning districts, and would modify how density bonus projects are evaluated.
2. Similar to the incentive program described above, the City could develop a separate, in-lieu program that could allow developers to pay in-lieu fees for affordable units and receive additional density bonuses from the City.

CEQA Analysis of Zoning Ordinance Changes

As mentioned at the September meeting, the Southside Plan has been modified twice since its 2011 adoption to allow for greater development potential. The analysis conducted with each change determined that any growth would be within the capacity studied, and no new environmental analysis was needed.

Since the September meeting, Council has approved \$250,000 for a new environmental analysis to study ordinance changes which could result in additional density in the Southside. Staff is determining the range of development standard modifications and resulting development capacity to include in this new analysis. A Request for Proposals (RFP) to select a consultant is expected to be released in early spring 2019.

Because this analysis would allow the City to consider changes to development standards which could significantly change the development potential in the Southside, it could lead to a significant number of new housing units.

CONCLUSION

Based on the Council referrals, State law and environmental analysis requirements described in this report, Staff believes the following actions are the most efficient path for the Planning Commission to encourage affordable student housing in Berkeley:

- 1) Draft a letter for Council to send to UC Berkeley encouraging development of housing on University-owned property;
- 2) Direct staff to schedule a Public Hearing to consider ordinance language to expand the Car-Free Housing overlay to the entire R-S District; and
- 3) Give staff direction on development standards to consider in a new environmental document.

ATTACHMENTS

1. 9/5/18 Planning Commission staff report
2. Commission Wrenn's 9-5-18 recommendations
3. Map of the Southside area
4. Article: Designing At Ground Level (The Urbanist, June 2014)



Item 9
September 5, 2018

Planning and Development Department
Land Use Planning Division

STAFF REPORT

DATE: September 5, 2018
TO: Members of the Planning Commission
FROM: Elizabeth Greene, Senior Planner
SUBJECT: Student Housing in the Southside

INTRODUCTION

On January 23, 2018, the City Council (Council) adopted the More Student Housing Now (MSHN) resolution to facilitate both University and private housing investment in the campus area. This resolution requests immediate attention by prioritizing Planning Commission (PC) and Council action to remove impediments, such as requirements for parking or restrictions on residential units in commercial space (see Attachment 1).

Prior to the MSHN resolution, the Council asked the PC to consider multiple options to promote affordable housing in the City. Many of these referrals specifically focused on student housing or affordable housing in the Southside, a neighborhood that includes the campus area referred in the MSHN resolution. In response to the referrals, the PC established a Subcommittee on Affordable Housing and Community Benefits to consider ways to advance affordable housing in Berkeley. In its final report (June 20, 2018), the Subcommittee identified the need for additional student housing as an important issue, and recommended the PC focus on this matter.

This report focuses on developing options to create more opportunities for affordable student housing in Berkeley. It includes analysis of the Council referrals and pending state legislation regarding this topic. It also considers whether future changes could be included in the existing CEQA analysis developed for the Southside Plan. The report concludes with options for a path forward to address ways to promote affordable student housing.

BACKGROUND

State and local laws impact the housing that is built in a city. Below are key state regulations and local actions that have impacted housing availability in Berkeley in general and student housing in particular.

State housing regulations

Affordable housing has always been an important issue throughout California and in the Bay Area in particular. In order to determine how local jurisdictions address existing and future housing needs, the State requires local jurisdictions to submit updated Housing Elements every eight years and provide annual progress reports on housing approval and construction.

In recent years, housing prices have increased substantially while housing availability has dropped, creating a housing affordability crisis for California residents. To address this crisis, the State developed statewide mandates to expedite local housing permitting and reduce local restrictions on housing construction. Among the changes approved to date are the Housing Accountability Act (HAA) and new Accessory Dwelling Unit (ADU) regulations, which limit the ability of local jurisdictions to deny permits for housing, and SB 35, which streamlines multi-family housing approvals if project meets certain criteria, including provision of affordable units.

Additional legislation to remove local barriers to affordable housing is currently being considered by the State legislature. One such proposal, SB 1227, will be described in the Discussion section of this report.

City and UC Berkeley actions related to student housing

As the home of the flagship University of California campus (UC), Berkeley's housing concerns are especially relevant for the thousands of students that move to the city to attend college. In February 2018, the Commission held a one-hour forum in which UC Berkeley students described the difficulties they have experienced finding affordable housing in Berkeley and presented the PC with several ideas for the city to promote student housing.

Most student housing in Berkeley is in the Southside, a 27-block area located immediately south of the UC Berkeley campus, between Bancroft and Dwight, and Fulton and Prospect (see Attachment 2). This area contains most of the University's dormitories, co-ops, fraternities and sororities, and private dormitories. It also has high concentration of private housing which has historically provided housing for students.

According to a statement by Chancellor Carol Christ in January 2018, enrollment at the UC Berkeley campus has increased by 4,700 new students since 2013, a 13% increase.¹ The university currently provides the lowest percentage of beds for its students in the UC system, approximately 8,700 beds for 42,000 undergraduate and graduate students. Chancellor Christ has committed to add 7,500 new student beds over the next 10 years to address this situation.² Potential sites for these units include UC-owned land in the Southside, Albany Village and the Richmond Field Station.³

In 2011, the City Council approved the Southside Plan. This document was created to guide the development of the Southside until at least 2020. The Plan has two major goals:

¹ San Francisco Chronicle, August 21, 2018.

² Berkeley News, August 20, 2018.

³ Draft Housing Master Plan Task Force Report, January 2017.

create additional housing at appropriate locations to help meet the housing demand for students and people employed nearby; and provide a high-density residential and commercial mixed-use edge to the UC campus, transitioning to lower density residential at the east and south edges of the Southside.

Concurrent with the Plan adoption, the Council also approved zoning changes to implement the Plan. This included:

- the creation of two new, high-density residential zoning districts, Residential Southside (R-S) and Residential Southside Mixed Use (R-SMU); and
- the development of a Car-Free Housing overlay district which eliminated parking requirements in the entire Commercial Telegraph (C-T) and R-SMU districts and most of the R-S district.

DISCUSSION

The following section contains the following key information for the Commission to consider when developing options for increasing opportunities for student housing:

- Analysis of the five Council referrals related to affordable housing;
- The City Attorney’s analysis of the possible local density bonus regulations;
- Description of SB 1227 related to creating affordable student housing; and
- Potential CEQA analysis that may be necessary to implement changes.

Council referrals

Since 2016, the City Council has forwarded five referrals to the Planning Commission related to affordable housing in addition to the MSHN. Outlines of these referrals and their possible effect on student housing in Berkeley is included below; see Attachment 3 for the text of these referrals.

Table 1: Description of Council Affordable Housing Referrals

Referral #	Date of Referral	Referral Description
1	7/12/16	Allow increased development potential in the Telegraph Commercial (C-T) district between Dwight Avenue and Bancroft Avenue and refer to the City Manager to develop community benefit requirements, with a focus on labor practices and affordable housing.
2	4/4/17	Create a Use Permit process to allow non-commercial use on the ground floor in appropriate locations, where commercial might otherwise be required. A pilot project is suggested for the C-T district.
3	5/30/17	Develop a pilot Density Bonus program for the C-T district to generate in-lieu fees that could be used to build housing for homeless and extremely low-income residents.
4	10/31/17	Facilitate student housing by increasing the height and Floor Area Ratio (FAR) in the portions of the R-SMU, R-

		S and R-3 districts which are located within the Southside area west of College Avenue.
5	1/28/18	Convert commercial space in the C-T district to residential use, expand the Car-Free Housing overlay in the Southside, allow two high-rises for student housing, and consider micro-units and modular units.
6	5/1/18	Convert commercial space into residential use within all districts in the Southside located west of College Avenue.

Staff evaluated these five referrals to determine how they might interact with each other and the effectiveness of each to promote affordable student housing. Table 2 identifies how each referral would impact housing in general and for students, what districts might be impacted, and any special considerations.

Table 2: Analysis of Housing Referrals

#	Referral topic	Would create additional housing? (if No, see special considerations)	Applies only to student housing?	Specific Zoning Districts?	Special considerations
1	Community benefits	Yes, if the community benefits include affordable housing.	No	C-T	Would only create community benefit requirements for future development. Development standards mentioned in referral were adopted two years ago.
2	Ground floor non-commercial uses	Yes	No	Portion of C-T	Pilot program – eventually to be applied citywide.
3	Pilot Density Bonus Program	No	No	C-T	State law may not permit density bonus benefits if the units are not provided on site.
4	Increase height and FAR	Yes	Yes	R-SMU, R-S, R-3	
5	Convert commercial space to residential, car-free housing, increase height and	Yes	Yes	C-T, R-S, R-3	

	allow alternative residential units				
6	Convert commercial space to residential	Yes	Yes	C-T, R-SMU, R-S, R-3	

Staff analysis of the referrals determined that one of the referrals, Referral 3, would not promote housing.

- Referral 3 would create a density bonus program specific to Berkeley. It would be different from the State’s Density Bonus program in that it would allow developers to obtain additional density, incentives and concessions by paying an in-lieu fee rather than providing affordable units on site. According to the City Attorney’s analysis (Attachment 4), payment of an in-lieu fee is not consistent with State law and should not be adopted.

The five remaining referrals could all add housing in the Southside.

- Referral 1 is linked with development standards that were adopted by the Council two years ago. This referral now focuses on developing community benefits for projects in the majority of the C-T district. A community benefit requirement for affordable housing could increase the number of affordable units in future development projects. Similarly, staff is currently considering an affordable housing community benefit requirement in the Adeline project area.
- Referrals 2, 5 and 6 call for conversion of commercial space to residential units. Referral 2 is limited to conversion of ground floor commercial space to residential space only in the C-T district. Referrals 5 and 6 are broader in scope and would consider conversion of commercial space throughout the Southside and is not limited to the ground floor, though Referral 5 would prohibit conversion of commercial space along Telegraph Avenue.
- Referral 4 would study increased height and FAR standards in the Southside’s residential districts. The R-S and R-SMU districts were designed to be high-density residential districts; buildings in these districts can range from 3-5 stories, depending on their location and the issuance of a Use Permit. The R-3 district was intended to be a buffer between these higher density districts and the surrounding area which have less dense zoning designations.
- Referral 5, in addition to proposing conversion of commercial space to residential, also calls for the Planning Commission to consider expanding the Car-Free Housing overlay within the Southside, allowing at least two high-rise buildings for student housing, and encouraging micro-units and modular units, which may create housing on a faster and less expensive basis.

The impact of these changes on student housing development will depend on the number of buildings that could be subject to the changes. Any changes would need to consider the impact of the changes on the residential and commercial uses in and around the Southside.

Analysis of SB 1227

In addition to local laws, the State legislature is considering a modification to the State Density Bonus law. Under current Density Bonus law, a developer can receive a density bonus and other incentives and concessions for providing a specified percentage of very-low, low or moderate income units in a project. This bill would give developers the same inducements if they agree to build affordable units specifically for students enrolled full-time in college programs. If this bill passes, it is expected to encourage construction of affordable student housing by providing an incentive to developers that does not exist today. See Attachment 5 for an analysis of SB 1227.

CEQA Analysis of Zoning Ordinance changes

Zoning ordinance changes, or other policy decisions or actions undertaken by a public agency, must be studied to determine and mitigate significant effects on the environment. The Southside Plan Environmental Report (EIR), certified in 2011, anticipated substantial growth within the Southside Plan area. Based on an assessment of the 24 sites deemed to have the greatest likelihood for development, the EIR projected that the Southside Plan would add 578 new non-University (i.e. privately developed) residential units to the Southside area by the EIR's horizon date of 2020. New University developed units are assessed by UC's 1990-2005 Long Range Development Plan (LRDP) EIR.

Since the Plan's adoption in 2011, the development standards in the C-T district have been modified twice to allow for greater development potential. These changes were analyzed to determine whether they would generate growth beyond that studied in the Southside Plan EIR. In each change, it was determined that any growth would be within the capacity studied, and that no new environmental analysis was needed. See Attachment 6 for more information on these changes.

Since 2011, 13 applications for private (non-University) projects (projects adding more than five units each) have been received.⁴ Three of these projects have been built and nine have been approved. The remaining project is pending a ZAB decision. During the same time, two housing projects have been built on University-owned property in the Southside. See Table 3 for a summary of the new and proposed units in the Southside.

Table 3: Comparison of Growth Studied in Southside Plan with Proposals submitted as of July 2018

⁴ The Sequoia Apartments project at 2441 Haste Street replaced a 39-unit building that was destroyed by a fire with a 42-unit building. Since this was only a net gain of 3 units, that project is not included in these figures.

	Units anticipated by Southside Plan	Units built to date ⁵	Units in approved projects pending building permits	Units in projects pending zoning approval
New Non-University Residential Units	578	166	226	122
New University Residential Units	0	491	N/A	N/A

Based on these figures, development of non-University residential units in the Southside is likely to exceed the development potential anticipated in the Southside Plan EIR. Future changes to the Zoning Ordinance which could generate growth cannot necessarily rely on the impact analysis of the Southside Plan EIR. A new environmental analysis may be necessary to determine the potential impacts of new units or changes to the Zoning Ordinance which could generate new units.

CONCLUSION

Based on the Council referrals, possible state regulations and environmental analysis requirements described in this report, staff believes the following actions are the most efficient path for the Planning Commission to encourage affordable student housing in Berkeley:

- 1) Consider creating a community benefit that that would require affordable housing in new development projects;
- 2) Evaluate Zoning Ordinance changes that would modify height and FAR standards within the residential zoning districts in the Southside (R-SMU, R-S and R-3);
- 3) Evaluate Zoning Ordinance changes that would allow commercial space to be converted to residential space within zoning districts in the Southside (C-T, R-SMU, R-S and R-3);
- 4) Evaluate changes to parking requirements that would expand the Car-Free Housing overlay and remove parking requirements from more areas within the Southside; and
- 5) Implement any necessary changes to the City’s Density Bonus program should SB 1227 pass.

ATTACHMENTS

1. More Student Housing Now resolution (January 23, 2018)
2. Map of Southside Area

⁵ To determine the number of units in Group Living Accommodations (GLA), two beds are considered one dwelling unit.

3. Text of Council Referrals related to Affordable Housing
4. City Attorney analysis of in-lieu fees in Density Bonus projects (Referral 3)
5. Text of SB 1227
6. Changes to C-T District development standards since 2011

TO: Planning Commission, City of Berkeley

FROM: Rob Wrenn, Planning Commission member

RE: 15% City Density Bonus and Zoning Changes in the Southside

This is a revised version of a memo that I sent to the Planning Commission Subcommittee on Housing and Community Benefits for its March 2018 meeting. In that memo, I proposed that the subcommittee support the 35% Density Bonus as proposed by Councilmember Worthington that would allow developers in the Southside to get the bonus in return for paying a per unit fee without having to building on-site below market affordable units as per the State Density Bonus. It's my understanding that staff have determined that it would not be legal for the City to implement such a local density bonus as it would conflict with State Density Bonus law. This is unfortunate, as I believe paying a fee would be particularly appropriate in the Southside, a heavily student area, because few students would qualify for affordable on-site units. I have dropped that proposal from this memo.

1) Create an Additional 15% Density Bonus in the Southside

As proposed in the February 21, 2018 staff report, page 51 of 142, last paragraph, an additional 15% density bonus in the Southside for providing additional qualifying units or payment of the fee for building off-site below market units, the fee to be determined by a study. "Provide developers the option of receiving an additional 15% Density Bonus (up to 50% total) in exchange for providing additional qualifying units. Qualifying units could be provided either on-site or off-site through payment of the fee described above. Calculation of the additional Density Bonus would follow the formula established in SDBL (see Attachment 5 – Density Bonus Chart)."

I propose that the Planning Commission recommend this change. The chart on page 135 of 142 of the Feb 21 packet shows how this would work if the developer opted to provide the units on site. (see attached) This proposal suggests that it be implemented, for now at least, only in the Southside Plan area. The Southside area, where I propose that this would apply, would be defined as the area north of Dwight Way to Bancroft and would include properties on both sides of Fulton between Dwight and Bancroft, and both side of College between Dwight and Bancroft. (This could be extended to include the west side of Piedmont.)

2) Implement zoning changes to facilitate housing development in the Southside

I would suggest that this be done as part of a package of Southside-related measures that includes an additional 15% density bonus. In response to student concerns expressed at previous commission meetings, I would propose, in addition to an additional 15% density bonus, that the commission recommend the following zoning changes:

- a) **Upzone some or all R-3 parcels in the Southside to R-S.** (See attached development standards which show that R-S allows for greater height, greater lot coverage, while requiring less open space and smaller setbacks compared to R-3.) In the Southside Plan, R-S is defined as high density zoning, while R-3 is called medium density

- zoning. The attached Southside Plan opportunity site map shows that there are some sites considered to be opportunity sites for housing that are located in R-3
- b) **Eliminate parking requirements for housing in R-S.** Currently some of R-S is in the Car-Free Overlay (see attached map) and some is not. Parking is not required for housing in either R-SMU or C-T. The Southside Plan (p. 89) estimated that over 70% of Southside residents did not own cars, and that probably hasn't changed. Requiring parking in an area where car ownership is exceptional, does make much sense. A parking maximum of one space for every two or three units would make more sense. If some areas of the Southside continue to be zoned R-3 or R-3H, create an R-3 car-free overlay to include them.
 - c) For those parts of the C-T zone not on Telegraph, **eliminate the prohibition on exclusive residential uses** (23E.56.070.F) so that there is flexibility to allow for ground floor housing. I hope this also addresses the proposal to allow conversion of commercial space to housing in parts of the C-T not on Telegraph. Would additional zoning changes be necessary to allow conversion of space that is now commercial?
 - d) In addition to the above, I think the Planning Commission should recommend to the City Council that they should encourage UC Berkeley to move forward with plans to develop housing on UC owned land. (see attached Southside Plan map of University owned sites).

Rationale for above proposals

I am proposing that the 15% additional local density bonus, be implemented, for now, only in the Southside. One reason to focus on the Southside is that the increase in student enrollment, with only a very limited accompanying increase in UC provision of student housing, is a major source of the current housing crisis in Berkeley. (see attached UC enrollment data and 2020 Long Range Development Plan projections). The enrollment increase to date is 500% of what was projected in the 2005-2020 UC Berkeley Long Range Development Plan, while the increase in student housing is only 50% of what was projected in the plan if you include a project now under construction. Encouraging housing in the Southside would address the difficult housing situation faced by students directly. An additional density bonus could work well if combined with increasing the size of the area zoned R-S and elimination of parking requirements and greater flexibility of ground floor use. R-S allows four stories, which could go to six stories with a 50% bonus. I have not proposed implementing an across the board 20' height increase as proposed by Councilmember Worthington. First, because R-3 zoning is not limited to the Southside. Rather than substantially increasing height limits in part of R-3, it makes more sense to me to upzone areas of R-3 where greater height is desirable to R-S. Density is not just a function of height. Lot coverage, open space requirements, and setbacks also impact density and R-S works if you want greater density. With respect to adding 20' (which I assume means two stories) to R-S or R-SMU, that would undercut the city density bonus, as developers could build to 60' without requiring a density bonus. If the goal is to generate some funds for affordable housing, it's best to leave R-S and R-SMU alone with respect to height. With the two density bonus changes presented above, developers can achieve 60' in both R-S and R-SMU.

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**Communications
Planning Commission
September 5, 2018**

Beyond 60', construction costs per square foot will rise and it's not clear that an 15% additional bonus would have much appeal. The principal of land value capture also suggests that cities shouldn't give density increases that increase the value of land and the projects built on that land without getting something of benefit in return.

I have chosen to focus on what I think are key zoning changes and have not addressed the other items in the City Council's "More Student Housing Now Resolution", which was approved by Council in January and supported by students who attended the February 7 Planning Commission meeting.

Attachments:

Density Bonus Chart, Planning Commission Packet, Feb 21, 2018 (page 135 of 142)
Excerpt from City's Zoning Map showing current Southside zoning
Southside Plan Subareas with Car-Free Housing overlay from Southside Plan (page 55)
Car-Free Overlay as proposed by students, distributed at Feb 7 PC meeting
R-3 development standards from City's zoning ordinance
R-S development standards from City's zoning ordinance
Southside Opportunity Sites from Southside Plan (pages 171-172)
University Owned Property from Southside Plan (page 34)
UC Berkeley enrollment history, 2003-2017, UC Berkeley Office of Planning and Analysis
printed from <https://pages.github.berkeley.edu/OPA/our-berkeley/enroll-history.html>
Campus Population, projections from UC Berkeley 2020 Long Range Development Plan,
pages 13-14 of 2020 LRDP

August 27, 2018

Density Bonus Chart*

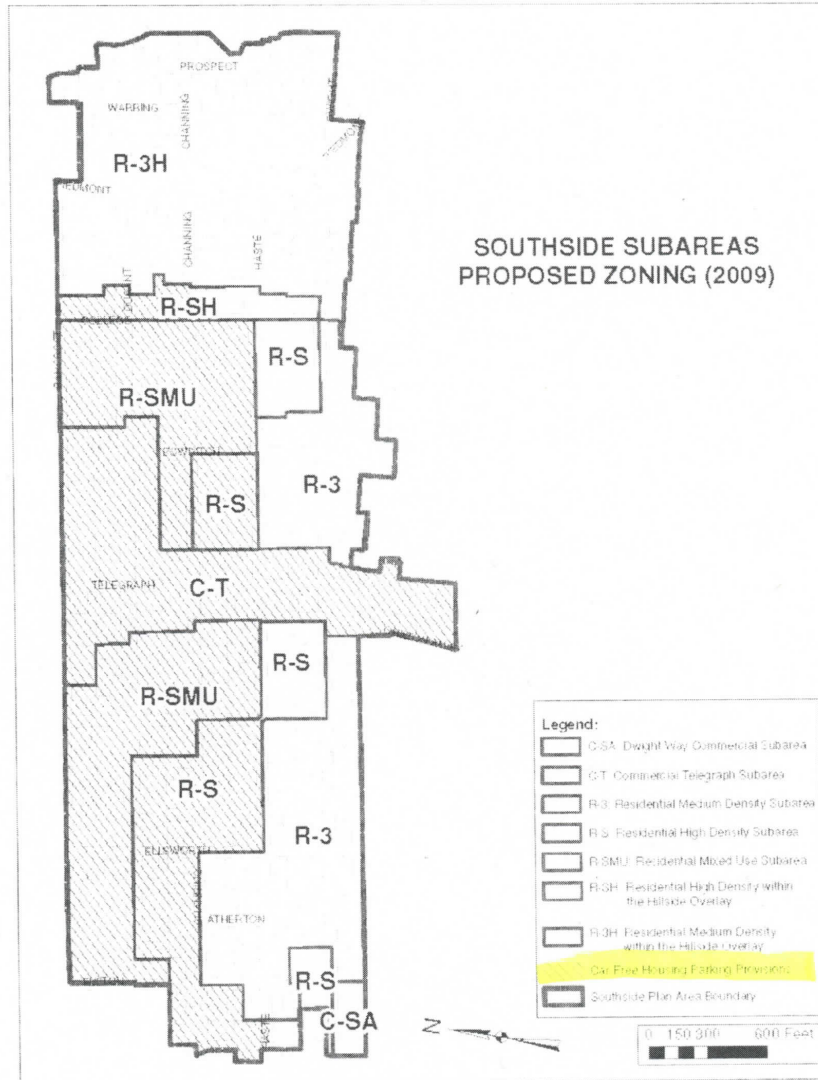
Affordable Unit Percentage **	Very Low Income Density Bonus (rental/ownership)	Low Income Density Bonus (rental/ownership)	Moderate Income Density Bonus (ownership only)
5%	20.0%	-	-
6%	22.5%	-	-
7%	25.0%	-	-
8%	27.5%	-	-
9%	30.0%	-	-
10%	32.5%	20.0%	5%
11%	35.0%	21.5%	6%
12%	37.5%	23.0%	7%
13%	40.0%	24.5%	8%
14%	42.5%	26.0%	9%
15%	45.0%	27.5%	10%
16%	47.5%	29.0%	11%
17%	50.0%	30.5%	12%
18%		32.0%	13%
19%		33.5%	14%
20%		35.0%	15%
21%		36.5%	16%
22%		38.0%	17%
23%		39.5%	18%
24%		41.0%	19%
25%		42.5%	20%
26%		44.0%	21%
27%		45.5%	22%
28%		47.0%	23%
29%		48.5%	24%
30%		50.0%	25%
31%			26%
32%			27%
33%			28%
34%			29%
35%			30%
36%			31%
37%			32%
38%			33%
39%			34%
40%			35%
41%			36%
42%			37%
43%			38%
44%			39%
45%			40%
46%			41%
47%			42%
48%			43%
49%			44%
50%			45%
51%			46%
52%			47%
53%			48%
54%			49%
55%			50%

* All Density Bonus calculations resulting in fractions are rounded up to the next whole number.

**Affordable unit percentage is calculated excluding units added by Density Bonus.

BOLD denotes Density Bonus in exceedance of State Density Bonus Law.





Map LU-9: Proposed Zoning, 2009

Car – Free Overlay



Car Free Housing Allowed Now

Proposed Expansion

R-3

23D.36.070 Development Standards

- A. No lot of less than 5,000 square feet may be created.
- B. No more than one person who resides in a Group Living Accommodation use shall be allowed for each 350 square feet of lot area. One additional person who resides in a Group Living Accommodation use may also be allowed for any remaining lot area which may be less than 350 square feet, but not less than 200 square feet in area.
- C. Each Main Building shall be limited in height as follows:

	Height limit average (ft.)	Stories limit (number)
Main Building	35	3
All Residential Additions	16*	Not Applicable

* The Zoning Officer may issue an Administrative Use Permit to allow residential additions to exceed 16 feet in average height, up to the district limit.

- D. Each Main Building shall be set back from its respective lot lines, and shall be separated from one another, in accordance with the following limits:

Story	Yard location				Building separation*
	Front	Rear*	Side	Street side	
1st	15	15	4	6	8
2nd	15	15	4	8	12
3rd	15	15	6	10	16

* See Section 23D.36.070.D.1 and 2 for yard and building separation reductions.

- 1. For two or more Main Buildings which contain Dwelling Units, the Rear Yard may be reduced subject to obtaining an Administrative Use Permit.
- 2. For two or more Main Buildings which contain Dwelling Units, the required building separation may be reduced subject to obtaining an Administrative Use Permit.
- E. Maximum lot coverage may not exceed the following coverage percentages:

Main Building Height (stories)	Lot Coverage Area (%)	
	Interior and Through Lots	Corner Lots
1 or 2	45	50
3	40	45

- 1. Lot coverage may be increased for a project in an R-3 District located within the Southside Plan boundaries if an Administrative Use Permit is obtained with one or both of the following findings:
 - a. The increased coverage would enable a new rear dwelling on the lot; or
 - b. It would enable moving a historic building onto the lot.
- F. Each lot shall contain the following minimum Usable Open Space area: for each Dwelling Unit, 200 square feet; for each person who resides in a Group Living Accommodation use, 90 square feet.
- G. Projects located within the Southside Plan boundaries that may create environmental impacts as described in the Southside Plan Final EIR shall be subject to the adopted Mitigation Monitoring Program (MMP). (Ord. 7210-NS § 11, 2011; Ord. 6949-NS § 13 (part), 2006; Ord. 6478-NS § 4 (part), 1999)

R-5

23D.48.070 Development Standards

- A. No lot of less than 5,000 square feet may be created.
- B. No more than one person who resides in a Group Living Accommodation use shall be allowed for each 350 square feet of lot area. One additional person who resides in a Group Living Accommodation use may also be allowed for any remaining lot area which may be less than 350 square feet, but not less than 200 square feet in area.
- C. The height for a Main Building shall satisfy the following requirements:
 - 1. The maximum height shall be three stories and 35 feet, except as otherwise provided in paragraph 2 below.
 - 2. The Board may approve a Use Permit to increase a project's height to a maximum height of four stories and 45 feet if it makes both of the following findings:
 - a. At least 50% of the total building floor area is designated for residential use; and
 - b. The project meets the purposes of the District.
- D. The height for a Residential Addition shall satisfy the following requirements:
 - 1. The maximum height shall be 16 feet, except as otherwise provided in paragraph 2 below.
 - 2. The Zoning Officer may issue an Administrative Use Permit to allow residential additions to exceed 16 feet in average height, up to the district limit.
- E. Each Main Building shall be set back from its respective lot lines, and shall be separated from one another, in accordance with the following limits:

Story	Yard location				Building separation*
	Front	Rear*	Side	Street side	
1st	10	10	4	6	8
2nd	10	10	4	8	12
3rd	10	10	6	10	16
4th	10	17	8	10	20

* See Sections 23D.48.070.E.1, 2 and 3 for yard and building separation reductions.

- 1. For two or more Main Buildings which contain Dwelling Units, the Rear Yard may be reduced subject to obtaining an Administrative Use Permit.
 - 2. For two or more Main Buildings which contain Dwelling Units, the required building separation may be reduced subject to obtaining an Administrative Use Permit.
 - 3. Front setbacks shall be 10 feet but may be reduced to as little as 0 feet through an Administrative Use Permit with a finding that the smaller setback is appropriate given the setbacks and architectural design of surrounding buildings.
- F. Maximum lot coverage may not exceed the following coverage percentages:

Main Building Height (stories)	Lot Coverage Area (%)	
	Interior and Through Lots	Corner Lots
1 or 2	65	70
3	60	65
4	55	60

- G. Each lot shall contain the following minimum Usable Open Space area: for each Dwelling Unit, 50 square feet; for each person who resides in a Group Living Accommodation use, 20 square feet.
- H. Projects that may create environmental impacts as described in the Southside Plan Final EIR shall be subject to the adopted Mitigation Monitoring Program (MMP). (Ord. 7208-NS § 1 (part), 2011)

Compile Chapter

The Berkeley Municipal Code is current through Ordinance 7588-NS, passed January 23, 2018.

Disclaimer: The City Clerk's Office has the official version of the Berkeley Municipal Code. Users should contact the City Clerk's Office for ordinances passed subsequent to the ordinance cited above.

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Southside PLAN

APPENDIX A: SOUTHSIDE OPPORTUNITY SITES

The text of the Southside Plan Land Use and Housing Element (page 49) offers the following guidance for identifying possible opportunity sites:

“The following types of properties are considered “opportunity sites” in the Southside:

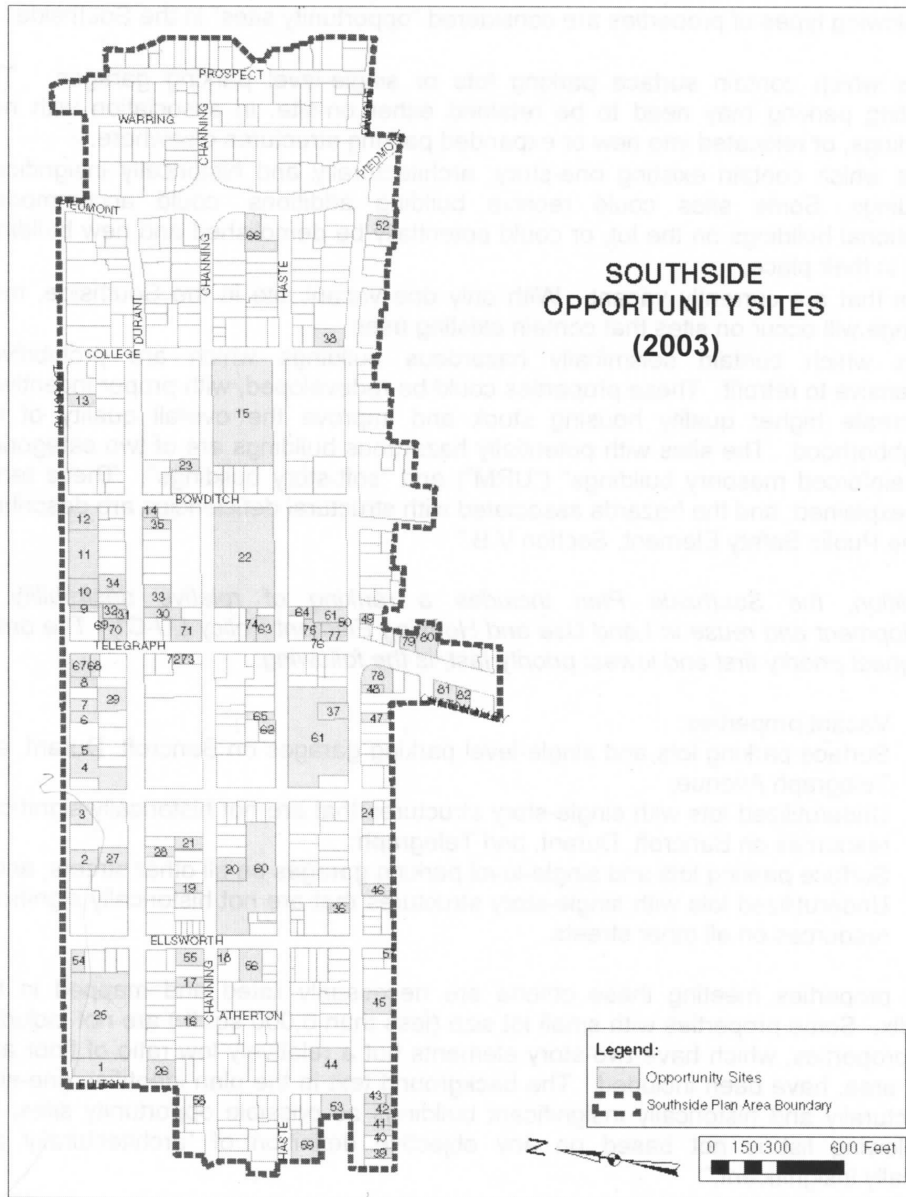
- Sites which contain surface parking lots or single-level parking garages. The existing parking may need to be retained either on-site, in association with new buildings, or relocated into new or expanded parking structures elsewhere.
- Sites which contain existing one-story, architecturally and historically insignificant buildings. Some sites could receive building additions, could accommodate additional buildings on the lot, or could potentially be demolished and new buildings built in their place.
- Sites that are currently vacant. With only one vacant site in the Southside, most change will occur on sites that contain existing uses.
- Sites which contain seismically hazardous buildings which are prohibitively expensive to retrofit. These properties could be redeveloped, with proper incentives, to create higher quality housing stock and improve the overall quality of the neighborhood. The sites with potentially hazardous buildings are of two categories: “unreinforced masonry buildings” (“URM”) and “soft-story buildings”. These terms are explained, and the hazards associated with structural deficiencies are described, in the Public Safety Element, Section V.B.”

In addition, the Southside Plan includes a ranking of relative desirability of redevelopment and reuse in Land Use and Housing Element Policy LU-C1. The order, with highest priority first and lowest priority last, is the following:

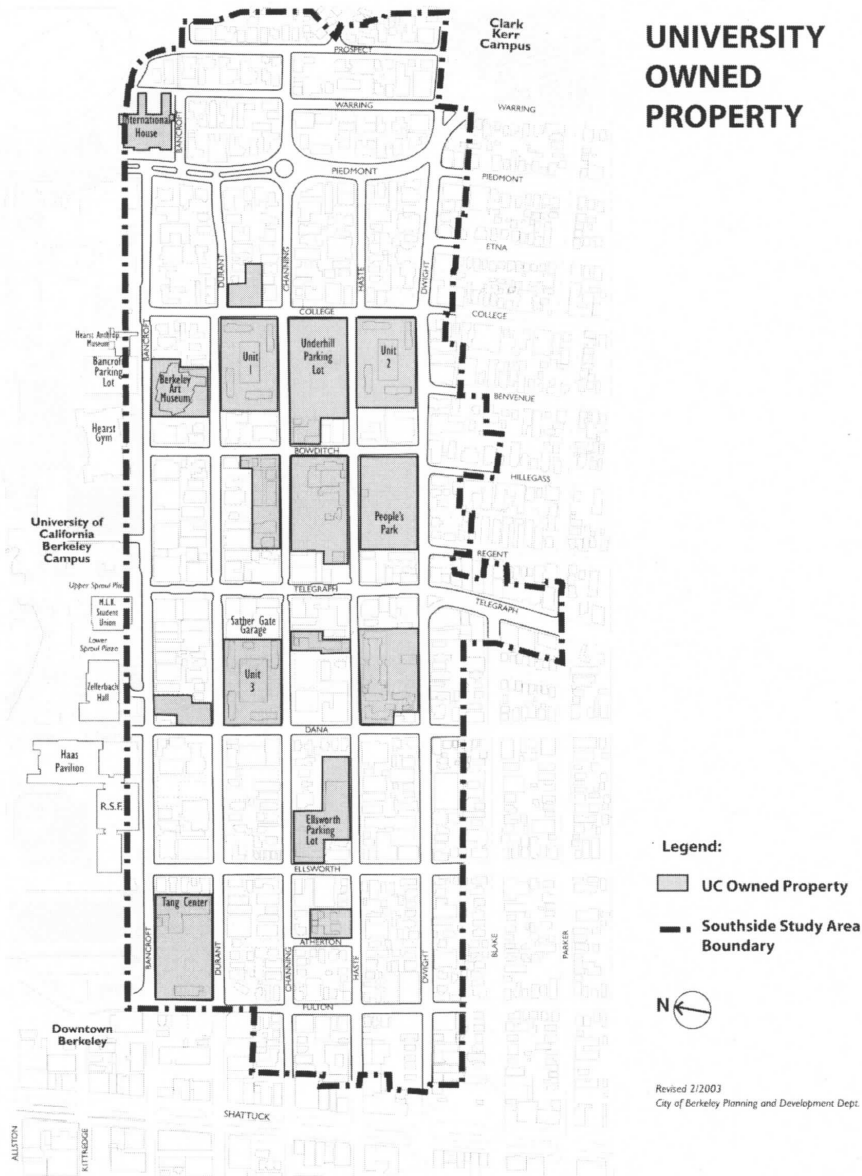
- A. Vacant properties;
- B. Surface parking lots and single-level parking garages on Bancroft, Durant, and Telegraph Avenue;
- C. Underutilized lots with single-story structures that are not historically significant resources on Bancroft, Durant, and Telegraph;
- D. Surface parking lots and single-level parking garages on all other streets; and
- E. Underutilized lots with single-story structures that are not historically significant resources on all other streets.

Not all properties meeting these criteria are necessarily listed and mapped in this appendix. Some properties with small lot size (less than 6,000 sq. ft.) are not included. Some properties, which have two-story elements but a relatively low ratio of floor area to land area, have been included. The background text in the plan identifies one-story architecturally and historically insignificant buildings as possible opportunity sites, but the following list is not based on any objective definition of “architecturally and historically insignificant.”

Of the sites listed, 24 were identified as having the greatest potential for development and reuse. These sites, called Tier 1 Opportunity Sites, were used to estimate the development potential used in the Southside Plan Draft Environmental Impact Report (DEIR), and are highlighted on the list.



SOUTHSIDE PLAN



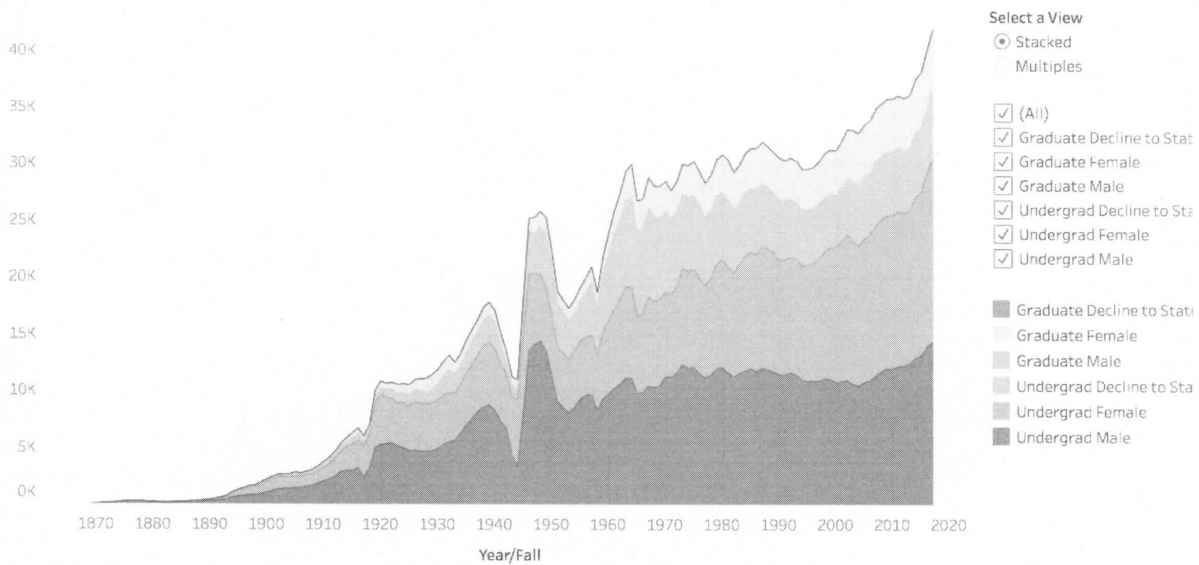
Map LU-2: Property owned by the University of California, 2003

Enrollment History Since 1869

This chart and table show total enrollment at the University of California, Berkeley, by student level and gender, since the university's first entering class in 1869. The periods during and immediately after both world wars saw significant fluctuations in enrollment. A general upward trend followed adoption of the California Master Plan for Higher Education in the early 1960s, with recent years seeing an even steeper increase in enrollment.

Help

In Fall 2017, for the first time in its history, UC Berkeley surpassed 30,000 undergraduates, with a total student population of almost 42,000.



Year/Fall	Graduate			Undergrad			Grand Total		
	Decline to State	Female	Male	Total	Decline to State	Female		Male	Total
2017	16	5,234	6,086	11,336	250	15,966	14,358	30,574	41,910
2016	4	4,980	5,879	10,863	264	15,146	13,900	29,310	40,173
2015	0	4,923	5,785	10,708	7	14,313	13,176	27,496	38,204
2014	0	4,728	5,727	10,455	0	14,135	12,991	27,126	37,581
2013	0	4,645	5,608	10,253	0	13,461	12,490	25,951	36,204
2012	0	4,605	5,520	10,125	0	13,492	12,282	25,774	35,899
2011	0	4,585	5,672	10,257	0	13,660	12,225	25,885	36,142
2010	0	4,614	5,684	10,298	0	13,514	12,026	25,540	35,838
2009	0	4,643	5,670	10,313	0	13,509	12,021	25,530	35,843
2008	0	4,604	5,654	10,258	0	13,385	11,766	25,151	35,409
2007	0	4,642	5,675	10,317	0	13,242	11,394	24,636	34,953
2006	0	4,604	5,466	10,070	0	12,883	10,980	23,863	33,933
2005	0	4,642	5,434	10,076	0	12,639	10,843	23,482	33,558
2004	0	4,548	5,386	9,934	0	12,346	10,534	22,880	32,814
2003	0	4,579	5,291	9,870	0	12,540	10,666	23,206	33,076

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Navigation icons: back, forward, search, print

LRDP

2020 LONG RANGE DEVELOPMENT PLAN

U C BERKELEY

5 CAMPUS POPULATION

STABILIZE ENROLLMENT AT A LEVEL COMMENSURATE WITH OUR ACADEMIC STANDARDS AND OUR LAND AND CAPITAL RESOURCES.

The University of California has a clear role in the California Master Plan for Higher Education, which articulates complementary roles for Community Colleges, California State University, and UC. The Master Plan designates UC as the state's primary research institution: UC selects from among the top 12.5% of California high school graduates, as well as the top 4% of graduates of each California high school. Due to the projected growth in the number of college age Californians, by 2010 UC as a whole must increase its enrollment by 63,000 students over the base year 1998 to continue to meet its Master Plan mandate.

As part of this strategy, UC Berkeley has been requested to evaluate the ability to grow by 4,000 full time equivalent students over base year 1998 by 2010. This represents an increase in enrollment of roughly 13%: a significant increase for any campus, but particularly for a mature, urban campus with aging facilities and limited capacity to expand. However, once our current target is reached, at an estimated two-semester average of 33,450 students, enrollment at UC Berkeley should stabilize.

Not only do few undeveloped sites remain on and around the campus, but our capital resources are also very limited. What capital funds the campus does receive from the state are consumed largely by seismic upgrades to existing buildings, and this need will continue for the near future. Moreover, to the extent university land and capital are utilized to accommodate further enrollment growth, they can no longer be utilized for campus renewal. Yet, the renewal of our buildings and infrastructure is crucial to our ability to recruit and retain exceptional individuals, to pursue new paths of inquiry and discovery, and to maintain our historic standard of excellence.

As a result of growth in both education and research, by 2020 we estimate total campus headcount during the regular academic year may increase by up to 12% over what it was in 2001-2002, as shown in table 1. The estimates for academic and nonacademic staff reflect the impacts of both enrollment growth and growth in external research funds through 2020. Research funds are projected to grow at 3.6% per year: the average rate of growth minus inflation during the last decade of the 20th century.

While UC Berkeley can accommodate some of our new students through growth in summer programs and education abroad, to meet our 4,000 student target also requires an increase in on-campus enrollment during the regular academic year. The enrollment figures in table 1 are presented in terms of student headcount: the estimates for the regular academic year represent the two-semester average, while the summer estimates represent the number of individual students enrolled in one or more summer courses.

The actual rate at which campus headcount grows in the future depends on a variety of factors, including future demographic trends, state and university policy, and available resources. In the near term, funds may not be available to support further growth in enrollment. However, the projections in the 2020 LRDP are based on underlying demographic needs through the year 2020, rather than on near-term funding considerations.

U C BERKELEY 2020 LONG RANGE DEVELOPMENT PLAN

TABLE 1 PROJECTED CAMPUS HEADCOUNT

	Actual Headcount 2001-2002	Net Addl Headcount 2020 LRDP	Est Total Headcount 2020
Students			
Regular Terms*	31,800	1,650	33,450
Summer	11,400	5,700	17,100
Employees	12,940	2,870	15,810
Faculty**	1,760	220	1,980
Academic Staff & Visitors**	3,040	1,840	4,880
Nonacademic Staff**	8,140	810	8,950
Other Visitors & Vendors	1,200	800	2,000
Estimated Regular Terms Headcount	45,940	5,320	51,260
Estimated On-Campus Headcount***	44,834		

* Campus population today is counted in two ways: by actual headcounts and by full time equivalents, or FTE. While budgets are calculated in terms of FTE, for the purpose of environmental analysis actual headcount is the better measure, since FTE tends to under-represent peak impacts. For example, two students taking six units each are likely to have a greater impact than one student taking 12 units. The 2020 LRDP therefore uses two-semester average headcount as the measure of campus population.

** All non-student categories exclude student workers to avoid double counting.

*** Excludes off campus programs and other exclusions per April 2002 Population Report to City of Berkeley.

TABLE 2 PROJECTED SPACE DEMAND

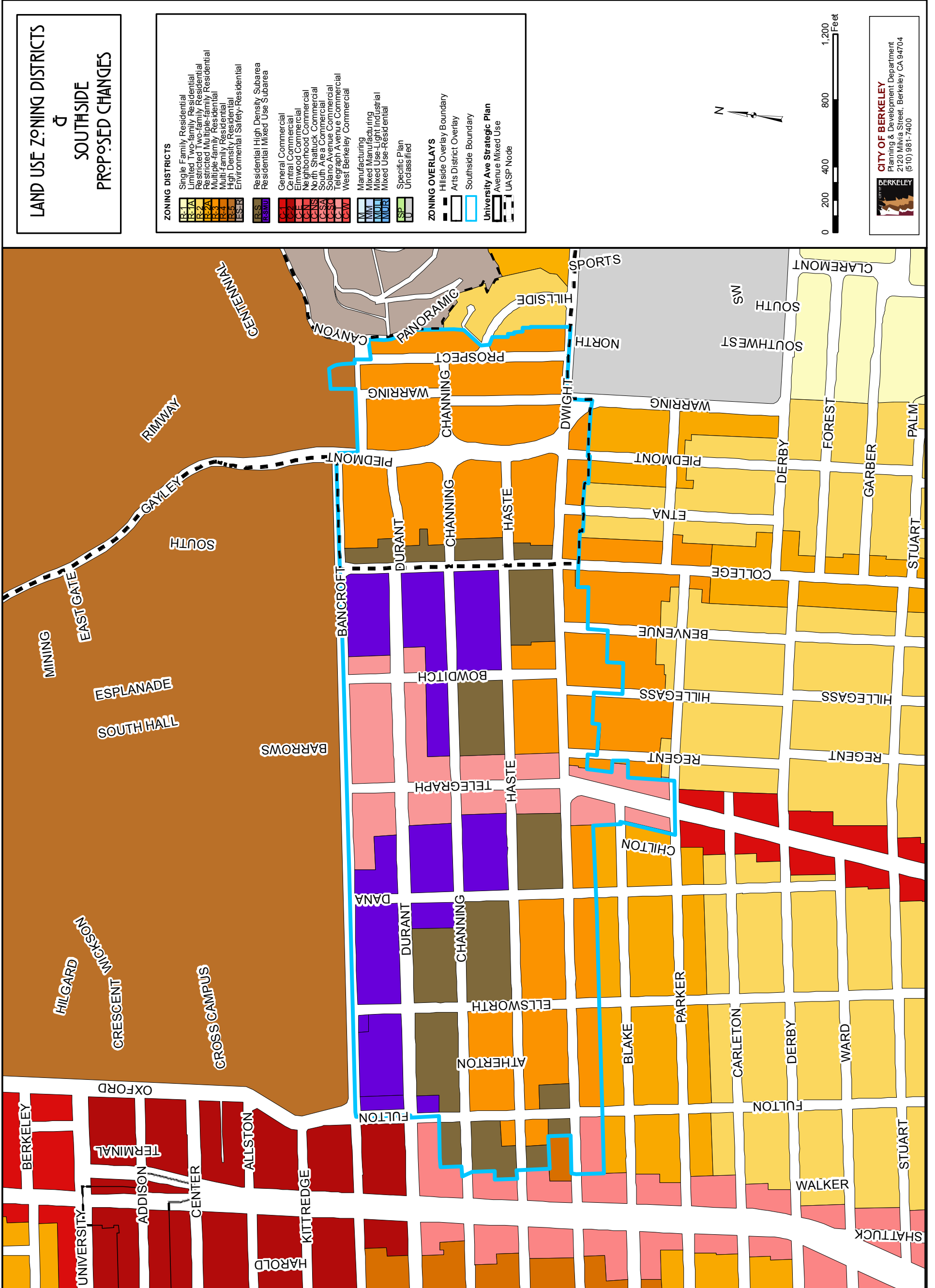
	Actual + Approved UC Berkeley Space	Net Addl Space 2020 LRDP	Est Total 2020
Academic & Support (GSF)	12,107,100	2,200,000	14,307,100
Actual 2001-2002*	11,637,900		
Net Addl Complete Mar 2004	116,600		
Net Addl Underway Mar 2004	352,600		
Housing (bed spaces)	8,190	2,600 °	10,790
Actual UC Owned 2001-2002	6,960		
City Environs**	6,004		
University Village Albany**	956		
Net Addl Complete Mar 2004	120		
Net Addl Underway Mar 2004	1,110		
Parking (spaces): phase 1	7,690	1,800 °°	9,490
phase 2		500 °°	9,990
Actual 2001-2002	6,900		
Net Addl Complete Mar 2004	100		
Net Addl CEQA Reviewed	690		

* 2001-2002 A&S space includes all buildings except those primarily housing or parking.

** City Environs includes 74 student family units at Smyth Fernwald and 27 faculty units, counted as one bed space per unit, as well as 585 bed spaces at International House, for consistency with 1990-2005 LRDP. University Village Albany includes 956 student family units counted as one bed space per unit.

° Includes up to 100 family-suitable units for faculty, staff, or visiting scholars within 2020 LRDP scope. Does not include new housing proposed for University Village Albany, which is outside the scope of the 2020 LRDP and the subject of a separate CEQA review.

°° Phase 2 parking would be deferred until after 2020 if the AC Transit Bus Rapid Transit/Telegraph route is approved and the system is under construction by January 2010, as described in Campus Access





Issue 534 | June 2014 **The Urbanist**

(<https://www.spur.org/publications/urbanist/2014-06>)

Designing at Ground Level

An emphasis on human scale — and on creating a great ground floor — are essential to good urbanism.

Benjamin Grant

Urbanist Article / June 3, 2014



“The ballet of the good city sidewalk never repeats itself from place to place, and in any one place is always replete with new improvisations.” —Jane Jacobs
ActivSpace photo by David Baker Architects

The image is probably the most widely shared touchstone in planning: An urban building with apartments upstairs and a café on the ground floor. For any planner who came of age after *The Death and Life of Great American Cities*, this image encapsulates the field. Density. Mixed use. Pedestrian orientation. Human scale. Eyes on the street. The “Third Place.” Name your urbanist maxim, it’s in this picture.

For many planners, it is this image that first unlocked the idea of urbanism. Most of us have conjured it up repeatedly to explain the magic of cities to relatives, dates, dentists or party guests. But all too often it ends there. We rarely subject this image to much scrutiny, perhaps because it’s so useful, and because achieving anything resembling it has consumed the careers of a generation of planners.

Designing at Ground Level | SPU

It took the Jane Jacobs generation to rescue the ground floor from insignificance, and to reassert the value of social, civic and economic encounter at street level. Today's planners, architects and entrepreneurs stand on the shoulders of giants. They take for granted that urbanism happens at street level, and they view the interaction of building and street as a medium for creative experimentation. They are, on the whole, less concerned about height, mass and the skyline than the preceding generation. If human scale is honored, "density" and "high-rise" are not the dirty words they once were.

In the American city, a new and long-absent facility of the public realm has taken hold. Its geography is uneven, it fruits inequitably distributed, but from pop-up shops to graffiti walls to maker spaces, it is growing. We may well look back on this period as the time when the urban project stopped recovering from the 20th century and started inventing the 21st.

Why is the ground floor so important?

Public life is the essence of urbanism. The city's ability to facilitate movement, commerce, democracy, innovation and creativity resides in the currents and eddies of human beings at the boundary of public and private space, where homes, jobs, shops and civic buildings touch streets, parks and plazas.

In a good urban neighborhood, the ground floors of the buildings work symbiotically with the surrounding sidewalks and public spaces. Together they provide a continuous network of pathways and experiences that are active, safe, comfortable and engaging. The ground-floor café (and retail more generally) is but one of many good ways for buildings to meet the street. After all, even a coffee-crazed town like San Francisco can't have a café — or even retail — in every building. A good city requires solutions as varied as its fabric and its people and must constantly invent new ones.



In Paris, the sidewalk cafe is an institution, one of many ways the ground floor is activated in this famously walkable city. But making a great ground floor isn't as simple as putting in a cafe. Photo by Metamirist

After a half-century of misguided obeisance to the needs of automobiles, we have begun the long process of reclaiming our cities' streets for people. This issue of *The Urbanist* is devoted to

Designing at Ground Level | SPUR

the building side of that symbiosis. Because as it turns out, making the ground floor of urban buildings work is quite a tricky problem, and one that is far from resolved. It is tangled in tensions between policies and markets, cars and people, codes and desires.

New ways of living, working and socializing have generated new policies and different, more adaptable spaces. A roll-up door can turn a streetside loft within a parking podium from residence to store, to production space and back. Today's designers, builders, artists and entrepreneurs, steeped in urbanism, are blurring the lines among uses and the spaces they inhabit — and getting away with it.

A brief history of the ground floor

Ground floor retail has its origins in the homes of urban artisans in medieval and Roman cities. Where fortifications put space at a premium, the family home was often above the family workshop, and business was conducted through an opening onto the street.

By the late 18th century, workshops were giving way to factories, and, in Paris and London, plate glass and gaslight helped create the urban storefront as we know it — a space for shopping, not making. In the 19th century, the era of the flaneur, the street itself was reinvented as a genteel public space, and grand treelined boulevards played host to a fashionable parade of shopping, self-presentation and spectacle.

Modernist architects like Le Corbusier were suspicious of commerce, and found the tight, clamorous spaces of the 19th-century city oppressively filthy and congested. They sought to “free the ground plane” by raising their towers on stilt-like pilotis, so that citizens might wander through a new species of park-like city at their ease, never channeled into something as vulgar as a street. These architects peeled apart the city's mixture, and in doing so they created separate sectors for offices, factories and homes, and built pedestrian sky bridges over sweeping expressways. The intended spaces of discovery became spaces of desolation.

In the mid-to-late 20th century, the car was king. In subdivisions, shopping malls, housing projects and office complexes, inward looking, single-use environments were the norm. For nearly half a century, urban development in the U.S. got an almost total pass from pedestrian considerations. leaving a legacy of blank walls, narrow or non-existent sidewalks and dead spaces.

In the 1960s, critics like Jane Jacobs and architects like Oscar Newman and Jan Gehl began investigating exactly what it was that made traditional urbanism (then under attack) work so well. They zeroed in on the interaction of building edges, public streets, and social interaction, creating some of the classic analyses in urban design. Their efforts revolutionized urban design, and their emphasis on the human scale — once dismissed as quaint and unscientific — has become planning orthodoxy.

Today, walkable streets enlivened by active uses are a widely shared priority, critical to supporting transit, reducing carbon emissions and tackling chronic diseases. But bringing streets to life — especially outside city centers — can be quite a challenge.

Planning and regulating the ground floor

Planning policies often look to manage the use and design of the ground floor to support the public realm. Here are some of the things they can control:

Height

The height of a ground floor has a major impact on its performance. Good retail spaces usually need a 15-18-foot ground floor. (David Baker Architects has been advocating for 20 feet; see pp. 10). A higher ground floor allows adequate space for residential stoops raised a half level, mechanically stacked parking, or groundfloor lofts, workshop space or open lobbies.

Depth

Depth is also important. It is not uncommon for retail tenants or brokers to demand spaces 40 feet deep. Retail depth is often in tension with the need to provide parking behind.

Frontage

Policies may stipulate the minimum frontage that must be occupied by active uses, or minimum frontage of transparent glass. They may also define maximum frontages for exposed parking, utility functions or a single user. A single large user such as a big-box retailer may be required to provide “in-line” storefronts.

Parking

Parking is the single biggest driver of ground-floor design and a major factor in the economics of development. Planning codes typically regulate the amount of parking and may also address its placement and design treatment (by limiting its exposure to the street, for example).

Building heights and building types

Building heights are shaped by the interaction of planning and building codes. The most common multifamily building types put up to five stories of wood-frame construction atop a concrete parking and retail podium. Height limits of 40, 50 or 60 feet often resulted in a cramped 10-foot ground floor with three to five 10-foot stories above. Five additional feet — now permitted by the California building code and increasingly by local zoning codes — adds enough room for a more generous ground floor without adding a story overall.

Utilities and other challenges

Numerous other features must fit into ground floor frontages. These include electrical transformers, fireplugs, ventilation systems, loading docks and trash rooms. When combined with entrances and auto access, there is often little frontage left to work with.

Use

Many cities encourage or require “active uses” in the ground floor of new buildings, which varies from an outright requirement for retail, to broader definitions that include residential doorways. Parking is often the major ground floor use, but policies frequently require that it be hidden. New use categories, like PDR (production/ distribution/repair) as well as co-working, and mixed production and retail have been codified in recent years. —B.G.



The Proxy Project in Hayes Valley, by envelope A+D, exemplifies the success of experiments in iterative development.

Photo
courtesy envelope A+D.



Simple transformations have been achieved throughout New York with such easily attainable tools as bright

aint and inexpensive furniture — and an openness to change Photo by Noah Christman

Making retail work: The market problem

Just because planners allow, or even require, ground floor retail spaces, does not mean there will be ground-floor retail. Retailers, who live and die according to foot traffic, visibility and neighboring stores, are very sensitive to both location and quality of their spaces and they are well aware that if you build it, customers won't automatically come.

Planners don't create cafes (or restaurants or grocery stores) and for the most part, neither do developers. Entrepreneurs do. It is true that a building without a storefront will never contain a store. On the other hand, the world is full of empty storefronts. The weakness of ground-floor retail in mixed-use construction is so notorious that developers routinely write it off, assuming no revenue at all.

Very often, unoccupied retail space is inhabited as inexpensive office space, by social service agencies, nonprofits, and the like. Some of these – say a clinic or employment center, might work well in a storefront. Others opt to simply lower the Venetian blinds and function as an office. We tend to focus on and remember the zones of gathering and shopping in our cities while often forgetting the quiet (and much more numerous) back streets that sustain them. In trying to create great urban places, both planners and the public tend to want to over-supply retail space. Most urban ground floors, even in Manhattan (shown above) or Paris, serve a single use. The foot traffic and buying power of a whole district is then channeled into supporting a lively street life in limited area — given walkable streets and sufficient density.

In today's white-hot San Francisco, ground-floor retail has pretty good prospects, and businesses can and do make use of all kinds of spaces, from the 12- foot frontages along Hayes Street to ActivSpace on 18th and Treat Streets, which houses a thriving café in just 99 square feet. But elsewhere, ground floor space often sits empty, a planner's aspiration that never bore fruit.

In downtown San Jose, where empty ground floors are common, the challenge of implementing the right storefront strategy was highlighted in a recent debate over whether to allow office uses in ground floor retail spaces. Ground-floor office space does little to engage the street, but one could argue that some use is preferable to none at all.

So do we build for the market that exists, or for the market we hope will one day exist? The cost of empty retail space is simply folded into the cost of the space upstairs. But urban districts take time to mature and once they do, demand can change dramatically in a short time. Sometimes all it takes is one amazing business to totally transform a place — and a market.

But how to figure out what that business is? Trying things out on a temporary basis can often yield longterm solutions. If you want to shift the way a space is perceived, make something interesting happen there and pack it full of people. A market, after all, is only the aggregate of people's assumptions and experiences – things that can be engaged and shaped.

Long before taco trucks became a global phenomenon, they were simply a cheap way to create a mobile storefront. Many developed semi-fixed locations, enlivened by loyal patrons. Lately, food truck gatherings like San Francisco's "Off the Grid" have joined farmers' markets, shipping containers and pop-up shops as part of a suite of solutions that create instant, low-risk critical mass. These tactical approaches are increasingly being deployed to enliven public space in advance of conventional development projects.

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Retail along 8th Street keeps things lively at San Francisco's 8th & Howard/ SOMA Studios, which has 162 units of affordable housing.

SOMA Studios designed by David Baker Architects, photo by Brian Rose

Ground floor code reforms in San Francisco

In recent years, San Francisco, with the help of advocacy groups like Livable City, has revised significant portions of the planning code, with a focus on making the ground floor work for pedestrians. They include:

- No parking required in transit-oriented housing.
- Minimum ground floor heights were increased to as much as 17 feet.
- Transit-oriented districts were allowed a 5-foot height bonus within the ground floor.
- Active uses required to a depth of 25 feet from the street frontage.
- Ground floor parking must be 25 feet from the street frontage.
- Parking on upper floors must have level floors, minimum floor-to-floor heights and other features to ensure they can be converted to other uses in the future.
- Stackers and other space-efficient parking solutions are permitted as-of-right.
- Neighborhood Commercial zoning was loosened to allow for limited production. Prescriptive limits on equipment and facilities were replaced with performance standards for noise, odors etc.
- PDR zoning was loosened to allow limited retail sales onsite.

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One South Market is the first new residential tower in downtown San Jose to be built since the recession. When initial designs gave short shrift to ground floor retail spaces, SPUR worked with city officials, the San Jose Downtown Association and other advocates to support deeper, better-equipped retail spaces and limit exposed parking. The result is increased retail demand and street life much akin to the daily rhythm of the city's Paseo de San Antonio (pictured).

Photo by Sergio Ruiz.

San Francisco's ground floor: An urban design success story

San Francisco has made major strides over the past decade in its treatment of the ground floor. Planning policies, the development industry and local communities have all begun to crack the code on urbanism, and in structures both new and old, street life is thriving. Although perennial tensions around the pace and shape of growth have again come to the fore, one thing seems certain: The urban design quality of the current development boom is vastly improved.

In recent years, San Francisco has modified its zoning code in a variety of ways to improve how new buildings engage the street. A lot of these changes were facilitated by a sea change in regulations, markets, and public culture on the issue of parking, which is generally the single biggest driver of ground floor design. Today, some housing is being built without any dedicated parking, a prospect that seemed radical a decade ago. It's not that parking is no longer valued but that street life is valued more.

Designing at Ground Level | SPUR

Zoning came into being to separate “noxious” industrial uses from residences, even as industry was already leaving American cities for the suburbs and the developing world. The later revival of city life in America depended in part on repurposing the city from production to consumption, as a playground for shopping, dining and entertainment. But recent years have seen a surprising return of urban production.

With scarce land being converted to office and high-end residential, “Production, Distribution and Repair” (or PDR), is a zoning designation meant to protect critical light-industrial functions and the jobs they provide. This has corresponded with a rise in new kinds of businesses, combining artisanal and craft production, digitally-enabled fabrication and prototyping, and small-scale service and retail. Taken together, these new uses have significant implications for the texture of the city as encountered at the ground floor. Far from being a noxious use, production has become an amenity.

Recent reforms to the zoning code have increased the flexibility in combining production and retail in San Francisco. Small retail outlets are now allowed in PDR space (Heath Ceramics is one notable example), and production is now permitted in neighborhood commercial districts, with performance standards to address noise, odors or other potential nuisances.

More and more people can work anywhere, and a great many of them choose to do so in cities, among other people. Cafés are packed with mobile workers on laptops, blurring the line in both time and space between the workplace, the public realm and the third place of public social interaction. Co-working spaces, which combine social interaction with office facilities and business support, often with a deliberate connection to the street, are a significant new land use category.

Architects, designers, planners and entrepreneurs are adapting to these changes with new, hybrid forms. More than ever, the basics of good urbanism — generous spaces, active uses, limits on the impact of cars — are locked into policy, while the program at street level is open-ended, flexible and hybridized.

Elsewhere, the story is not so upbeat. In much of the region, life at street level remains an aspiration, and it is often compromised by deference to the automobile in both markets and regulations. In communities where the café in the ground floor has struggled to find traction, the flexible models being pioneered in San Francisco could be a valuable export.

About the Authors:

Benjamin Grant is SPUR’s Public Realm and Urban Design Program Manager



Issue 534 | June 2014

(<https://www.spur.org/publications/urbanist/2014-06>)

Designing at Ground Level (<https://www.spur.org/publications/urbanist-article/2014-06-03/designing-ground-level>)

Focus on the First 20 Feet (<https://www.spur.org/publications/urbanist-article/2014-06-10/focus-first-20-feet>)

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Urban Field Notes: This Is Where I Walk, Rest, Eat, Perform, Live, Shop, Work, Nap, Read, Chat... (<https://www.spur.org/publications/urbanist-article/2014-06-03/urban-field-notes-where-i-walk-rest-eat-perform-live-shop>)

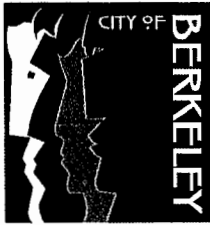
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Office of the City Manager

December 18, 2018

To: Commission Secretaries

From:  Dee Williams-Ridley, City Manager

Subject: 2019 Update to the Local Hazard Mitigation Plan;
Public Comment Process

The First Draft of the City's 2019 Local Hazard Mitigation Plan (LHMP) update has been released on the City's website (www.CityofBerkeley.info/Mitigation) and at City libraries. The document's Executive Summary and Actions are attached to this letter.

As a Commission Secretary, please:

- Include the attached information in your next Commission meeting packet
- Ensure that the Local Hazard Mitigation Plan is agendaized as an Information Item at your January Commission meeting
- If your Commission wishes to provide feedback on the plan, ensure that the Local Hazard Mitigation Plan is agendaized as an Action item for your February meeting.

Plan Content

The LHMP identifies natural hazards in Berkeley and outlines a five-year strategy to further protect Berkeley's people, buildings, infrastructure, and environment from those hazards. The City began updating the LHMP in early 2018. This update effort will allow Berkeley to apply for federal mitigation grant programs and State funding, and is anticipated to be complete at the end of 2019.

Commission Review

All City Commissions are being invited to review the First Draft Plan. Commission feedback will be due to Mitigation@CityofBerkeley.info by February 28, 2019. Staff will review the feedback and incorporate appropriate edits into the Final Draft Plan.

Staff will present the First Draft Plan's proposed mitigation strategy at the Planning Commission's January 16 meeting and the Disaster and Fire Safety Commission's January 23 meeting.

Re: 2019 Update to the Local Hazard Mitigation Plan; Public Comment Process

Community Review

The First Draft Plan has been posted for review and comment at City libraries and on the City website (www.CityofBerkeley.info/Mitigation). Members of the public are invited to provide written feedback on the document until February 28, 2019.

Written feedback can be submitted:

- a) Via email to Mitigation@CityofBerkeley.info
- b) Via postal mail to:
Fire Department – Office of Emergency Services
Attn: Mitigation Plan
2100 Martin Luther King, Jr. Way, 2nd Floor
Berkeley, CA 94704
- c) In-person during business hours to the Fire Department – Office of Emergency Services at the address above.

Following the initial public review process, staff will review community member feedback and will incorporate appropriate edits into the Final Draft Plan. Staff will concurrently develop an outline of edits made based on Commission and community feedback.

The Final Draft Plan will undergo review first by the State of California Office of Emergency Services and Board of Forestry, and then the Federal Emergency Management Agency (FEMA). Staff will make changes to the plan as required by these State and federal bodies.

Adoption

In fall 2019 (est.) staff will post the Final Draft Plan, including any State and federal edits, to the City website. At that time, staff will present the Final Draft Plan to the Disaster and Fire Safety Commission and the Planning Commission, requesting their recommendations to Council on the plan. The Planning Commission meeting, which will also serve as the First Public Hearing for the plan. Staff anticipates bringing the Final Draft Plan to City Council for review and adoption in December 2019.

Commission Secretaries will serve as their Commissions' point of contact for this project. Please contact Sarah Lana, Emergency Services Coordinator (slana@cityofberkeley.info, x5576), with questions.

Attachment: 2019 Local Hazard Mitigation Plan: First Draft
Executive Summary and Actions

cc: Paul Buddenhagen, Interim Deputy City Manager
David Brannigan, Fire Chief
Mark Numainville, City Clerk
Matthai Chakko, Assistant to the City Manager
Jenny Wong, City Auditor



City of Berkeley

2019 Local Hazard Mitigation Plan

First Draft Executive Summary
and Mitigation Actions
December 18, 2018

Executive Summary

Berkeley is a vibrant and unique community. But every aspect of the city – its economic prosperity, social and cultural diversity, and historical character – could be dramatically altered by a disaster. While we cannot predict or protect ourselves against every possible hazard that may strike the community, we can anticipate many impacts and take steps to reduce the harm they will cause. We can make sure that tomorrow’s Berkeley continues to reflect our current values.

City government and community members have been working together for years to address certain aspects of the risk – such as strengthening structures, distributing disaster supply caches, and enforcing vegetation management measures to reduce fire risk. The 2004 Disaster Mitigation Plan formalized this process, ensuring that these activities continued to be explored and improved over time. The 2014 Local Hazard Mitigation Plan continued this ongoing process to evaluate the risks that different hazards pose to Berkeley, and to engage the community in dialogue to identify the most important steps that the City and its partners should pursue to reduce these risks. Over many years, this constant focus on disasters has made Berkeley, its residents and businesses, much safer.

The federal Disaster Mitigation Act of 2000 (DMA 2000) calls for all communities to prepare mitigation plans. The City adopted a plan that met the requirements of DMA 2000 on June 22, 2004, and an update on December 16, 2014. This is the 2019 update to that plan, called the 2019 Local Hazard Mitigation Plan (2019 LHMP).

Plan Purpose

The 2019 LHMP serves three functions:

1. The 2019 LHMP documents our current understanding of the hazards present in Berkeley, along with our vulnerabilities to each hazard – the ways that the hazard could impact our buildings, infrastructure, community, and environment.
2. The document presents Berkeley City government’s Mitigation Strategy for the coming five years. The Mitigation Strategy reflects a wide variety of both funded and unfunded actions, each of which could reduce the Berkeley’s hazard vulnerabilities.
3. By fulfilling requirements of the DMA 2000, the 2019 LHMP ensures that Berkeley will remain eligible to apply for mitigation grants before disasters, and to receive federal mitigation funding and additional State recovery funding after disasters.

Plan Organization

Unlike prior versions of the plan, the 2019 LHMP has been structured to specifically address DMA 2000 requirements. The 2019 LHMP is organized as follows:

Element A: Planning Process

This section of the 2019 LHMP describes the process used to develop the document, including how partners, stakeholders, and the community were engaged. It also addresses the City’s approach to maintaining the 2019 LHMP over the five-year planning cycle.

Element B: Hazard Analysis

This section of the 2019 LHMP outlines the different hazards present in Berkeley. Analysis of each hazard includes the areas of Berkeley with exposure to the hazard, the potential impacts of each hazard, and Berkeley's vulnerabilities to each hazard.

Element C: Mitigation Strategy

The Mitigation Strategy section first documents the authorities, policies, programs, and resources that the City brings to bear in implementing mitigation actions. Second, this section outlines a comprehensive range of specific mitigation actions and projects designed to reduce Berkeley's hazard vulnerabilities. This section also describes how the 2019 LHMP is integrated with other City plans.

Element D: Plan Review, Evaluation, and Implementation

This section describes how changes in development have influenced updates to the 2019 LHMP. It also provides a detailed description of Berkeley's progress on the Mitigation Strategy proposed in 2014.

Element E: Plan Adoption

This section will be used to document formal adoption of the Final Draft 2019 LHMP by the Berkeley City Council.

In the pages that follow, this Executive Summary describes highlights from Element B: *Hazard Analysis* and Element C: *Mitigation Strategy*, as well as any key updates that were made to the section since the 2014 version.

Element B: Hazard Analysis

To become disaster resilient, a community must first understand the existing hazards and their potential impacts. Berkeley is exposed to a number of natural and human-caused hazards that vary in their intensity and impacts on the city. This mitigation plan addresses six natural hazards: earthquake, wildland-urban interface (WUI) fire, flood, landslide, and tsunami. Each of these hazards can occur independently or in combination, and can also trigger secondary hazards.

Although this plan is focused on natural hazards, four human-caused hazards of concern are also discussed: hazardous materials release, climate change,ⁱ extreme heat events, and terrorism. They are included because of their likelihood of occurrence and the magnitude of their potential consequences, as outlined in the table below.

Table 1. Summary of Hazard Analysis

Hazard	Likelihood	Severity of Impact
Earthquake	Likely	Catastrophic
Wildland-Urban Interface Fire	Likely	Catastrophic
Rainfall-Triggered Landslide	Likely	Moderate
Floods	Likely	Minor
Tsunami	Possible	Moderate
Climate Change	Likely	Unknown*
Extreme Heat	Likely	Unknown*

**Consequence levels for climate change and extreme heat have not been assigned values, as adequate information to make this determination is not yet available.*

Hazards of Greatest Concern

Earthquake

We do not know when the next major earthquake will strike Berkeley. The United States Geological Survey states that there is a 72% probability of one or more M 6.7 or greater earthquakes from 2014 to 2043 in the San Francisco Bay Region.ⁱⁱ There is a 33% chance that a 6.7 or greater will occur on the Hayward fault system between 2014 and 2043.ⁱⁱⁱ This means that many Berkeley residents are likely to experience a severe earthquake in their lifetime.

A catastrophic earthquake on the Hayward Fault would cause severe and violent shaking and three types of ground failure in Berkeley. Surface fault rupture could occur in the Berkeley hills along the fault, damaging utilities and gas lines that cross the fault. Landslides are expected in the Berkeley hills during the next earthquake, particularly if the earthquake occurs during the rainy winter months. Landslide movement could range from a few inches to tens of feet. Ground surface displacements as small as a few inches are enough to break typical foundations. Liquefaction is very likely in the westernmost parts of the city and could occur in much of the Berkeley flats. Liquefaction can destroy pavements and dislodge foundations.

Shaking and ground failure is likely to create impacts that ignite post-earthquake fires. Firefighting will be simultaneously challenged due to broken water mains and damage to electrical, transportation, and communication infrastructure.

In a 6.9 magnitude earthquake on the Hayward Fault, the City estimates that over 600 buildings in Berkeley will be completely destroyed and over 20,000 more will be damaged. One thousand to 4,000 families may need temporary shelter. Depending on the disaster scenario, one hundred people could be killed in Berkeley alone, and many more would be injured. Commercial buildings, utilities, and public roads will be disabled or destroyed. This plan estimates that building damage in Berkeley alone could exceed \$2 billion, out of a multi-billion dollar regional loss, with losses to business activities and infrastructure adding to this figure.

Low-income housing units are expected to be damaged at a higher rate than other residences. Other types of housing, such as condominiums, may replace them when land owners rebuild. This could lead to profound demographic shifts in Berkeley.

Wildland-Urban Interface Fire

Berkeley is vulnerable to a wind-driven fire starting along the city's eastern border. The fire risk facing the people and properties in the eastern hills is compounded by the area's mountainous topography, limited water supply, minimal access and egress routes, and location, overlaid upon the Hayward Fault. Berkeley's flatlands are also exposed to a fire that spreads west from the hills. The flatlands are densely-covered with old wooden buildings housing low-income and vulnerable populations, including isolated seniors, people with disabilities, and students.

The high risk of wildland-urban interface (WUI) fire in Berkeley was clearly demonstrated in the 1991 Tunnel Fire, which destroyed 62 homes in Berkeley and more than 3,000 in Oakland. In 1923, an even more devastating fire burned through Berkeley. It began in the open lands of

Wildcat Canyon to the northeast and, swept by a hot September wind, penetrated residential north Berkeley and destroyed nearly 600 structures, including homes, apartments, fraternities and sororities, a church, a fire station and a library. The fire burned downhill all the way to Shattuck Avenue in central Berkeley.^{iv}

If a fire occurred today that burned the same area, the loss to structures would be in the billions of dollars.^v Destruction of contents in all of the homes and businesses burned would add hundreds of millions of dollars^{vi} to fire losses. Efforts to stabilize hillsides after the fire to prevent massive landslides would also add costs. Depending on the speed of the fire spread, lives of Berkeley residents could also be lost. Many established small businesses, homes, and multi-family apartment buildings, particularly student housing, would be completely destroyed, changing the character of Berkeley forever.

Natural Hazards of Concern

This plan identified three additional natural hazards of concern: rainfall-triggered landslide, floods, and tsunami. These hazards could cause significant damage and losses in Berkeley. However, unlike earthquake and WUI fire, their impacts are likely to be smaller, and confined to specific areas.

Rainfall-Triggered Landslide

Berkeley has a number of deep-seated landslides that continuously move, with the rate of movement affected by rainfall and groundwater conditions. Significant localized areas of the Berkeley hills face risk from landslide, and a major slide could endanger lives and impact scores of properties, utilities and infrastructure.

Floods

Floods also could damage property and cause significant losses in Berkeley. Flooding can occur when stormwater exceeds the capacity of a creek channel, or the capacity of the storm drain system. Creek flooding in Berkeley has the potential to affect about 675 structures, mainly in the western, industrial area of the city. It is unlikely that floodwaters will reach higher than three feet, but damages to homes, businesses, and their contents could total over \$160 million. Storm drain overflow creates localized flooding in many known intersections in Berkeley. With few properties covered by flood insurance, these costs would be borne primarily by Berkeley residents and businesses.

Tsunami

Tsunamis, though rare inside the San Francisco Bay, can occur from large offshore subduction style earthquakes around the Pacific Rim. Small, local tsunamis can also result from offshore strike-slip Faults such as parts of the San Andreas Fault of the Peninsula and the Hayward Fault through San Pablo Bay. The March 2011 Japan earthquake generated a devastating tsunami, which reached the Bay Area and caused minor damage to docks and floats in the Berkeley Marina. A larger tsunami could impact much more of Berkeley's western shores. Buildings, infrastructure, and roadways could be damaged, and debris and hazardous materials could cause post-tsunami fires. Deaths are possible if individuals choose not to evacuate hazardous areas, do not understand tsunami warnings, or are unable to evacuate.

Manmade Hazards of Concern

While the focus of the 2019 LHMP is on natural hazards as emphasized in the Disaster Mitigation Act of 2000 (DMA 2000),^{vii} the plan provides analysis of four manmade hazards of concern. Climate change is described because its impacts are likely to exacerbate the natural hazards of concern identified in the plan. The 2019 LHMP specifically addresses the hazard of extreme heat events because they are projected to increase exponentially in the next century as climate change continues. Hazardous materials release is addressed in this mitigation plan as a potential impact from a natural hazard. Terrorism is identified as a hazard of concern but is not analyzed in-depth.

Climate Change

Like regions across the globe, the San Francisco Bay Area is already experiencing negative impacts of climate change. These impacts will continue to grow in intensity and will disproportionately affect vulnerable communities such as the elderly, children, people with disabilities, and people with low incomes.

The severity of these impacts will depend on the amount of greenhouse gas emissions produced worldwide over the coming decades. Mitigation of further emissions will reduce Berkeley's exposure to climate change. Berkeley's Climate Action Plan^{viii} identifies the City's plan for emissions reductions, known as climate change mitigation. Simultaneously, we are already experiencing climate change impacts that will intensify over time—including sea level rise, drought, severe storms, and extreme heat – so it is also critical that Berkeley adapt to current and projected impacts in order to protect Berkeley's community, infrastructure, buildings, and economy, known as climate change adaptation.

Climate change will have direct impacts and will also exacerbate the natural hazards of concern outlined in this plan. Rising sea levels have the potential to impact infrastructure and community members in west Berkeley and the Berkeley waterfront. This will increase Berkeley's exposure to tsunami inundation and to flooding of critical infrastructure in these areas, which includes sanitary sewers, state highways, and railroad lines. Increased temperatures, when coupled with prolonged drought events, can increase the intensity of wildfires that may occur, and pose significant health and safety risks to vulnerable communities. By 2100, most of the Bay Area will average six heat waves per year, each an average length of ten day.^{ix} Shorter, more intense wet seasons will make flooding more frequent, and may increase the landslide risk in the Berkeley hills. California may experience greater water and food insecurity, and drought will become a more persistent issue as the effects of climate change deepen.

Extreme Heat Events

Multiple factors contribute to the extreme heat hazard, including very high temperatures, nights that do not cool down, consecutive days of extreme heat, and extreme heat during unexpected times of the year. Extreme heat events impact public health, increase fire risk, damage critical facilities and infrastructure, and worsen air quality.

Social factors play a key role in vulnerability to extreme heat events, meaning that people with disabilities, chronic diseases, the elderly, and children under five are the most at risk to heat-

related illnesses.^x Across California, the highest risk of heat-related illness occurs in the typically cooler regions found in coastal areas like Berkeley.

Projections indicate that the number of extreme heat days, warm nights, and heat waves will increase exponentially: by 2099, the City of Berkeley is expected to average 18 days per year with temperatures over 88.3 degrees F.

Hazardous Materials Release

Over the last 25 years, Berkeley has seen a more than 90 percent reduction in the number of facilities with extremely hazardous materials. The City carefully tracks hazardous materials within its borders, and works closely with companies using large amounts of potentially dangerous materials. The City has identified fifteen facilities in Berkeley with sufficiently large quantities of toxic chemicals to pose a high risk to the community. Hazardous materials also travel through Berkeley by truck and rail. Natural hazards identified in the plan could trigger the release of hazardous materials.

Terrorism

It is not possible to estimate the probability of a terrorist attack. Experts prioritize terrorism readiness efforts by identifying critical sites and assessing these sites' vulnerability to terrorist attacks. City officials are currently working with State and regional groups to prevent and prepare for terrorist attacks.

Summary of Changes to the Hazard Analysis

The 2019 LHMP contains numerous updates to facts, figures, and descriptions. The City has incorporated the newest-available hazard data, including impact maps for particular scenarios. The City and its partners have provided additional descriptions, details and definitions to explain the science of these hazards and their potential impacts. Advances in GIS mapping technology have enabled the City to present maps that help to visualize information.

Institutional community partners have updated information regarding their vulnerabilities to the described hazards, as well as significant mitigation activities that they have completed, are in progress, or planned for the coming five years.

Within the historical section for each hazard, the City has added information about any instances of the hazard affecting Berkeley since 2014. Throughout the plan, the City has updated financial loss estimates for inflation.

Hazards Described in the 2014 Plan

For the first time, the plan identifies extreme heat events as a hazard of concern. Significant changes and updates to the analysis of each hazard are described below:

Earthquake (Section B.5)

- The 2019 LHMP integrates the 2018 HayWired scenario developed by the USGS to help illustrate the potential impacts of a catastrophic earthquake near Berkeley. The plan now includes five maps with data from the scenario.
- Berkeley's liquefaction hazard is now mapped using both overall levels of susceptibility and probability of liquefaction in the 7.0M HayWired scenario.
- The seismic stability of City-owned and leased buildings has been updated to reflect significant retrofit and rebuilding efforts since 2014.
- The City has updated the plan to describe Berkeley's progress on mitigating earthquake vulnerabilities in privately-owned buildings. Detailed analysis along with three new maps have been provided to describe and illustrate the locations of potentially seismically vulnerable buildings, including unreinforced masonry buildings, soft story buildings, non-ductile concrete buildings, and tilt-up or other rigid-wall flexible diaphragm buildings.
- The Earthquake section includes updated descriptions from Key Institutional Partners about mitigation efforts completed or planned. Updated partner profiles include UC Berkeley, Berkeley Lab, Berkeley Unified School District, East Bay Municipal Utility District, AT&T, and Alta Bates Summit Medical Center.
- Earthquake risk and loss estimates have been updated to integrate regional estimates from the 2018 HayWired earthquake scenario.

Wildland-Urban Interface Fire (Section B.6)

The 2019 LHMP integrates hazardous fire zones as defined by the City of Berkeley and the California Department of Forestry onto one map.

The 2019 LHMP presents a new map overviewing the locations of pedestrian pathways in Berkeley. These pathways are key resources for pedestrian evacuation from wildland-urban interface fire.

Rainfall-Triggered Landslide (Section B.7)

This section has been updated to describe hazard occurrences in Berkeley since 2014.

Floods (Section B.8)

The Floods section has been updated to include newly-revised flood exposure maps for Berkeley from the FEMA National Flood Insurance Program.

Tsunami (Section B.9)

The Tsunami section now includes a map of Tsunami Evacuation Playbook zones. These zones, developed by the California Geological Survey, California Governor’s Office of Emergency Services, and the National Ocean and Atmospheric Administration (NOAA), reflect more refined and detailed planning, in which forecasted tsunami amplitudes, storm surge, and tidal information can help guide what areas might be inundated.

The Tsunami section also includes new information about infrastructure vulnerabilities of the Berkeley Marina, based on recent tsunami inundation modeling by the California Geological Survey, University of Southern California, California State Lands Commission, and California Governor’s Office of Emergency Services.

Climate Change (Section B.10)

The Climate Change section has been updated to use the latest available science and policy guidance on the direct and secondary impacts of climate change. It describes recent events that demonstrate climate change impacts that we are already experiencing.

The section provides new analysis of amounts of sea-level rise anticipated under different projected carbon emissions scenarios, as well as new maps of expected levels of inundation from 2-ft, 4-ft, and 5.5-ft sea level rise scenarios using the Adapting to Rising Tides Bay Shoreline Flood Explorer.

Extreme Heat Events (Section B.11)

Extreme heat events are a newly-introduced hazard of concern for the 2019 LHMP. The extreme heat events section describes factors that contribute to the extreme heat hazard, and describe how the Urban Heat Island Effect can further exacerbate impacts of extreme heat events. The section outlines the secondary hazards created by extreme heat, including public health impacts, fire, damage to critical facilities and infrastructure, and worsened air quality.

The section also describes the predicted average number of extreme heat days in Berkeley through the end of the century.

Hazardous Materials Release (Section B.12)

The Hazardous Materials Release section contains updated figures on the number of sites with hazardous materials in Berkeley. Additionally, the section has been updated since 2014 to reflect Berkeley industrial sites with large quantities of extremely hazardous materials. These sites have been mapped for reference.

Element C: Mitigation Strategy

Authorities, Policies, Programs and Resources

Through many years of diligent effort by City government and the community, Berkeley has developed many innovative initiatives to increase our disaster resilience. The authorities, policies, programs and resources that Berkeley will use to support execution of the 2019 LHMP Mitigation strategy include:

- The City has strengthened its ability to serve the community during and after disasters by seismically upgrading or replacing buildings that house critical City functions. In 2017, work was completed on the James Kenney Recreation Center and the Center Street Garage. Since 2004 the City has strengthened or rebuilt all seven of the City's fire stations, the historic Ratcliff Building (which houses the Public Works Department Operations Center), the Civic Center (which houses many key government functions), the Public Safety Building, a new animal shelter, and all libraries.
- The Berkeley Unified School District, supported by voter-approved bonds, has strengthened all public schools.
- The City of Berkeley has worked diligently to enhance public safety and reduce physical threats from earthquakes by requiring owners of soft story and unreinforced masonry buildings to retrofit their structures.
 - Berkeley was the first city in the nation to inventory the community's soft-story buildings. In 2014 Berkeley mandated retrofit of soft story buildings with five or more dwelling units. Since then, 61 percent of these identified buildings have had retrofits completed.
 - Over 99% of Berkeley's 700 unreinforced masonry buildings have been retrofitted or demolished since a City mandate began in 1991.
- The City offers a comprehensive suite of programs to encourage the community to strengthen buildings to be more hazard-resistant.
 - In early 2017, the Building and Safety Division developed a new Retrofit Grants program with funding from a Hazard Mitigation Grant from the Federal Emergency Management Agency (FEMA) and the California Governor's Office of Emergency Services (Cal OES).
 - Since July 2002, the City has distributed over \$12 million to homeowners through the Transfer Tax Rebate Program, which reduces the real estate transfer tax to building owners who perform seismic safety work.
 - The City participates in the Earthquake Brace + Bolt (EBB) program, a grant program administered by the California Earthquake Authority, providing grants of up to \$3,000 for seismic retrofits of owner-occupied residential buildings with 1-4 dwelling units.
- The City, working together with key partners, is using a comprehensive strategy to aggressively mitigate Berkeley's wildland-urban interface (WUI) fire hazard. These approaches include:

- Prevention through development regulations with strict building and fire code provisions, as well as more restrictive local amendments for new and renovated construction;
 - Enforcement programs including annual inspections of over 1,200 high-risk properties annually;
 - Natural resource protection through four different vegetation management programs;
 - Improvement of access and egress routes;
 - Infrastructure maintenance and improvements to support first responders' efforts to reduce fire spread.
- The Disaster Cache Program incentivizes community-building for disaster readiness. To date, the City has awarded caches of disaster response equipment to neighborhoods, congregations, and UC Berkeley Panhellenic groups that have undertaken disaster readiness activities.
 - Berkeley's 2009 Climate Action Plan has served as a model for jurisdictions across the nation. The Climate Action Plan also guides the City's new climate adaptation strategy.

These programs, and many others, place Berkeley as a leader in disaster management. Long-term maintenance and improvements to these programs will support execution of the 2019 LHMP Mitigation strategy, and will help to protect the Berkeley community in our next disaster.

Disaster Mitigation Goals and Objectives

Berkeley will focus on three goals to reduce and avoid long-term vulnerabilities to the hazards identified in Element B: *Hazard Analysis*:

1. The City will evaluate and strengthen all City-owned properties and infrastructure, particularly those needed for critical services, to ensure that the community can be served adequately after a disaster.
2. The City will establish and maintain incentive programs and standards to encourage local residents and businesses to upgrade the hazard resistance of their own properties.
3. The City will actively engage other local and regional groups to collaboratively work towards mitigation actions that help maintain Berkeley's way of life and its ability to be fully functional after a disaster event.

Five objectives guide the mitigation strategy:

- A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.
- B. Increase City government's ability to serve the community during and after hazardous events by mitigating risk to key City functions.
- C. Preserve Berkeley's unique character and values from being compromised by hazardous events.
- D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in

the community.

- E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.

Overview of Actions

This plan identifies and analyzes 27 mitigation actions to reduce the impacts from hazards described in Element B: *Hazard Analysis*. This suite of actions addresses every natural hazard posing a threat to Berkeley, with an emphasis on new and existing buildings and infrastructure.

Tables 1, 2, and 3 below summarize all of the actions. The tables group actions by their priority level (see Element C.5.a for details on prioritization of actions), and identify the hazard(s) and each action addresses.

Table 2. High-Priority Actions in mitigation strategy

Name	Action	Hazards
Building Assessment	Continue appropriate seismic and fire safety analysis based on current and future use for all City-owned facilities and structures.	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat
Strengthen and Replace City Buildings	Strengthen or replace City buildings in the identified prioritized order as funding is available.	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat
Buildings	Reduce hazard vulnerabilities for non-City-owned buildings throughout Berkeley.	Earthquake Wildland-Urban Interface Fire Landslide Floods

Name	Action	Hazards
Retrofit Grants	Implementation of the Retrofit Grants Program which helps Berkeley building owners increase safety and mitigate the risk of damage caused by earthquakes	Earthquake
Soft Story	Continued Implementation of the Soft Story Retrofit Program, which mandates seismic retrofit of soft story buildings with 5+ residential units.	Earthquake
Unreinforced Masonry (URM)	Complete the ongoing program to retrofit all remaining non-complying Unreinforced Masonry (URM) buildings.	Earthquake
Concrete Retrofit Ordinance Research	Monitor passage and implementation of mandatory seismic retrofit ordinances for concrete buildings in other jurisdictions to assess best practices.	Earthquake
Gas Safety	Improve the disaster-resistance of the natural gas delivery system to increase public safety and to minimize damage and service disruption following a disaster.	Earthquake Wildland-Urban Interface Fire Landslide Tsunami
Fire Code	Reduce fire risk in existing development through fire code updates and enforcement.	Wildland-Urban Interface Fire
Vegetation Management	Reduce fire risk in existing development through vegetation management.	Wildland-Urban Interface Fire Climate Change
Hills Pedestrian Evacuation	Manage and promote pedestrian evacuation routes in Fire Zones 2 and 3.	Earthquake Wildland-Urban Interface Fire
Hills Roadways and Parking	Improve responder access and community evacuation in Fire Zones 2 and 3 through roadway maintenance and appropriate parking restrictions.	Earthquake Wildland-Urban Interface Fire
Undergrounding	Coordinate with PG&E for the construction of undergrounding in the Berkeley Hills within approved Underground Utility Districts (UUDs).	Earthquake Wildland-Urban Interface Fire
EBMUD	Work with EBMUD to ensure an adequate water supply during emergencies and disaster recovery.	Earthquake Wildland-Urban Interface Fire

Name	Action	Hazards
Extreme Heat	Reduce Berkeley’s vulnerability to extreme heat events and associated hazards.	Climate Change Extreme Heat
Hazardous Materials	Mitigate hazardous materials release in Berkeley through inspection and enforcement programs.	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami
Air Quality	Define clean air standards for buildings during poor air quality events and use those standards to assess facilities for the Berkeley community.	Wildland-Urban Interface Fire Extreme Heat
National Flood Insurance Program (NFIP)	Maintain City participation in the National Flood Insurance Program.	Floods
Hazard Information	Collect, analyze and share information with the Berkeley community about Berkeley hazards and associated risk reduction techniques.	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat
Partnerships	Coordinate with and encourage mitigation actions of key City partners.	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat

Table 3. Medium-Priority Actions in mitigation strategy

Name	Action	Hazards
Severe Storms	Reduce Berkeley’s vulnerability to severe storms and associated hazards through proactive research and planning, zoning regulations, and improvements to stormwater drainage facilities.	Landslide Floods Climate Change
Energy Assurance	Implement energy assurance strategies at critical City facilities.	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat
Climate Change Integration	Mitigate climate change impacts by integrating climate change research and adaptation planning into City operations and services.	Climate Change Extreme Heat
Sea Level Rise	Mitigate the impacts of sea level rise in Berkeley.	Climate Change
Water Security	Collaborate with partners to increase the security of Berkeley’s water supply from climate change impacts.	Climate Change

Table 4. Low-Priority Actions in mitigation strategy

Name	Action	Hazards
Tsunami	Mitigate Berkeley’s tsunami hazard.	Tsunami
Streamline Rebuild	Streamline the zoning permitting process to rebuild residential and commercial structures following disasters.	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami

ⁱ Human action directly influences the probability that climate change will occur. Climate change is referenced as a natural hazard here because of its potential to exacerbate natural hazards described in this plan.

ⁱⁱ Detweiler, Shane and Wein, A., 2018, The HayWired Earthquake Scenario – Earthquake Hazards: U.S. Geological Survey Scientific Investigations Report 2017-5013-A-H, p.3.

ⁱⁱⁱ Detweiler, Shane and Wein, A., 2018, The HayWired Earthquake Scenario – Earthquake Hazards: U.S. Geological Survey Scientific Investigations Report 2017-5013-A-H, p.4.

^{iv} City of Berkeley. *Fire Hazard Mitigation Plan*. February 25, 1992.

^v Total square footage of buildings in burn area is 9,386,281 square feet.

^{vi} In 2004, estimate was \$500 million.

^{vii} Public Law 106-390

^{viii} Berkeley Climate Action Plan (City of Berkeley, 2009) www.cityofberkeley.info/climate/

^{ix} San Francisco Bay Area 2017 Risk Profile (ABAG, 2017, p58-59)

http://resilience.abag.ca.gov/wp-content/documents/mitigation_adaptation/RiskProfile_4_26_2017_optimized.pdf

^x San Francisco Bay Area 2017 Risk Profile (ABAG, 2017) http://resilience.abag.ca.gov/wp-content/documents/mitigation_adaptation/RiskProfile_4_26_2017_optimized.pdf

The following pages are extracted from the Mitigation Strategy.

C.5 Details of Actions

The 2019 LHMP Mitigation Strategy is detailed below. First, the document describes the process used to prioritize the actions. Next, the document overviews the constituent parts of each action, including responsibility, potential funding sources, and expected timeframes. Third, each action is presented in detail.

C.5.a Action Prioritization

The City incorporated eight key factors into the prioritization strategy used for 2019 mitigation actions. These criteria are described below and summarized in the table that follows.

Key Factors

1. Support of goals and objectives

Actions that support multiple goals and objectives are prioritized.

2. Cost/benefit relationship

A detailed benefit cost analysis is required for FEMA grant eligibility. A less formal approach is taken here to weigh the relative costs and benefits of various actions. Because some projects may not be implemented for up to 10 years, the associated costs and benefits may change significantly over time. The following parameters were used to establish high, medium and low costs and benefits.

Costs:

- *High:* Existing funding will not cover the cost of the project; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases)
- *Medium:* The project could be implemented with existing funding but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years
- *Low:* The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.

Benefits:

- *High:* Project will provide an immediate reduction of risk exposure for life of property.
- *Medium:* Project will have a long-term impact on the reduction of risk exposure for life of property, or project will provide an immediate reduction in the risk exposure for property.
- *Low:* Long-term benefits of the project are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

3. Funding availability

Actions with secured funding are prioritized.

4. Hazards addressed

Actions addressing the Plan's hazards of greatest concern (earthquake and wildland-urban interface fire) are prioritized.

5. Public and political support

Actions with public and political support are prioritized.

6. Adverse environmental impact

Actions with low environmental impact are prioritized.

7. Environmental benefit

Actions that provide an environmental benefit are prioritized.

8. Timeline for completion

Actions that are ongoing, or that can be completed in the short-term, are prioritized.

- Ongoing: Currently being funded and implemented under existing programs
- Short-term: To be completed in 1-5 years
- Long-term: To be completed in more than 5 years

The following table summarizes prioritization criteria. Using these factors, mitigation actions have been divided into high, medium, and low priorities. Some actions may not meet all criteria within their prioritization category. In these cases, the City's Core Planning Team assigned the most suitable category.

Table 7. 2019 Action Prioritization Structure

Factors	Priority		
	High	Medium	Low
1. Support of goals and objectives	Supports multiple goals and objectives	Supports goals and objectives	Will mitigate the risk of a hazard
2. Cost/benefit relationship²	Benefits exceed cost	Has benefits that exceed costs	Benefits do not exceed the costs or are difficult to quantify
3. Funding availability³	Funding has not been secured, but the action is grant eligible under identified grant programs	Funding has not been secured, but the action is grant eligible under identified grant programs	Funding has not been secured, and a grant funding source has not been identified
4. Hazards addressed	Addresses hazards of greatest concern	May not address hazards of greatest concern	Addresses hazards identified in Hazard Analysis
5. Public and political support	Has public and political support	Has public and political support	May not have public and political support
6. Adverse environmental impact	No environmental impact	Low environmental impact	May not have a low environmental impact
7. Environmental benefit	Environmental benefit	No environmental benefit	No environmental benefit
8. Timeline for completion	Can be completed in the short term (1 to 5 years) or is ongoing	Can be completed in the short-term, once funding is secured	Timeline for completion is long-term (6-10 years)

² Actions that address other hazards, but for which benefits exceed costs, may also be considered high priority.

³ Medium priority projects will become high priority projects once funding is secured.

C.5.b Details of Actions

Mitigation actions identified by the Berkeley community are presented in the following pages. Actions are presented per their high, medium- or low-priority designation.

The following information is provided for each action:

- *Action Title*: Short title to identify the action
- *Action*: Proposed action
- *Proposed Activities*: Specific projects or efforts that support the action
- *Related Natural Hazard(s)*: Lists hazards whose impacts would be mitigated by the action
- *Associated LHMP Objective(s)*: Mitigation objectives that the action supports
- *Related Policies from the General Plan or Climate Action Plan*: General Plan or Climate Action Plan policies that the action supports
- *Lead Organization(s) and Staff Lead(s)*: City departments and divisions, along with particular City staff positions, which will be responsible for implementing and administering the action
- *Priority*: High, Medium or Low priority assigned to the action using criteria outlined in Appendix E: *Prioritization Structure*
- *Timeline*: Outlines expected timeframes for completion of the action
- *Additional Resources Required*: Identifies if funding is not yet available to complete the action
- *Potential Funding Sources*: Identifies potential funding sources to complete the action. Includes all sources that could possibly fund any element of the action, including staff time, contracted work, equipment purchase, etc. **Note: Funding allocations are made through the City-wide budget process. Listing a specific potential funding source does not commit resources to the action.**
- *Activity Type(s)*: If the action could be eligible for federal mitigation grant funding, identifies federally-defined activity type for grant purposes

C.5.b.i High-Priority Actions

<p>2019 Building Assessment</p>	<p>Continue appropriate seismic and fire safety analysis based on current and future use for all City-owned facilities and structures.</p>
<p>Proposed Activities</p>	<ul style="list-style-type: none"> a) Continue analysis of structures supporting critical emergency response and recovery functions, and make recommendations for structural and nonstructural improvements. b) Continue to prioritize analysis of remaining structures based on occupancy and structure type, taking historic significance into consideration. Use analysis to make recommendations for structural and nonstructural improvements. c) Continue to integrate unsafe structures into a prioritized program for retrofit or replacement.
<p>Related Natural Hazard(s)</p>	<p>Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat</p>
<p>Associated LHMP Objective(s)</p>	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. B. Increase City government’s ability to serve the community during and after hazardous events by mitigating risk to key City functions.
<p>Related Policies from the General Plan or Climate Action Plan</p>	<p>General Plan Policy S-10, Action B General Plan Policy S-20, Actions G and H General Plan Policy UD-7, Actions A and B General Plan Policy UD-12, Actions A and C</p>

Lead Organization(s) and Staff Lead(s)	Public Works Department: Facilities Division Staff Lead: Supervising Civil Engineer (for facilities)
Priority	High
Timeline	Ongoing
Additional Resources Required	Resources have been identified to perform some of this work; however, additional resources could allow for more facilities and structures to be analyzed in the coming five years.
Potential Funding Sources	General Fund T1 Bond

2019 Strengthen and Replace City Buildings	Strengthen or replace City buildings in the identified prioritized order as funding is available.
Proposed Activities	<ul style="list-style-type: none"> a) Retrofit North Berkeley Senior Center b) West Berkeley Service Center c) Old City Hall d) Veterans Memorial Building e) Live Oak Community Center f) Seek funding to seismically strengthen or replace additional City buildings in a prioritized order.
Related Natural Hazard(s)	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat

Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>B. Increase City government's ability to serve the community during and after hazardous events by mitigating risk to key City functions.</p> <p>C. Preserve Berkeley's unique character and values from being compromised by hazardous events.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-20, Action H</p> <p>General Plan Policy UD-12, Actions A and C</p>
Lead Organization(s) and Staff Lead(s)	<p>Public Works Department – Engineering Division Staff Lead: Supervising Civil Engineer (for facilities)</p> <p>Parks, Recreation and Waterfront Department Staff Lead: Department Director</p>
Priority	High
Timeline	<p>North Berkeley Senior Center: Completion in 2010</p> <p>Other projects: Funding-dependent</p> <p>Live Oak Community Center: Start construction in 2019 (funding-dependent)</p> <p>Frances Albrier Community Center: Funding-dependent</p> <p>Seek funding: Ongoing</p>
Additional Resources Required	<p>North Berkeley Senior Center: No additional resources required</p> <p>West Berkeley Service Center: To be determined</p> <p>Old City Hall retrofit: To be determined</p> <p>Veterans Memorial Building retrofit: To be determined</p> <p>Live Oak Community Center: Additional resources required</p> <p>Frances Albrier Community Center: Additional resources required</p> <p>Seek funding: No additional resources required</p>

Potential Funding Sources	Pre-Disaster Mitigation Grant Program (PDM) Hazard Mitigation Grant Program (HMGP) General Fund T1 Bond Other City-Issued Bonds
Activity Type(s) (Federal Mitigation Grant Funding only)	Mitigation: Structural Retrofitting of existing buildings Mitigation: Nonstructural retrofitting of existing buildings and facilities

2019 Buildings	Reduce hazard vulnerabilities for non-City-owned buildings throughout Berkeley.
Proposed Activities	a) Periodically update and adopt the California Building Standards Code with local amendments to incorporate the latest knowledge and design standards to protect people and property against known seismic, fire, flood and landslide risks in both structural and non-structural building and site components. b) Explain requirements and provide guidance to owners of potentially hazardous structures to facilitate retrofit, including owners participating in the Earthquake Brace and Bolt program and those applying for Transfer Tax rebates.
Related Natural Hazard(s)	Earthquake Wildland-Urban Interface Fire Landslide Floods
Associated LHMP Objective(s)	A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. C. Preserve Berkeley’s unique character and values from being compromised by hazardous events. D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.

Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-15, Action A</p> <p>General Plan Policy S-20, Actions D and E</p> <p>General Plan Policy UD-7, Actions A and B</p> <p>General Plan Policy UD-12, Actions A and C</p>
Lead Organization and Staff Lead	<p>Planning and Development Department – Building and Safety Division (Building Code and Retrofit Guidance)</p> <p>Staff lead: Building Official</p> <p>Planning and Development Department – Office of Energy and Sustainable Development (Earthquake Brace and Bolt Program)</p> <p>Staff lead: Sustainability Planner</p> <p>Finance Department – Revenue Collection Division (Transfer Tax Rebate Program)</p> <p>Staff lead: Revenue Collection Manager</p>
Priority	High
Timeline	<p>Enactment of 2019 Building Code: January 1, 2020</p> <p>Technical assistance: Ongoing</p>
Additional Resources Required	No additional resources required

2019 Retrofit Grants	Implementation of the Retrofit Grants Program which helps Berkeley building owners increase safety and mitigate the risk of damage caused by earthquakes
Proposed Activities	<p>a) Assist participating property owners with the grant process, including dissemination of program rules and guidelines.</p> <p>b) Project Manager will:</p> <ul style="list-style-type: none"> a. Respond to inquiries from owners, tenants, engineers and contractors about the grant program, including FEMA compliance procedures and requirements b. Environmental and Historic Preservation Reviews (EHP) for specified projects c. Review plan submittals for compliance with City guidelines and FEMA requirements d. If more funding is secured, conduct outreach to

	property owners to offer additional <i>Retrofit Grants</i>
Related Natural Hazard(s)	Earthquake
Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>C. Preserve Berkeley’s unique character and values from being compromised by hazardous events.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-20, Actions D</p> <p>General Plan Policy S-15, Action A</p> <p>General Plan Policy-17, Action A</p>
Lead Organization(s) and Staff Lead(s)	<p>Planning and Development Department: Building & Safety Division</p> <p>Staff Lead: Program and Administration Manager</p>
Priority	High
Timeline	<p>April 1, 2019: Building Permit deadline for Retrofit Grants applicants</p> <p>August 1, 2019: Deadline for obtaining building permit or permit with a status “ready for issuance”</p> <p>Complete construction within nine (9) months of receiving notification of FEMA approval</p> <p>If a second grant is secured, an additional three-year timeline will be established for that grant.</p>
Additional Resources Required	The Planning and Development Department is seeking additional Hazard Mitigation Grant funding from Cal OES / FEMA.
Potential Funding Sources	Hazard Mitigation Grant Program (HMGP)

Activity Type(s) (Federal Mitigation Grant Funding only)	Mitigation: Structural Seismic Retrofitting of existing buildings
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2019 Soft Story	Continued Implementation of the Soft Story Retrofit Program, which mandates seismic retrofit of soft story buildings with 5+ residential units.
Proposed Activities	<ul style="list-style-type: none"> a) Continue to inform impacted property owners of the requirement to seismically retrofit their building b) Designated project manager will: <ul style="list-style-type: none"> a. Respond to inquiries from owners, tenants, engineers, contractors and realtors about the mandatory program, compliance procedures and requirements b. Review plan submittals for soft-story seismic retrofits c. Issue permits and perform field inspections d. Remove retrofitted buildings from the Soft-Story Inventory e. Review appeals to accommodate unique circumstances preventing owners from meeting program requirements; consider time extensions, etc. f. Enforce soft story ordinance; issue citations to owners who are out of compliance.
Related Natural Hazard(s)	Earthquake
Associated LHMP Objective(s)	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. C. Preserve Berkeley’s unique character and values from being compromised by hazardous events. D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community. E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.

Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-20, Actions B, C, D, E, and F General Plan Policy S-15, Action A
Lead Organization and Staff Lead	Planning and Development Department – Building and Safety Division Staff Lead: Program and Administration Manager
Priority	High
Timeline	January 2017: Deadline for soft-story building owners to submit a permit application for retrofit January 2019 OR two years after permit application: Deadline for soft-story retrofit completion
Additional Resources Required	No additional resources required
Potential Funding Sources	Permit Service Center Enterprise Fund
Activity Type(s) (Federal Mitigation Grant Funding only)	Not eligible for federal mitigation grant funding

2019 URM	Complete the ongoing program to retrofit all remaining non-complying Unreinforced Masonry (URM) buildings.
Proposed Activities	<ul style="list-style-type: none"> a) Work with owners of remaining potentially hazardous URM buildings to obtain structural analyses of their buildings and to undertake corrective mitigation measures to improve seismic resistance or to remove the buildings and replace them with safer buildings. b) Apply available legal remedies, including but not limited to citations, to owners who fail to comply with the URM ordinance.
Related Natural Hazard(s)	Earthquake
Associated LHMP Objective(s)	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. D. Connect with residents, community-based organizations, institutions, businesses, and essential

	lifeline systems in order to increase mitigation actions and disaster resilience in the community.
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-20, Action A
Lead Organization and Staff Lead	Planning and Development Department - Building and Safety Division Staff Lead: Program and Administration Manager
Priority	High
Timeline	Complete all remaining URM retrofits/demolitions by January 2020
Additional Resources Required	No additional resources required
Potential Funding Sources	Permit Service Center Enterprise Fund Hazard Mitigation Grant Program (HMGP)

2019 Concrete Retrofit Ordinance Research	Monitor passage and implementation of mandatory seismic retrofit ordinances for concrete buildings in other jurisdictions to assess best practices.
Proposed Activities	<ul style="list-style-type: none"> a) Monitor mandatory seismic retrofit ordinances for concrete buildings passed by other municipalities for effectiveness and best practices b) Communicate and collaborate with other cities and Structural Engineers Association of California (SEAOC) regarding implementation challenges and successes
Related Natural Hazard(s)	Earthquake
Associated LHMP Objective(s)	A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.

	<p>C. Preserve Berkeley’s unique character and values from being compromised by hazardous events.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p>
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-10, Action C
Lead Organization(s) and Staff Lead(s)	<p>Planning and Development Department: Building & Safety Division</p> <p>Staff Lead: Program and Administration Manager</p>
Priority	High
Timeline	<p>Monitor effectiveness of mandatory seismic retrofit ordinances for concrete buildings: Ongoing</p> <p>Outreach to other municipalities regarding best practices: Ongoing</p>
Additional Resources Required	No additional resources required

2019 Gas Safety	Improve the disaster-resistance of the natural gas delivery system to increase public safety and to minimize damage and service disruption following a disaster.
Proposed Activities	<p>a) Maintain a program to provide free automatic gas shutoff valves to community members who attend disaster readiness training. Provide subsidized permit fee waivers for low-income homeowners.</p> <p>b) Promote electrification of buildings, both existing buildings and new construction, to mitigate hazards associated with natural gas usage and the impacts of damage to infrastructure after a hazard occurs.</p>
Related Natural Hazard(s)	<p>Earthquake</p> <p>Wildland-Urban Interface Fire</p> <p>Landslide</p>

	Tsunami
Associated LHMP Objective(s)	<p>B. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p> <p>E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.</p>
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-12, Action C
Lead Organization(s) and Staff Lead(s)	<p>Fire Department – Office of Emergency Services Staff Lead: Emergency Services Coordinator (Shutoff Valve Program)</p> <p>Planning Department – Office of Energy and Sustainable Development (Electrification) Staff Lead: Climate Action Program Coordinator (Electrification)</p>
Priority	High
Timeline	Ongoing
Additional Resources Required	<p>Shutoff Valve Program: No additional resources required</p> <p>Promoting electrification: Additional funding required for implementation</p>
Potential Funding Sources	<p>General Fund</p> <p>Measure GG Special Revenue Fund</p> <p>Ratepayer funds from PG&E or East Bay Community Energy</p> <p>Grants from Energy Foundation, Urban Sustainability Directors Network, California Energy Commission, California Air Resources Board, Bay Area Air Quality</p>

Management District, U.S. Department of Energy

<p>2019 Fire Code</p>	<p>Reduce fire risk in existing development through fire code updates and enforcement.</p>
<p>Proposed Activities</p>	<ul style="list-style-type: none"> a) Periodically update the Berkeley Fire Code and adopt the California Fire Code with local amendments to incorporate the latest knowledge and State regulations to protect people and property against known risks in both structural and non- structural building and site components. b) Evaluate Fire Prevention Division staffing necessary to adequately perform and enforce required inspections for both Annual and HFA inspections. c) Consider expansion of the number of properties to be included in the Hazardous Fire Area inspection program. d) Maintain Fire Department efforts to reduce fire risk through inspections: <ul style="list-style-type: none"> a. Annual building inspections in all Fire Zones b. Hazardous Fire Area inspections c. Multi-unit-residential building inspections in all Fire Zones e) Create a standard for written vegetation management plans for major construction projects in Fire Zones 2 and 3. f) Evaluate inspection procedures and adjust inspection cycle annually based on changing climatic conditions. g) Develop and enforce Fire Code requirement for fire fuel clearance on public roadways.
<p>Related Natural Hazard(s)</p>	<p>Wildland-Urban Interface Fire</p>
<p>Associated LHMP Objective(s)</p>	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, heat waves, and their secondary impacts. C. Preserve Berkeley’s unique character and values from being compromised by hazardous events.
<p>Related Policies</p>	<p>General Plan Policy S-21: Fire Preventative Design</p>

from the General Plan or Climate Action Plan	Standards, Action A General Plan Policy S-23: Property Maintenance, Action B General Plan Policy UD-7, Actions A and B General Plan Policy UD-12, Actions A and C Climate Action Plan – Adaptation, Goal 1D, Action 3
Lead Organization(s) and Staff Lead(s)	Fire Department – Division of Fire Prevention Staff Lead: Fire Marshal
Priority	High
Timeline	Fire Code Adoption: May and November 2019, and November 2022 Staffing evaluation: Ongoing HFA expansion research: February 2019 Inspections: Ongoing/Funding-dependent Vegetation Management Standard: Funding-dependent Inspection system evaluation: Funding-dependent Roadway clearance: Conceptual Plan in 2020, Implement Pilot with Community Education in 2021, Plan Enforcement in 2022
Additional Resources Required	Inspections: Additional staffing required Vegetation Management Standard: Additional staffing required Inspection system evaluation: Additional staffing required Roadway clearance code: Additional staffing required
Potential Funding Sources	Pre-Disaster Mitigation Grant Program (PDM) Hazard Mitigation Grant Program (HMGP) General Fund New City tax
Activity Type(s) (Federal Mitigation Grant Funding only)	Mitigation: Hazardous Fuels Reduction

<p>2019 Vegetation Management</p>	<p>Reduce fire risk in existing development through vegetation management.</p>
<p>Proposed Activities</p>	<ul style="list-style-type: none"> a) Maintain Fire Fuel Chipper Program b) Maintain Fire Fuel Abatement Program on Public Land c) Maintain Fire Fuel Debris Bin Program d) Maintain Weekly Curbside Plant Debris Collection e) Pursue external funding to increase education and awareness of vegetation management standards for fire fuel reduction f) Work with partners and stakeholders to identify fire fuel reduction zones and to promote and facilitate removal of vegetation in those zones to mitigate fire spread. g) Pursue external funding to perform vegetation management on public and private property h) Develop and enforce Fire Code requirement for fire fuel clearance on public roadways (see Fire Code action for details)
<p>Related Natural Hazard(s)</p>	<p>Wildland-Urban Interface Fire Climate Change</p>
<p>Associated LHMP Objective(s)</p>	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, heat waves, and their secondary impacts. D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.
<p>Related Policies from the General Plan or Climate Action Plan</p>	<p>General Plan Policy S-23, Action A</p>
<p>Lead Organization(s) and Staff Lead(s)</p>	<p>Department of Parks Recreation and Waterfront – Parks Division Fire Fuel Chipper Program Staff Lead: Senior Landscape Gardener (Senior Forestry Supervisor)</p>

	<p>Fire Fuel Abatement Program on Public Land Staff Lead: Senior Landscape Supervisor</p> <p>Fire Fuel Debris Bin Program and Weekly Curbside Plant Debris Collection: Department of Public Works – Zero Waste Division</p> <p>Staff Lead: Solid Waste and Recycling Manager</p> <p>Fire Department</p> <p>Staff Lead: Captain of Professional Standards Division (Pursue funding for education and vegetation management)</p> <p>Fire Chief (Fire Fuel Reduction Zones)</p>
Priority	High
Timeline	Ongoing
Additional Resources Required	<p>Fire Fuel Chipper Program: Additional resources required, amount to be determined</p> <p>Fire Fuel Abatement Program on Public Land: No additional resources required</p> <p>Vegetation management activities on public/private lands: Additional resources required, amount to be determined</p> <p>Fire fuel reduction zones: Additional resources required, amount to be determined</p>
Potential Funding Sources	<p>City General Fund Refuse Fee</p> <p>Pre-Disaster Mitigation Grant Program (PDM)</p> <p>Hazard Mitigation Grant Program (HMGP)</p> <p>Assistance to Firefighters Grant</p> <p>California Climate Investments Fire Prevention Grant Program</p>
Activity Type(s) (Federal Mitigation Grant Funding only)	Mitigation: Hazardous Fuels Reduction

2019 Hills Pedestrian Evacuation	Manage and promote pedestrian evacuation routes in Fire Zones 2 and 3.
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Proposed Activities	<ul style="list-style-type: none"> a) Public Works Staff will maintain paths on an as-needed basis, and will coordinate with the Berkeley Path Wanderers to maintain public pathways to provide safe pedestrian evacuation routes from the hill areas. b) Maintain signage for public pathways to identify safe and accessible pedestrian evacuation routes from the hill areas. c) Update City maps of all emergency access and evacuation routes to include pedestrian pathways. d) Publicize up-to-date maps of all emergency access and evacuation routes.
Related Natural Hazard(s)	<p>Earthquake</p> <p>Wildland-Urban Interface Fire</p>
Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-1 Response Planning, Action B</p> <p>General Plan Policy S-22 Fire Fighting Infrastructure, Action A</p> <p>General Plan Policy T-28 Emergency Access, Actions B and C</p>
Lead Organization(s) and Staff Lead(s)	<p>Department of Public Works (Maintenance)</p> <p>Paths: Engineering Division – Assistant Public Works Engineer</p> <p>Signage: Transportation Division – City Traffic Engineer</p> <p>Department of Information Technology (Mapping)</p> <p>GIS Division GIS Coordinator</p> <p>Fire Department (Outreach)</p> <p>Office of Emergency Services - Emergency Services Coordinator</p>
Priority	High
Timeline	Ongoing

Additional Resources Required	No additional resources required (additional funding could facilitate additional activities)
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2019 Hills Roadways and Parking	Improve responder access and community evacuation in Fire Zones 2 and 3 through roadway maintenance and appropriate parking restrictions.
Proposed Activities	<ul style="list-style-type: none"> a) Maintain and improve roadways in Fire Zones 2 and 3. b) Maintain community-driven process to identify and consider areas for parking restrictions and red curbing. c) Explore options for comprehensive parking restrictions in Fire Zones 2 and 3 during Red Flag and/or Extreme Fire Weather conditions. d) Develop and enforce Fire Code requirement for fire fuel clearance on public roadways (see Fire Code action for details)
Related Natural Hazard(s)	<p>Earthquake</p> <p>Wildland-Urban Interface Fire</p>
Associated LHMP Objective(s)	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. B. Increase City government’s ability to serve the community during and after hazardous events by mitigating risk to key City functions. D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-16, Action A</p> <p>General Plan Policy T-25, Action A</p> <p>General Plan Policy T-28, Action D</p> <p>General Plan Policy S-22, Action A</p>
Lead Organization(s) and	<p>Roadway maintenance</p> <p>Public Works Department: Engineering Division</p>

Staff Lead(s)	<p>Staff Lead: Supervising Civil Engineer</p> <p>Community-driven parking restrictions</p> <p>Public Works Department: Transportation Division</p> <p>Staff Lead: Supervising Traffic Engineer</p> <p>Fire weather parking restrictions</p> <p>Fire Department: Office of Emergency Services</p> <p>Staff Lead: Assistant Chief</p> <p>Fire Department: Fire Prevention Division</p> <p>Staff Lead: Fire Marshal</p>
Priority	High
Timeline	<p>Roadway maintenance: Ongoing</p> <p>Community-driven parking restrictions: Ongoing</p> <p>Fire weather parking restrictions: Conceptual Plan in 2020, Implement Pilot with Community Education in 2021, Plan Enforcement in 2022</p>
Additional Resources Required	No additional resources required

2019	Coordinate with PG&E for the construction of undergrounding in the Berkeley Hills within approved Underground Utility Districts (UUDs).
Undergrounding	
Proposed Activities	<p>a) Construction of undergrounding in the Berkeley Hills within UUD No. 48 (portions of Grizzly Peak Blvd., Summit Rd., Avenida Dr., Fairlawn Dr., and Senior Ave.)</p> <p>b) Construction of undergrounding of overhead utility wires within UUD No. 35A (Vistamont Ave., Rochdale Way, and Rosemont Ave from Woodmont Ave. to Vistamont Ave.)</p> <p>c) Construction of undergrounding of overhead utility wires on Bayview Place</p>
Related Natural Hazard(s)	<p>Earthquake</p> <p>Wildland-Urban Interface Fire</p>

Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>B. Preserve Berkeley’s unique character and values from being compromised by hazardous events.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy T-28, Action E</p> <p>General Plan Policy S-1, Actions B and C</p> <p>General Plan Policy S-12, Action B</p> <p>General Plan Policy S-22, Action A</p> <p>General Plan Policy UD-8, Action A</p>
Lead Organization(s) and Staff Lead(s)	<p>Public Works Department- Engineering</p> <p>Staff Lead: City Engineer</p>
Priority	High
Timeline	<p>UUD No. 48</p> <p>Hold Community Meeting for Lighting Selection: November 2018</p> <p>Secure Easements for Above Ground Structures: November 2018 - March 2019</p> <p>Advertise for Bids: February 2019</p> <p>Construction Contract Award: Late Spring 2019</p> <p>Construction Start: Summer 2019</p> <p>UUD No. 35A</p> <p>On hold</p> <p>UUD Bayview Place</p> <p>On hold</p>
Additional Resources Required	<p>Funding for UUD No.48:</p> <p>General Fund for staff time, consultant services, lighting, and payment for easements if it is required</p> <p>Assessed fees for lighting</p> <p>Rule 20A Funds for construction</p>

	Funding for UUD 35A: General Fund Remaining Rule 20A Funds Funding for UUD Bayview Place: Property Owner Funds (20B) General Fund for consultant services
Potential Funding Sources	Funding for UUD No.48: General Fund Rule 20A Funds Funding for UUD 35A: General Fund Rule 20A Funds Funding for UUD Bayview Place: Property Owner Funds
Activity Type(s) (Federal Mitigation Grant Funding only)	Federal mitigation grant funding is not anticipated

2019 EBMUD	Work with EBMUD to ensure an adequate water supply during emergencies and disaster recovery.
Proposed Activities	a) Coordinate with EBMUD regarding plans to install a new 48-inch aqueduct by 2020 to be able to continue potable and firefighting water supply following a seismic event. b) Explore project approaches with EBMUD to expedite replacement of problem pipelines in Berkeley neighborhoods exposed to wildland-urban interface fire and seismic ground failure. c) Coordinate with EBMUD to ensure that pipeline replacement projects and upgrades are coordinated with the City's five-year street paving program and other City programs.
Related Natural Hazard(s)	Earthquake Wildland-Urban Interface Fire

Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p>
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-12: Utility and Transportation Systems, Action A
Lead Organization(s) and Staff Lead(s)	Department of Public Works – Engineering Division Staff Lead: City Engineer
Priority	High
Timeline	Ongoing
Additional Resources Required	No additional resources required

2019 Extreme Heat	Reduce Berkeley’s vulnerability to extreme heat events and associated hazards.
Proposed Activities	<p>a) Monitor and support regional and State-level efforts to forecast the impact of climate change on temperatures and incidence of extreme heat events in Berkeley and the region, and integrate extreme heat event readiness, focusing on the most vulnerable populations impacted and improving access to resources, into City operations and services.</p> <p>b) Continue to create and maintain shading by maintaining the health of existing trees and sustaining municipal tree planting with a focus on efforts in areas where there are fewer trees.</p> <p>c) Continue to implement energy efficiency ordinances for existing residential and commercial buildings to improve building comfort, including in extreme</p>

	<p>weather conditions, and to reduce energy use.</p> <p>d) Encourage cooling technologies for the built environment through voluntary programs to mitigate the urban heat island effect. This can include strategies like green roofs, cool roofs, and cool pavements, increased vegetation, as well as electric heat pumps and natural ventilation which can provide cooling to buildings in an extreme heat event.</p>
Related Natural Hazard(s)	<p>Climate Change</p> <p>Extreme Heat</p>
Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p> <p>E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.</p>
Related Policies from the General Plan or Climate Action Plan	<p>Climate Action Plan - Adaptation Goal 1, Policies A and D</p> <p>General Plan Policy EM-29: Street and Park Trees</p>
Lead Organization(s) and Staff Lead(s)	<p>Planning Department – Office of Energy and Sustainable Development (Monitor Impacts, Energy Efficiency Ordinances, Cooling Technologies)</p> <p>Staff Lead: Climate Action Program Coordinator</p> <p>Department of Parks, Recreation and Waterfront – Parks Division (Tree Planting)</p> <p>Staff Lead: Parks Superintendent</p>
Priority	<p>High</p>
Timeline	<p>Ongoing</p>
Additional Resources Required	<p>Scientific monitoring, energy efficiency ordinances, cooling technologies: Additional funding required for implementation</p>

Potential Funding Sources	<p>Tree planting: Dependent on State of California Environmental Enhancement Mitigation Program Grant</p> <p>City General Fund</p> <p>Tree planting grants</p> <p>City Parks Tax Fund 450</p> <p>Ratepayer funds from PG&E or East Bay Community Energy</p> <p>Grants from Energy Foundation, Urban Sustainability Directors Network, California Energy Commission, California Air Resources Board, Bay Area Air Quality Management District, U.S. Department of Energy</p>
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2019 Hazardous Materials	Mitigate hazardous materials release in Berkeley through inspection and enforcement programs.
Proposed Activities	<ul style="list-style-type: none"> a) Implement Hazardous Materials Release Response Plans and Inventories (HMRRP) Program b) Implement California Accidental Release Prevention (CalARP) Program c) Implement Underground Storage Tank (UST) Program d) Implement Aboveground Petroleum Storage Act Requirement for Spill Prevention e) Implement Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs f) Implement Hazardous Materials Management Plans (HMMP) and Hazardous Materials Inventory Statements per California Fire Code g) Enforce California Fire Code for Hazardous Materials Compliance (See Fire Code Action)
Related Natural Hazard(s)	<p>Earthquake</p> <p>Wildland-Urban Interface Fire</p> <p>Landslide</p> <p>Floods</p> <p>Tsunami</p>

Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy EM-12, Action A</p> <p>General Plan Policy EM-13, Action A</p> <p>General Plan Policy EM-14, Actions A and B</p>
Lead Organization(s) and Staff Lead(s)	<p>Planning: Toxics Division (all programs except Fire Code enforcement)</p> <p>Staff Lead: Hazardous Materials Manager</p> <p>Fire Department: Fire Prevention Division (Fire Code)</p> <p>Staff Lead: Fire Marshal</p>
Priority	High
Timeline	Ongoing
Additional Resources Required	No additional resources required

2019 Air Quality	Define clean air standards for buildings during poor air quality events and use those standards to assess facilities for the Berkeley community.
Proposed Activities	<p>a) Participate in regional efforts to define standards and tools to predict buildings' ability to deliver clean air to occupants during poor air quality events.</p> <p>b) Apply standards and tools to assess City facilities' ability to provide clean air to occupants during poor air quality events.</p> <p>c) Coordinate with willing Berkeley partners to apply standards and tools to partner facilities.</p> <p>d) Use findings to develop a list of potential clean air facilities (City-run and partner-run) to the community.</p>

Related Natural Hazard(s)	Wildland-Urban Interface Fire Extreme Heat
Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p> <p>E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.</p>
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-20
Lead Organization(s) and Staff Lead(s)	<p>Standards Development: Department of Health, Housing and Community Services: Public Health and Environmental Health Divisions</p> <p>Staff Leads: Health Officer/Environmental Health Division Manager</p> <p>Standards Implementation at City Facilities: Department of Public Works:</p> <p>Staff Lead: Facilities Division – Supervising Civil Engineer</p> <p>Staff Lead: Building Maintenance Supervisor</p> <p>Partner Coordination and Community Outreach: Fire Department: Office of Emergency Services</p> <p>Staff Lead: Chief of Special Operations</p>
Priority	High
Timeline	To be determined
Additional Resources Required	To be determined

2019 NFIP	Maintain City participation in the National Flood Insurance Program.
Proposed Activities	<ul style="list-style-type: none"> a) Continue to use the most current FEMA information defining flood areas. b) Continue to incorporate FEMA guidelines and suggested activities into City plans and procedures for managing flood hazards.
Related Natural Hazard(s)	Floods
Associated LHMP Objective(s)	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. B. Increase City government’s ability to serve the community during and after hazardous events by mitigating risk to key City functions. D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-28 Flood Insurance, Actions B and C
Lead Organization(s) and Staff Lead(s)	<p>Public Works Department:</p> <p>Engineering Division (NFIP application to City projects; Program Management)</p> <p>Staff Leads: Manager of Engineering, Director of Public Works</p> <p>Planning Department (application to private projects):</p> <p>Land Use Planning Division (determines if new project is subject to NFIP regulations)</p> <p>Staff Lead: Land Use Manager</p> <p>Building and Safety Division (coordinates to ensure that projects are compliant with Flood Zone Development Ordinance)</p>

Staff Lead: Senior Plan Check Engineer	
Priority	High
Timeline	Ongoing
Additional Resources Required	No additional resources required

2019 Hazard Information	Collect, analyze and share information with the Berkeley community about Berkeley hazards and associated risk reduction techniques.
Proposed Activities	<ul style="list-style-type: none"> a) Track changes in hazard risk using the best-available information and tools. b) Collect and share up-to-date hazard maps identifying areas subject to heightened risk from hazards. c) Publicize financial and technical assistance resources for risk reduction.
Related Natural Hazard(s)	<ul style="list-style-type: none"> Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat
Associated LHMP Objective(s)	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. B. Increase City government’s ability to serve the community during and after hazard events by mitigating risk to key City functions. C. Preserve Berkeley’s unique character and values from being compromised by hazard events. D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in

	<p>order to increase mitigation actions and disaster resilience in the community.</p> <p>E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-13: Hazards Identification, Action A</p> <p>General Plan Policy S-19: Risk Analysis, Action A</p> <p>General Plan Policy UD-12, Actions A and C</p> <p>Climate Action Plan: Adaptation Action A</p>
Lead Organization(s) and Staff Lead(s)	<p>Fire Department – Office of Emergency Services</p> <p style="padding-left: 40px;">Lead Staff: Emergency Services Coordinator</p> <p>Office of Energy and Sustainable Development (Climate Change Hazards)</p> <p style="padding-left: 40px;">Lead Staff: Climate Action Program Coordinator</p>
Priority	High
Timeline	Ongoing
Additional Resources Required	No additional resources required
Potential Funding Sources	<p>General Fund</p> <p>Measure GG Special Revenue Fund</p>

2019 Partnerships	Coordinate with and encourage mitigation actions of key City partners.
Proposed Activities	<p>a) Coordinate with and encourage mitigation actions of:</p> <ul style="list-style-type: none"> • Institutions serving the Berkeley community • Berkeley organizations and nonprofits • Other partners whose actions affect the Berkeley community

Related Natural Hazard(s)	<p>Earthquake</p> <p>Wildland-Urban Interface Fire</p> <p>Landslide</p> <p>Floods</p> <p>Tsunami</p> <p>Climate Change</p> <p>Extreme Heat</p>
Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>B. Increase City government’s ability to serve the community during and after hazardous events by mitigating risk to key City functions.</p> <p>C. Preserve Berkeley’s unique character and values from being compromised by hazardous events.</p> <p>D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster resilience in the community.</p> <p>E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-5 The City’s Role in Leadership and Coordination, Actions A and B</p> <p>General Plan Policy UD-7, Actions A and B General Plan Policy UD-12, Actions A and C</p> <p>General Plan Policy S-12 Utility and Transportation Systems, Action A</p>
Lead Organization(s) and Staff Lead(s)	<p>Fire Department: Office of Emergency Services</p> <p>Staff Lead: Assistant Chief of Special Operations</p>
Priority	High
Timeline	Ongoing

Additional Resources Required	To be determined
Potential Funding Sources	General Fund Measure GG Special Revenue Fund

C.5.b.ii Medium-Priority Actions

2019	Reduce Berkeley’s vulnerability to severe storms and associated hazards through proactive research and planning, zoning regulations, and improvements to stormwater drainage facilities.
Severe Storms	
Proposed Activities	<ul style="list-style-type: none"> a) Use development standards to ensure that new development does not contribute to an increase in flood potential. b) Complete the Watershed Management Plan to recommend improvements to problem areas in individual watersheds, and develop a Stormwater Master Plan to perform hydraulic analysis and condition assessment, and identify flow capacity and flooding issues as basis for the Watershed Management Plan. c) Design public improvements such as streets, parks and plazas, for retention and infiltration of stormwater by diverting urban runoff to bio-filtration systems.
Related Natural Hazard(s)	<p>Landslide</p> <p>Floods</p> <p>Climate Change</p>
Associated LHMP Objective(s)	A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy S-26, Actions B and C</p> <p>General Plan Policy S-27 New Development</p> <p>Climate Action Plan - Adaptation Goal 1, Policy C</p>
Lead Organization and Staff Lead	<p>Planning Department – Land Use Planning Division (Development Standards)</p> <p>Staff Lead: Land Use Manager</p> <p>Public Works Department – Engineering Division</p> <p>Staff Lead: Supervising Civil Engineer (Watershed Management Plan and Public Improvements)</p>
Priority	Medium

Timeline	Ongoing
Additional Resources Required	Development Standards: To be determined Watershed Management Plan/Stormwater Master Plan: To be determined Public Improvements Design: To be determined
Potential Funding Sources	City General Fund Permit Service Center Enterprise Fund Measure M Bond Funds Pre-Disaster Mitigation Grant Program (PDM) Hazard Mitigation Grant Program (HMGP)
Activity Type(s)	Mitigation: Infrastructure Retrofit

2019 Energy Assurance	Implement energy assurance strategies at critical City facilities.
Proposed Activities	<ul style="list-style-type: none"> a) Identify potential actions to mitigate energy assurance vulnerabilities at critical City facilities during planning/conceptual design. b) Provide guidance to help the City consider opportunities to design, finance and implement clean energy assurance strategies (e.g., photovoltaic-supplemented generation, energy efficiency activities, and/or mobile charging stations).
Related Natural Hazard(s)	Earthquake Wildland-Urban Interface Fire Landslide Floods Tsunami Climate Change Extreme Heat

Associated LHMP Objective(s)	<p>A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.</p> <p>B. Increase City government’s ability to serve the community during and after hazardous events by mitigating risk to key City functions.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan - Disaster Preparedness and Safety Element: Objective 1</p> <p>General Plan Policy S-8: Continuity of Operations Climate Action Plan – Chapter 4, Goal 5: Increase Energy Efficiency and Renewable Energy Use in Public Buildings – Policies 5a and 5b</p>
Lead Organization(s) and Staff Lead(s)	<p>Department of Public Works – Facilities Division (Identify actions)</p> <p style="padding-left: 40px;">Staff Lead: Supervising Civil Engineer (for facilities)</p> <p>Planning Department – Office of Energy and Sustainable Development (Clean Energy Opportunities)</p> <p style="padding-left: 40px;">Staff Lead: Climate Action Program Manager</p>
Priority	Medium
Timeline	Ongoing
Additional Resources Required	Additional resources to analyze specific energy assurance options for individual projects.
Potential Funding Sources	<p>General Fund</p> <p>T1 Bond</p> <p>Measure GG Special Revenue Fund</p> <p>Ratepayer funds from PG&E or East Bay Community Energy</p> <p>Grants from Energy Foundation, Urban Sustainability Directors Network, California Energy Commission, California Air Resources Board, Bay Area Air Quality Management District, U.S. Department of Energy</p>

2019 Climate Change Integration	Mitigate climate change impacts by integrating climate change research and adaptation planning into City operations and services.
Proposed Activities	<ol style="list-style-type: none"> a) Determine staffing needs to monitor research and oversee integration of climate change adaptation into City operations and services b) Develop and implement a process to integrate adaptation planning into City operations. Activities include: <ol style="list-style-type: none"> a. Train City staff on the basic science and impacts of climate change and on climate adaptation strategies b. Develop policy and programs to address potential climate impacts in municipal capital and land use planning
Related Natural Hazard(s)	Climate Change Extreme Heat
Associated LHMP Objective(s)	A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.
Related Policies from the General Plan or Climate Action Plan	<ul style="list-style-type: none"> • Climate Action Plan – Adaptation, Goal 1A • Climate Action Plan – Community Outreach and Empowerment, Goal 1A • Climate Action Plan – Implementation, Monitoring and Reporting, Goals 2, 3 and 4
Lead Organization(s) and Staff Lead(s)	Planning Department – Office of Energy and Sustainable Development Staff Lead: Climate Action Program Manager
Priority	Medium
Timeline	Determine staffing needs: 3-4 years Staff Training: Ongoing Address climate impacts in municipal planning processes: 1-2 years
Additional	To be determined

Resources Required	
Potential Funding Sources	General Fund Permit Service Center Enterprise Fund

2019	Mitigate the impacts of sea level rise in Berkeley.
Sea Level Rise	
Proposed Activities	<ul style="list-style-type: none"> a) Monitor and participate in regional and State-level research on projected sea-level rise in Berkeley and the region. b) Develop guidelines, regulations, and review development standards to ensure new and existing public and private developments and infrastructure are protected from floods due to sea-level rise.
Related Natural Hazard(s)	Climate Change
Associated LHMP Objective(s)	A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.
Related Policies from the General Plan or Climate Action Plan	<p>Climate Action Plan, Adaptation Policies A and C</p> <p>General Plan Goal 6: Make Berkeley a disaster-resistant community that can survive, recover from, and thrive after a disaster – Utilize Disaster-Resistant Land Use Planning</p> <p>General Plan Policy S-27: New Development</p> <p>General Plan Policy S-14: Land Use Regulation, Action E</p>
Lead Organization(s) and Staff Lead(s)	<p>Planning Department – Office of Energy and Sustainable Development (Monitor Research/Integrate Considerations)</p> <p style="padding-left: 40px;">Staff Lead: Climate Action Program Manager</p> <p>Planning Department – Land Use Planning Division (Development Regulations)</p> <p style="padding-left: 40px;">Staff Lead: Division Director</p>
Priority	Medium
Timeline	Research: Ongoing

	Policy Development: 2 years
Additional Resources Required	Research: Additional staff capacity or funding needed for further analysis. Policy Development: Additional staff capacity to develop regulations and standards.
Potential Funding Sources	General Fund Permit Service Center Enterprise Fund Adapting to Rising Tides, San Francisco Bay Conservation & Development Commission, National Oceanic & Atmospheric Administration, Urban Sustainability Director's Network, or Resource Legacy Fund

2019 Water Security	Collaborate with partners to increase the security of Berkeley's water supply from climate change impacts.
Proposed Activities	<ul style="list-style-type: none"> a) Partner with East Bay Municipal Utility District (EBMUD) to provide and market incentives for residents, businesses and institutions to conserve water. b) Partner with agencies such as EBMUD and StopWaste to encourage private property owners and public agencies (including the City government) to use sustainable landscaping techniques that require less water and energy to maintain. c) Encourage water efficiency and conservation in existing buildings, such as incorporating water assessments into existing policies or creating a compliance program for SB407.
Related Natural Hazard(s)	Climate Change
Associated LHMP Objective(s)	<ul style="list-style-type: none"> A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts. D. Connect with residents, community-based organizations, institutions, businesses, and essential lifeline systems in order to increase mitigation actions and disaster

	resilience in the community.
Related Policies from the General Plan or Climate Action Plan	Climate Action Plan - Adaptation Goal 1, Policy B General Plan Policy EM-25: Groundwater General Plan Policy EM-26: Water Conservation General Plan Policy EM-31: Landscaping
Lead Organization(s) and Staff Lead(s)	Planning Department – Office of Energy and Sustainable Development Staff Lead: Climate Action Program Coordinator (Water Recycling/Incentives) Staff Lead: Sustainability Planner (Landscaping Techniques) Staff Lead: Climate Action Program Coordinator (Water Efficiency and Conservation)
Priority	Medium
Timeline	Encourage water efficiency in existing policies: 2-3 years
Additional Resources Required	Additional staff capacity.
Potential Funding Sources	General Fund Permit Service Center Enterprise Fund

C.5.b.iii Low-Priority Actions

2019	Mitigate Berkeley's tsunami hazard.
Tsunami	
Proposed Activities	<ul style="list-style-type: none"> a) Fund and replace damaged finger docks. b) Secure funding for replacement of D and E docks; begin the permitting process once funding is secure c) Begin the permitting process for piling replacement. d) Repair University Avenue, Marina Boulevard, and Spinnaker Way in order to mitigate tsunami vulnerabilities. e) Collaborate with the California Office of Emergency Services, the California Geological Survey, and the Federal Emergency Management Agency to document and explore additional tsunami hazard mitigation measures for Berkeley's maritime communities.
Related Natural Hazard(s)	Tsunami
Associated LHMP Objective(s)	A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquakes, wildfires, landslides, floods, tsunamis, climate change, extreme heat, and their secondary impacts.
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-19: Risk Analysis, Action A
Lead Organization(s) and Staff Lead(s)	<p>All activities: Parks, Recreation and Waterfront Department – Marina Division</p> <p>Staff Lead: Waterfront Manager, Alexandra Endress, and Waterfront Supervisor, Stephen Bogner.</p> <p>Cal OES/CGS/FEMA collaboration: Fire Department – Office of Emergency Services</p> <p>Staff Lead: Emergency Services Coordinator</p>
Priority	Low

Timeline	Activities a) - d): funding-contingent Activity e) To be determined
Additional Resources Required	a) Finger Dock Replacement: estimated \$100k-\$500k b) D and E Dock Replacement: estimated \$4-7 million c) Piling replacement: estimated \$50k for permitting only d) Roadway repair: estimated \$4-6 million e) No additional resources required
Potential Funding Sources	Pre-Disaster Mitigation Grant Program (PDM) Hazard Mitigation Grant Program (HMGP) General Fund City-Issued Bonds
Activity Type(s) (Federal Mitigation Grant Funding only)	Mitigation: Infrastructure Retrofit

2019	Streamline the zoning permitting process to rebuild residential and commercial structures following disasters.
Streamline Rebuild	
Proposed Activities	<ul style="list-style-type: none"> a) Explore a Zoning Amendment to BMC 23C.04.100 that streamlines the Zoning permitting process to allow damaged industrial and commercial buildings, and dwelling units to rebuild by right following disasters. b) Consider different treatment for buildings in high-risk areas, such as: <ul style="list-style-type: none"> a. Imposing higher standards of building construction for rebuilding b. Excluding buildings in these areas from the amendment c) Define the standard for documentation of current conditions for residential and commercial property owners to rebuild by right (in conformity with current applicable codes, specifications and standards) following disasters. d) Define the process for the City to accept and file this documentation. e) Outreach to property owners about this documentation process.

Related Natural Hazard(s)	<p>Earthquake</p> <p>Wildland-Urban Interface Fire</p> <p>Landslide</p> <p>Floods</p> <p>Tsunami</p>
Associated LHMP Objective(s)	<p>C. Preserve Berkeley’s unique character and values from being compromised by hazardous events.</p> <p>E. Protect Berkeley’s historically underserved populations from the impacts of hazardous events by applying an equity focus to mitigation efforts.</p>
Related Policies from the General Plan or Climate Action Plan	<p>General Plan Policy LU-26: Neighborhood Commercial Areas</p> <p>General Plan Policy LU-27: Avenue Commercial Areas</p> <p>General Plan S-9: Pre-Event Planning, Action B</p> <p>General Plan policy UD-7, Action C</p>
Lead Organization(s) and Staff Lead(s)	<p>Planning Department – Land Use Planning Division</p> <p>Staff Lead: Division Manager</p>
Priority	Low
Timeline	2 years
Additional Resources Required	Staff with capacity to focus on this effort
Potential Funding Sources	General Fund

Pearson, Alene

From: Pearson, Alene
Sent: Monday, December 17, 2018 8:26 AM
To: Pearson, Alene
Subject: FW: please share with the Planning Commission

Please see the communication below.

From: Margy Wilkinon [margylw@earthlink.net]
Sent: Saturday, December 15, 2018 10:13 PM
To: Burroughs, Timothy; 'Chris Schildt'
Subject: please share with the Planning Commission

Dear Planning Commission: Please read this article.
Thank you,
Margy Wilkinon

<https://www.sfchronicle.com/bayarea/article/City-requires-property-owner-who-demolished-13467909.php>

Pearson, Alene

From: Pearson, Alene
Sent: Thursday, December 20, 2018 2:58 PM
To: Pearson, Alene
Subject: FW: Housing supply and affordability
Attachments: Supply Skepticism Housing Supply and Affordability.pdf; The Elephant in the Zoning Code Single Family Zoning in the Housing Supply Discussion.pdf

Dear Commissioners.
See email below and attached articles.

From: Jeff Vincent
Sent: Thursday, December 20, 2018 2:50 PM
To: Pearson, Alene <apearson@cityofberkeley.info>
Subject: Housing supply and affordability

Hi Alene,
Would you mind sharing this with my Planning Commission colleagues?
Thank you,
Jeff Vincent

Hi all,
We frequently have robust discussion about the link between housing supply and housing affordability. To aid that discussion, I wanted to share two new pieces on this:
First is a recent commentary by Rick Jacobus, a national affordable housing expert (who happens to live in Oakland). He briefly outlines Weiner's new housing bill and notes the debate on supply vs. affordability. <https://shelterforce.org/2018/12/11/hey-yimbys-thanks-for-listening/>
Second, is a brand new article in the academic journal *Housing Policy Debate* (that Rick links to an early white paper draft of). The article, "Supply Skepticism: Housing Supply and Affordability" (by Vicki Been et al.) reviews what research has shown about housing supply and its effect on affordability. It is attached here in PDF for your holiday reading pleasure.
(Also attached is the short commentary on the article by Paavo Monkonnen, UCLA professor, Berkeley alum)

[FYI: here is the Table of Contents for this volume, which is a special edition on the Future of Housing Policy: <https://www.tandfonline.com/toc/rhpd20/29/1?nav=tocList>]

I hope everyone one has a fabulous holiday and I'll see you in January.

Jeff Vincent



Housing Policy Debate

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Supply Skepticism: Housing Supply and Affordability

Vicki Been, Ingrid Gould Ellen & Katherine O'Regan

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To link to this article: <https://doi.org/10.1080/10511482.2018.1476899>



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Supply Skepticism: Housing Supply and Affordability

Vicki Been^a, Ingrid Gould Ellen^b and Katherine O'Regan^b

^aNew York University School of Law, NYU Furman Center, New York, USA; ^bNYU Wagner School, NYU Furman Center, New York, USA

ABSTRACT

Growing numbers of affordable housing advocates and community members are questioning the premise that increasing the supply of market-rate housing will result in housing that is more affordable. Economists and other experts who favor increases in supply have failed to take these supply skeptics seriously. But left unanswered, supply skepticism is likely to continue to feed local opposition to housing construction, and further increase the prevalence and intensity of land-use regulations that limit construction. This article is meant to bridge the divide, addressing each of the key arguments supply skeptics make and reviewing what research has shown about housing supply and its effect on affordability. We ultimately conclude, from both theory and empirical evidence, that adding new homes moderates price increases and therefore makes housing more affordable to low- and moderate-income families. We argue further that there are additional reasons to be concerned about inadequate supply response and assess the evidence on those effects of limiting supply, including preventing workers from moving to areas with growing job opportunities. Finally, we conclude by emphasizing that new market-rate housing is necessary but not sufficient. Government intervention is critical to ensure that supply is added at prices affordable to a range of incomes.

ARTICLE HISTORY

Received 1 October 2017
Accepted 11 May 2018

KEYWORDS

Housing; low-income housing; land use/zoning; construction/building; development/revitalization; markets; prices; regulation

In the face of rising prices, growing numbers of advocates and community members are seeking to defeat development proposals and arguing for policies to restrict new development in popular urban areas. These groups question the premise that increasing the supply of market-rate housing will improve housing affordability. Indeed, many advocates oppose development of new affordable housing as well, unless it serves the households at the very lowest end of the income distribution currently in place in the neighborhood. In those arguments, advocates and community members often find themselves on the same side as those who oppose development for reasons having nothing to do with affordability, but are focused instead on protection of historic streetscapes, low-density character, individual viewsheds, or other traditional not-in-my-backyard concerns. This confluence of opposition is becoming a powerful block against development in many cities.

Opposition to new development has long been expected from homeowners who benefit from the higher housing prices they believe will result from limits on supply (Fischel, 2005). But opposition to new development now also comes from renters and others who advocate for *lower* rents and housing prices. Those opponents share what we call *supply skepticism*—the disbelief that additional market-rate housing helps make housing more affordable, and indeed a view that it may increase rents and prices.¹ Skeptics argue, first, that land in many high-cost cities is such a constrained good that it should be devoted to affordable housing, because any market-rate

housing will come at the direct expense of affordable homes. Second, skeptics dispute the notion that new market-rate housing causes other housing to filter to lower income households, at least in a reasonable time frame, and argue that adding supply at the top end will do little or nothing to alleviate affordability challenges in lower priced segments of the market. Third, skeptics worry about *induced* demand, fearing that the more you build, the more they'll come, and the more that wealthier people in particular will come.² In a dynamic system, they argue, any decreases in price resulting from additional supply will be fully offset by additional demand resulting from the lower cost. Fourth, skeptics seize on potential localized spillover effects from newly constructed housing, and assert that even if increasing supply might slow the growth in housing costs across the city, new housing will increase rents and trigger displacement in the immediately surrounding neighborhood.

Economists and other experts who favor allowing for increases in supply to mitigate rising prices and rents have not provided adequate answers to such arguments. They have tended to dismiss local costs to growth, have often ignored or discounted the benefits that may flow from regulations that may also hinder growth, and, more generally, have failed to take the supply skeptics seriously. Local elected officials, along with housing and land-use agencies, accordingly struggle to offer persuasive arguments to garner support for the increased production of housing. Not surprisingly, then, local residents and other supply skeptics continue to oppose the creation of new housing, and the prevalence and intensity of land-use regulations that limit construction continue to increase (Gyourko & Molloy, 2015; Gyourko, Saiz, & Summers, 2008; Schuetz, 2009).

This article is meant to bridge the divide between the arguments made by supply skeptics and what research has shown about housing supply and its effect on affordability. In the following section, we address each of the key arguments that increasing supply does not improve affordability. Many of the arguments are plausible, and research does not fully counter all of them, but the preponderance of evidence suggests that easing barriers to new construction will moderate price increases and therefore make housing more affordable to low- and moderate-income families. Moreover, supply restrictions inhibit the ability of workers to move to areas with growing job opportunities. Allowing more new housing thus is critical both to ease affordability pressures and to reduce other negative results of constricted supply. But more new housing will not fully address affordability challenges; efforts to increase supply must be paired with subsidies and other tools to ensure that communities remain (or become) economically diverse as they grow. In addition, there are crucial gaps to be addressed in future research to help move the policy discussion forward. In the final section, we recommend that new development include housing rented or sold at a variety of price points (using subsidies as needed), so that growth is balanced among the various income levels in the community. We also outline the research needed to better understand the relationship between supply and affordability, and to ensure that efforts to increase supply are most effective.

I. The Relationship Between Land-Use Regulations, Supply, and Affordability: Assessing the Arguments

Despite the arguments raised by supply skeptics, there is a considerable body of empirical research showing that less restrictive land-use regulation is associated with lower prices.³ The evidence takes many forms. A large number of cross-sectional studies show that stricter (less strict) local land-use regulations are associated with less (more) new construction and higher (lower) prices. Glaeser and Gyourko (2003), along with Gyourko and Molloy (2015), survey that literature and conclude that “[t]he vast majority of studies have found that locations with more regulation have higher house prices and less construction” (Gyourko & Molloy, 2015, p. 42). For example, Kok, Monkkonen, and Quigley (2014) find that in California’s San Francisco Bay Area, the stringency of

regulation and number of approvals needed to obtain permits or zoning changes strongly correlate with the value of land, and thereby lead to higher house prices.

A few studies use panel data and find that the imposition of more stringent land-use controls leads to lower supply and higher prices. Jackson (2016) uses longitudinal data from California's cities to assess the effect a city's adoption of additional land-use regulations has on the number of new construction permits issued, and finds that each additional land-use regulation adopted reduced multifamily and single-family permits by an average of more than 6% and 3%, respectively, and that regulations reducing allowable density had even larger effects. Zabel and Dalton (2011) use longitudinal data from localities in Massachusetts and find that increases in minimum lot sizes are followed by significant increases in prices. Looking at longitudinal data on municipalities in the Boston (Massachusetts) metropolitan area, Glaeser and Ward (2009) find that the adoption of stricter local regulations leads to higher house prices, but the coefficient falls in magnitude and loses significance once they control for population demographics. They point out that this is expected, if homes in other jurisdictions are seen as perfect substitutes. Thus, whereas supply restrictions may increase prices in a market as a whole, they may not increase them disproportionately in the particular locality where they are imposed due to spillover effects across jurisdictions.

Several other researchers use instrumental variables to try to more clearly assess the causal effects regulatory restrictions have on housing supply and prices. Ihlanfeldt (2007) uses such an approach to study regulation in localities in Florida and finds that predicted regulations significantly increase the price of single-family homes. Saks (2008) uses instrumental variables and shows that increases in labor demand lead to less residential construction and larger increases in housing prices in metropolitan areas with more restrictive housing supply. Hilber and Vermeulen (2016) show that changes in demand lead to increases in local house prices rather than increases in supply in municipalities in England with greater regulatory restrictions, measured by the refusal rate of proposed residential projects and the number of project approvals delayed more than 13 weeks.

In sum, the preponderance of the evidence shows that restricting supply increases housing prices and that adding supply would help to make housing more affordable. Despite this evidence, skepticism that increases in housing supply will improve affordability appears only to be growing. Part of the issue is that observers in many cities see prices rising despite new construction. What they do not see is the greater price increases that research suggests would have taken place if less construction had occurred. Below, we analyze four of the commonly voiced arguments that undergird supply skepticism, drawing on both basic economic theory and empirical evidence.

A. Housing Is Bundled With Land, but Still Is Ruled by the Laws of Supply and Demand

Some argue that the normal rules of supply and demand do not apply to housing because housing is tied to a specific plot of land, and unlike other inputs into the production of housing that may be in plentiful supply, the supply of land is limited in many jurisdictions by existing development and by geographical constraints such as coasts or mountains (Angotti & Morse, 2016). Indeed, critics argue that because land is inherently limited, the development of market-rate housing consumes scarce land that could otherwise be used for affordable housing.⁴ The argument often is accompanied by demands that high percentages (such as 50% or more) of all housing developed on private sites should be restricted as affordable housing (Durkin, 2016).

Whereas land is limited in supply, it is not necessarily the case that the land where market-rate housing (or a mixture of market-rate and affordable housing) is proposed would otherwise be used entirely for affordable housing. The land might continue to be too costly to support affordable housing, even if the land could not be used for housing for higher income households, because there are other uses competing for the land. Also, the reasons affordable housing is not provided in larger quantities go far beyond the lack of land and include the inadequacy of funding to pay for construction, financing costs, and operating costs. Further, programs like mandatory affordable

housing can ensure that developments using land for market-rate housing also include some affordable housing, although no inclusionary program imposes requirements as high as 50% of the units (Thadden & Wang, 2017).

More fundamentally, although it is surely true that land is constrained, especially in certain markets (Saiz, 2010), land can be used more intensively to allow for more housing. The limits on the land with which housing is bundled make housing different from many goods, but the difference is one of degree: the supply of housing can and does increase even in constrained markets, and prices should generally fall in response (see the review by Dipasquale, 1999; Mayer & Somerville, 2000).

B. Housing Is Heterogeneous, but Adding Supply in One Market Will Affect Prices in Another

A second argument raised by supply skeptics is that additions to housing supply tend to be luxury housing, but that “[t]he *only* increase in housing supply that will help to alleviate...[the] affordable housing crisis is housing that is truly affordable to low-income and working-class people” (Aguirre, Benke, Neugebauer, & Santiago, 2016, p. 1, emphasis in the original). They reject the idea that building housing at one price point has any significant effect on the price of housing in other submarkets (Council of Community Housing Organizations, 2016). Even if they acknowledge that these units may age and filter down to lower priced market segments over time, critics note that it will take many decades for them to do so.

It is true that housing is more heterogeneous than most other goods, and that housing markets are more segmented as a result. Housing comes in many different forms, ages, and sizes. Rather than having one unified housing market, it is more accurate to think of a city as having numerous housing submarkets, each with its own demand, supply, and price. It is also true that when first produced, housing tends to supply the medium- and high-end segments of a housing market, because housing is so expensive to build. Further, homes depreciate in value relatively slowly, and the direct filtering of new homes down to lower priced submarkets therefore can take decades.

Still, although housing is heterogenous, additions to the housing stock in one submarket can fairly quickly affect prices and rents in other submarkets by alleviating competition that would otherwise be diverted to those other submarkets. Imagine a city with no new construction. As demand increases and prices or rents rise for higher end housing, some homeseekers who would otherwise have searched in that submarket will be priced out. They will either leave the jurisdiction altogether or turn instead to somewhat less-expensive housing in the same city, increasing demand for housing in the next submarket. Unless there have been offsetting declines in demand for housing in those other submarkets, the failure of supply to respond to increased demand at the higher end will ripple through other submarkets as demand spills into these markets and increases their prices and rents.

What is more, these ripple effects may be compounded by owners’ decisions to upgrade their buildings. As prices increase in the higher end of the market, owners will find it more attractive to maintain or upgrade existing housing units that would otherwise have aged out of this submarket, slowing the movement of units to less-expensive submarkets through downward filtering.⁵ Indeed, if price increases are large and persistent enough, upgrading of existing units (and perhaps entire neighborhoods) will occur in other submarkets, further decreasing supply in less-expensive submarkets. Research provides some evidence that *filtering up* occurs in tight markets. Looking at 38 metropolitan areas, Somerville and Mayer (2003) find that units affordable to those with incomes at or below 35% of area median income are more likely to *filter up* or become unaffordable in metropolitan areas where housing supply is less responsive to demand (has lower elasticity), as proxied both by new single-family housing permits and by measures of land-use restrictions in the metropolitan area.

Finally, policymakers should not be so shortsighted as to overlook long-term effects. Over the longer run, increases in supply at the medium or higher end of the market should also increase supply in lower priced markets as older units that are now less valuable work their way down to lower priced submarkets.⁶ Housing lasts for many years, but most housing filters down, or loses value as it ages, representing *new* supply in submarkets at lower price points.⁷ In this way, newly constructed units at the high end of the market have a ripple effect across connected submarkets. As demand is met at the high end, the older units that are now less valuable work their way down to other submarkets. Although luxury apartments in the most desirable locations may never become part of the stock affordable to low-income households, their creation should help to increase supply and reduce prices in the next submarket, which over time should trigger some downward filtering of housing through various submarkets to lower priced submarkets.⁸

Empirical research shows that filtering is not just a theory posited on the pages of economic textbooks, but in fact occurs in real housing markets. Indeed, recent research shows that filtering was the primary source for additions to the affordable rental stock between 2003 and 2013, whereas new construction was the largest contributor for the higher priced rentals, and tenure conversion was the largest source for moderately priced rentals (Joint Center for Housing, 2015, fig. 14). Further, Weicher, Eggers, and Moumen (2016) report that 23.4% of the rental units that were affordable to very low-income renters in the United States in 2013 had filtered down from higher rent categories in 1985. Another 21.8% were conversions from formerly owner-occupied homes or seasonal rentals.⁹ Most of the higher priced rental units that filtered down to become affordable in 2013 were moderate-rent units in 1985, but 15% of those that filtered down were high-rent units in 1985.¹⁰ Note that filtering occurs over a shorter time frame too; among affordable units in 2013, 19% had been higher rent units as recently as 2005.

Recent research analyzing the incomes of successive occupants of homes also suggests substantial downward filtering, particularly of the rental stock due to tenure conversion; as the owner-occupied stock ages, a portion converts to rental (Rosenthal, 2014).¹¹ Rosenthal also finds, however, that filtering rates are considerably lower in areas with high house price inflation, although downward filtering still occurs.

In short, new construction is crucial for keeping housing affordable, even in markets where much of the new construction is itself high-end housing that most people can't afford. A lack of supply to meet demand at the high end affects prices across submarkets and makes housing less affordable to residents in lower-cost submarkets.

It is worth underscoring, however, that allowing more market-rate construction will not address the housing needs of all households. For at least the lowest income households, even the moderation of rent increases that results from expanded supply will likely be insufficient to make homes affordable to them. Housing subsidies, of some form, are still needed as well. However, as increases in housing supply moderate housing prices and rents overall, the gap between what a jurisdiction's lowest income households can afford and available prices and rents will be smaller, which will allow any government subsidies to go further.

C. Easing Price Pressure Through Additional Supply May Attract Some Demand—But Not Enough to Completely Offset the Supply Increase

Some skeptics argue that even if additional supply could help make housing more affordable in the short run, it won't in the long run because the additional supply will induce more demand, especially among buyers or renters wealthier than the existing residents in the neighborhood (Redmond, 2015). The claim is analogous to the argument that building more highways will not reduce congestion because the lower cost of travel will simply cause more people to drive or to take that particular route (Gorham, 2009). In this case, the argument is that by making the jurisdiction more affordable, adding housing supply will attract new demand—both from current residents who would otherwise leave, and from people living elsewhere who will now choose to move to the jurisdiction. Further, the

argument goes, lower rents and prices may also induce *latent* demand—people who are living with roommates or family members may choose to form their own households (Ellen & O’Flaherty, 2007) or people may choose to invest in pied-à-terres in a city. That additional demand will drive prices back up until supply can again respond, causing housing to be more affordable, at best, only cyclically, according to the argument, and increasing the density of the jurisdiction, with the attendant costs of congestion.

Although building additional highways does appear to induce more demand (Duranton & Turner, 2011), in the case of housing, additional demand is unlikely to completely offset the new supply. Such an offset requires demand curves to be perfectly elastic—or, in other words, it assumes that neighborhoods and jurisdictions are perfect substitutes and that there are no constraints on the ability and willingness of households to move. That is unrealistic.¹² Moving homes is not like driving a few extra miles (Lewyn, 2016), and costs associated with moving may be high.¹³ Any additional demand induced by new housing is limited by personal and economic constraints on the ability and willingness of households to move, restrictions on immigration, and uncertainty and other factors that might inhibit renters and buyers from renting or buying in the market in which housing supply increases. Indeed, mobility rates have fallen sharply over the past several decades, and although the reasons for the decline are being debated, the decline reveals significant constraints on the ability and willingness to move.¹⁴

Thus, in the long run, whereas some additional households may be drawn from outside (or from within the city) to buy or rent homes as supply increases, it is highly unlikely that prices will end up at the same level that they would have reached absent any new supply. Finally, as noted above, the empirical evidence shows that allowing more supply leads to lower housing prices; if adding supply induced sufficient additional demand to offset the increased supply, the studies would not find an association between supply and prices.

D. Adding Supply May Raise Neighborhood Rents in Some Cases, but Neither Theory nor Empirical Evidence Suggests That Will Be the Norm

Many renters in neighborhoods where market-rate housing is proposed express concern that the construction of new housing will actually make their affordability problems worse by raising rents or house prices, fueling gentrification, and potentially displacing existing residents (Atta-Mensah, 2017; Savitch-Lew, 2017).¹⁵ Hankinson (2017) theorizes that renters’ opposition to local additions to supply is driven by such worries; he argues that it is plausible that the construction of an attractive new building will increase prices locally (by improving the physical landscape, bringing new amenities to the neighborhood, and signaling that the neighborhood is improving), even as it reduces them citywide.

Testing this proposition empirically is quite challenging, given that developers will naturally be attracted to areas where prices and rents are rising. There is evidence that improvements to blighted housing can, in some circumstances, increase surrounding property values, even when the new or improved housing is subsidized, low-income housing (Diamond & McQuade, 2016; Schwartz, Ellen, Voicu, & Schill, 2006).¹⁶ The new housing studied, however, typically replaced vacant, abandoned buildings and littered vacant lots, in essence removing a disamenity.

Theoretically, we might also expect positive localized spillover effects for market-rate housing, even when it does not replace a source of blight, as it may bring new retail amenities and/or signal that an area has features that buyers or renters find attractive. But there are multiple forces potentially at work when new housing is constructed in a neighborhood facing increased demand. On the one hand, the construction could spur additional investment and demand, placing upward pressure on prices. On the other hand, the unpleasantness of construction may depress demand. Further, the newly constructed units in the neighborhood will absorb some of the new demand and dampen pressure on prices. (In the absence of new construction, the unsatisfied demand will go somewhere. Some may be diverted to other neighborhoods or jurisdictions, but some will likely remain, bidding up rents and prices for the existing stock, and making it profitable for owners to

upgrade the stock to accommodate new entrants rather than existing residents.) Thus, even in those cases where construction spillovers are positive, the net effect of new construction on price is unclear.

There is little empirical evidence about the net effect new market-rate housing has on the prices or rents of nearby homes, and what exists may not be causal. One recent study examines the effect of market-rate single-family homes newly constructed on infill sites, and finds that newly constructed single-family homes can have positive impacts on the sales price of other single-family homes nearby, but the effect varies with context (Zahirovich-Herbert & Gibler, 2014). A study of multifamily high-rise infill developments in Singapore found positive price effects on nearby houses (Ooi & Le, 2013), as did a study of single multistory apartment buildings constructed in Helsinki (Kurvinen & Vihola, 2016). These studies all consider property values and not rents, and none is able to prove a causal relationship given that market-rate developments aim to target neighborhoods where they expect property values to improve. Unfortunately, we found no study examining impacts on rents, although one study by the California Legislative Analyst Office concluded that additional market-rate construction is linked to *lower* displacement rates (Taylor, 2016). Examining low-income neighborhoods in the Bay Area between 2000 and 2013, these researchers found that the production of market-rate housing was associated with a *lower* probability that low-income residents in the neighborhood would experience displacement.¹⁷ Although a singular study, the findings suggest that for neighborhoods in high-demand cities, blocking market-rate construction may place greater pressures on the existing stock.¹⁸

In short, although it is clear that the construction of new homes will moderate price and rent increases citywide, neither theory nor empirical evidence provides clear guidance about when localized spillover effects might occur and when they might actually cause an increase in the prices and rents of immediately surrounding homes.

II. Broader Effects of Limiting Housing Supply

Of course, regulatory barriers that restrict supply also may provide benefits—by preventing congestion, protecting environmental resources, ensuring health and safety, delaying construction until necessary infrastructure improvements are made, and providing certainty to the market.¹⁹ Indeed, those benefits may increase demand: Been and her colleagues point out that land-use regulations can make an area more attractive to homebuyers because they offer greater certainty that an area's buildings (and potentially their residents) will not change much over time, and thereby increase prices (Been, Ellen, Gedal, Glaeser, & McCabe, 2016).²⁰

But often the benefits secured by regulatory restrictions are enjoyed by a relatively small number of existing property owners and/or existing residents, whereas costs are borne by a larger set of households who either rent or would like to live in the area. Further, the higher housing prices caused by constrained supply have consequences beyond affordability for households and communities. The effects are intertwined: supply constraints raise housing prices, and increases in housing prices in turn have a variety of other negative consequences, including interference with the functioning of regional and national economies. After all, interdependencies in housing markets are not limited to submarkets of a given city. As housing prices continue to increase in a city as a result of supply restrictions, some of those who are priced out will opt to live elsewhere, perhaps in surrounding suburbs, or perhaps in exurban areas or other markets altogether. If many choose to live farther away but in the same metropolitan area, commute times are likely to increase, and income and racial segregation in the region could potentially rise as lower income and minority households disproportionately move farther away from the central city. If many choose to live in other metropolitan areas altogether, this could undermine both local and national economic growth, and fuel inequality. We summarize the evidence on these various effects below.

A. Restricting Supply Imposes Environmental and Other Costs Related to Automobile Dependence

Restrictions on supply often are associated with lower density and less-compact development because they divert housing demand to lower density suburban or rural areas, leading to longer commutes and more driving, which results in increased air pollution and greenhouse gas emissions.²¹ Research shows that living in areas with higher population densities and other features of compact urban form decreases the harmful emissions associated with personal automobile travel by those households (for reviews of the vast literature, see Ewing & Cervero, 2010; Stevens, 2017; and on the debates those reviews generated, e.g., Ewing & Cervero, 2017; Handy, 2017). Similarly, a variety of research shows that higher density and more compact urban forms result in less energy use for heating and cooling buildings, and therefore less greenhouse gas emission (Estiri, 2015; Ewing & Rong, 2008; Resch, Bohne, Kvamsdal, & Lohne, 2016). Higher residential density is also associated with lower per-capita impacts on water quality from development (Jacob & Lopez, 2009), and with lower rates of destruction of critical habitat and open space (Ewing, Kostyack, Chen, Stein, & Ernst, 2005).

B. Restricting Supply May Exacerbate Income and Racial/Ethnic Segregation

It is difficult to test whether density restrictions heighten segregation, and the little empirical work that does exist is cross sectional and therefore cannot prove causation. But the research does suggest an association between land-use restrictions and segregation. For example, one recent study suggests that such restrictions are statistically associated with higher levels of segregation of the affluent, although *not* of low-income households (Lens & Monkkonen, 2016). As for racial segregation, more stringent restrictions on density are associated with greater segregation in large U.S. metro areas (Rothwell & Massey, 2009), and smaller minority populations in individual jurisdictions (Pendall, 2000; Quigley, Raphael, & Rosenthal, 2004). Finally, in Massachusetts, blocks zoned for multifamily housing have black population shares 3.4 percentage points higher and Hispanic population shares 5.8 percentage points higher than the blocks directly across the border from them that are zoned for single-family use (Resseger, 2013).

C. Restricting Supply Reduces Economic Productivity and Increases Inequality

Supply restrictions also likely hinder economic growth. If people who are priced out of a particular city choose to live in another metropolitan area altogether, that city's work force will shrink and productivity may decline. Supply restrictions that prevent people or businesses from locating in the neighborhood they prefer also can result in lower productivity and other deadweight losses (Rodriguez & Schleicher, 2012). There is strong empirical evidence that businesses thrive and workers are more productive when they are located in large, dense cities with lots of diverse economic activity (Glaeser, 2011; Kolko, 2010; Quigley, 1998). Constraints on housing supply in a city inhibit the growth and diversity that is essential to productivity. Raven Saks Molloy shows that increases in demand for workers in cities with more restrictive land-use regulations lead to less new housing construction, higher prices, and lower levels of long-run employment compared with areas with less-restrictive regulations (Saks, 2008).

Further, to the extent that land-use regulations restrict the supply of housing and raise prices, they make it more difficult for workers to move to the cities with more productive businesses. Interstate mobility rates have fallen significantly since the 1980s (Frey, 2009; Kaplan & Schulhofer-Wohl, 2017; Molloy, Smith, & Wozniak, 2011), even from areas with declining employment opportunities (Autor, Dorn, Hanson, & Song, 2014), and especially for those with the lowest incomes and skills (Notowidigdo, 2013). Areas that are seeing especially high productivity gains, like New York,

San Francisco, San Jose, and Boston, have not seen population growth to match those gains (Glaeser, 2011).

Chang-Tai Hsieh and Enrico Moretti (2017) show that this reduced mobility is harmful not only to individual workers or cities but also to national productivity. They estimate that if workers and capital had been able to move freely between 1964 and 2009 to respond to higher wages, national output would have been 10% higher in 2009. Further, they find that much of the drag on productivity stems from just a few metropolitan areas, because less-restrictive land-use practices in the South have allowed housing supply to keep up with the increased productivity of most of the southern cities. Although other researchers estimate that the effects of reduced mobility are lower than Hsieh and Moretti predict, the effects are nonetheless significant (Bunten, 2017; Glaeser & Gyourko, 2018; Parkhomenko, 2017).

Ganong and Shoag (2017) argue that the reduced mobility resulting from the constrained supply of housing is also exacerbating inequality and locking in economic differences across states. They point out that the relative gains in income and housing costs achieved by moving to high-cost regions vary with occupations. For workers in low-wage occupations, the increases in housing costs they would have to endure when moving to a state with restricted housing supply are larger than the gains in income they would enjoy. The calculus differs for workers in high-wage occupations, however, for whom income gains have continued to outpace housing cost increases. In other words, highly educated workers may still find it profitable to move to supply-restricted places, whereas less-educated workers do not, which is exacerbating inequality across cities and states. The differential mobility also may have very long-term effects on inequality, because many of the areas to which more highly educated workers may be more likely to move have higher levels of intergenerational mobility than the areas in which less-educated workers remain (Schleicher, 2017).

III. Moving Forward?

We are not suggesting that local officials should focus exclusively on relaxing regulations and facilitating the construction of market-rate housing. First, some level of regulation is needed, for the reasons described above. Second, building more market-rate housing alone will not solve the deep affordability problems faced by low-income households. The key point is that efforts to create and support housing affordable to low- and moderate-income households and efforts to make the supply of housing more elastic are complementary.

The arguments skeptics advance in opposing increases in the supply of housing are inconsistent with the evidence, and if skeptics are successful in defeating many proposals for additional housing (and density), their arguments are likely to result in significant harms. The arguments do, however, underscore the need for some governmental intervention in housing markets to require or incentivize a balanced approach to new development. Because the price effects of market-rate construction may be slow to materialize and are unlikely to be sufficient to address the needs of very low-income households, it is important for local governments to seek to ensure that new supply comes on line at a range of price points, so that growth is balanced among the various income levels in the community. Even in cities that have robust affordable housing programs, the supply usually is far less than the need, and may be fairly narrowly targeted to households making 50% to 60% of area median income because of the structure of the Low Income Housing Tax Credit program. Households with incomes below that level are often left out, as are those with incomes just above, many of whom also face affordability challenges in high-cost cities. To ensure that a range of income groups are seeing the benefits of the jurisdictions' growth through new housing, local governments may want to use subsidies, together with a variety of housing policy tools such as density bonuses or mandatory inclusionary zoning, to achieve visible additions to supply at a variety of price points.²²

Getting out of the way to allow additions to supply, and adopting and implementing tools to ensure that supply is provided for a range of incomes, is not an easy policy or political task.

Stakeholders may see moderate- or middle-income housing as coming at the expense of housing for low- and very low-income households. Communities are unlikely to trust that the housing for anyone other than the wealthiest buyers will actually be provided, so they may be reluctant to support additions to supply that are not specifically committed to particular income groups. Policymakers thus will need tools like inclusionary zoning that tie approvals for market-rate housing to commitments to ensure that housing affordable at a range of incomes also is provided.

A. Gaps in Research

The considerable body of research described above shows that additions to supply are critical to moderate price increases, allow workers to move to areas with growing job opportunities, and help subsidy dollars serve more low-income families. But there are still a number of research gaps, both on the relationship among specific features of housing markets, changes in supply, and affordability, and on the efficacy of various policy responses to limited supply. Most fundamentally, the lack of good data on rents makes it difficult to assess how changes in housing supply affect rents (as opposed to home prices). It is critical that we find better ways to track rents so that researchers can rigorously analyze the effects that adding supply has both on the local neighborhood and on the jurisdiction and region.

Second, there is a lack of research on how, and the extent to which, housing filters up or down in various submarkets. Skeptics rightly are wary because of the time the filtering process takes, and because high-end housing rarely filters down to become affordable to those with very low incomes. We need more facts about the extent to which housing filters down to lower price points, or up to higher income buyers or renters, and at what pace. Much more research also is needed about how to protect the supply of existing unsubsidized affordable housing from deterioration or upward filtering.

Third, concerns that new development will spur gentrification or local price and rent increases suggest that additional research on the local costs and benefits of new development (and of changes in neighborhoods more generally) is necessary.²³ Neighbors of proposed new developments fear displacement from rent increases, but there is little hard evidence of displacement (for summaries of the research, see Ding, Hwang, & Divringi, 2016; Florida, 2015). We need more research to learn what happens to rents, and how residents fare when their neighborhoods see new development, either through uncoordinated additions to supply or through comprehensive neighborhood redevelopment.

Fourth, many opponents of new supply argue that most of the new supply is luxury housing, and much of that is bought by people who do not reside in the city and whose competition drives up the cost of housing (Francis, 2016). Some recent research suggests that an increase in the share of out-of-town buyers is associated with an increase in house prices (Favilukis & van Nieuwerburgh, 2017; Sá, 2016). But other research finds no association (Cvijanovic & Spaenjers, 2017), and finds that at least some of those out-of-town buyers are not competing with the median homebuyer but are aiming at the most expensive properties, where supply is most likely to be sufficient to meet demand (Terrazas, 2017). Additional research is needed on how much of the new construction in different cities in the United States is built at different price points, how new construction at different price points affects the demolition or other loss of lower income housing, who is buying in each price range, how competition at the very highest end of the market affects the propensity of housing units to *filter up*, and whether any price effects associated with out-of-town buyers vary at different price points.

There are also research gaps on the policy front. More rigorous research is needed on the efficacy of the various ways states have sought to encourage additional supply—from state laws like Massachusetts 40B (which allows affordable housing developers to override local zoning rules in municipalities in which less than 10% of the housing stock meets specified affordability thresholds) to California's efforts to discourage sprawl and encourage additions to supply at higher

density. The assessment of fair housing requirements of the Affirmatively Furthering Fair Housing regulation²⁴ provide opportunities to identify strategies to link school, transit, park, and other improvements to new housing that includes affordable units, and research will be needed to measure whether those assessments help reduce barriers to increasing supply.

Additional thought is also required about creative solutions to balance local concerns about new development against the need for affordable housing. Hills and Schleicher (2011) have proposed a zoning budget, where downzonings have to be matched by upzonings; for example, fair share allocations of needed new supply may achieve similar purposes. Environmental impact review processes may need to be refined to better take into account the costs of not building, to more accurately consider the potential for localized costs of new development, and to more precisely assess the infrastructure and other needs the development may create both locally and city-wide. Local officials must commit to making the investments needed to ensure that local infrastructure is adequate to serve the additional population.

Finally, adding supply in surrounding jurisdictions would likely help to alleviate demand pressures in a locality, especially if accompanied by transportation improvements. Not all the supply needs to be added in the specific jurisdiction facing increased demand. The demand pressures faced in urban areas are part of larger housing- and labor-market pressures that may best be addressed at a larger geography. More research is needed, however, about how effective different forms of regional housing efforts have been in moderating price increases in the face of increasing demand, and in providing housing affordable to households of different incomes.

Answers to the rich set of research questions brought to the surface by supply skepticism could contribute directly and concretely to efforts to make housing more affordable and to make local housing policy more effective. Supply skepticism is a useful reminder that researchers and policymakers must provide more specific and concrete answers to concerns that communities have about the costs, benefits, and distributional effects of development in their neighborhoods and communities. Supply skeptics have also focused attention on an important end goal—economically diverse, vital cities. Our disagreement is simply that this goal will not be accomplished without additions to supply. But policymakers should be frank that adding supply is unlikely ever to meet the housing needs of the very lowest income households in our communities, and will have to be paired with subsidies or other incentives, or inclusionary zoning requirements.

Notes

1. Undoubtedly, renters, other community members, and advocates have reasons for opposing development that are not based in supply skepticism. People often worry that proposed developments will overcrowd their children's schools or their preferred form of transit, change their favorite retail or entertainment venues, or take away their sense of belonging and community (Freeman, 2006; Hutson, 2016). Those concerns may sometimes lie behind expressions of supply skepticism, but we focus in this essay only on arguments development opponents are making about how adding supply will affect housing affordability.
2. A related notion is that *if you can't build it, they won't come* (see, e.g., Newman, 2008).
3. Most of the studies are framed as assessing whether stricter land-use regulations are associated with higher prices, as Landis and Reina note (in this issue), but the studies could just as easily be framed as examining whether relaxing regulations is associated with lower prices. See Furman (2015) for a review.
4. A variant on this argument is the claim that luxury apartments are left empty as owners travel or live elsewhere and that land used for such properties should instead be used for affordable housing. (Booth & Adam, 2017, reporting on Britain Labour leader Jeremy Corbyn's statement that requisitioning "empty" homes might be necessary because "It can't be acceptable that in London we have luxury buildings and luxury flats left empty as land banking for the future while the homeless and the poor look for somewhere to live.")
5. The durability of housing means that at any point in time, newly constructed housing will comprise only a small portion of the housing market and most of the increase in demand in any submarket must initially be absorbed by existing housing. For example, in 2015, only 3.2% of owner-occupied housing had been constructed within the prior 5 years (American Housing Survey, 2015).

6. In some cases, the high-end housing may be created through the demolition of older, lower priced homes. If so, then the high-end housing will have the immediate effect of reducing supply and potentially increasing prices in the lower priced submarket. But see Bachrach, Monkkonen, and Lens (2017), who examine a sample of multifamily construction in Los Angeles between 2014 and 2016, and find “the vast majority of new multifamily units—both market-rate and income-restricted affordable apartments—have replaced single-family houses or been built on land not previously used for residential development.”
7. Of course, some older housing might command a premium if consumers value its unique features.
8. It may be that housing advocates belittle arguments about filtering not because (or not only because) they are skeptical that it works, or impatient for more immediate results, but because they object to the notion that poorer people should be housed in older units than wealthier households. That discussion is beyond the scope of this article, but opposing market-rate development in the hope that more new construction will be devoted to affordable housing ignores the cost differential between rehabbing existing units and building new, and fails to reckon with the role rehab can play in stabilizing and improving neighborhoods.
9. About 32% of the units that were affordable in 2012 were also affordable in 1985.
10. Again, there may be an interaction between demand spillovers and filtering: if supply at the high end of the market is limited, demand for that housing will spill over to other submarkets, making it less likely that housing in that submarket will filter down.
11. Specifically, Rosenthal finds that the real income of an occupant moving into a rental home in a 30-year old building in the United States is on average 50% of the income of an occupant moving into a newly built rental unit.
12. Kok et al. (2014) argue, for example, that the large positive association they find between land-use regulations and land prices in the San Francisco Bay Area is due in part to the fact that jurisdictions in the Bay Area are not close substitutes.
13. Demand from foreign investors is likely to be more elastic, but even here there are limits and some cities have raised revenues by imposing tax surcharge on nonresident buyers (Favilukis & van Nieuwerburgh, 2017).
14. Schleicher (2017) provides a recent review of the evidence about changing mobility rates, and explores the causes and consequences of those changes. Some blame the decline on land-use restrictions that make it hard to buy or rent in markets with job opportunities (Ganong & Shoag, 2017); others point to such factors as the aging of the population (Karahana & Li, 2016) and changes in the labor market (Molloy, Smith, & Wozniak, 2017).
15. Residents also express concerns about the costs that additional development might impose upon the neighborhood’s quality of life, by exacerbating traffic congestion, competition for parking, school overcrowding, and other strains on public services. That broader issue of local costs for broader societal benefits in the land-use context is addressed most recently by Monkkonen (2016); see also the review by Schively (2007).
16. See also the review by Aarland, Osland, and Gjestland (2017).
17. Displacement was defined as either (a) a decline in the absolute number of low-income households in census tracts that were otherwise growing, or (b) larger declines in low-income households than in households overall in the tract.
18. Badger (2016) usefully collects views of economists and advocates on the issues raised by the California Legislative Office study; see also Zuk and Chapple (2016).
19. Bunten (2017), for example, models zoning decisions to assess both the costs and the benefits of density restrictions, and finds that the optimal level of restrictions would increase aggregate output by 2.1%, with one third of those gains negated by the increased congestion felt by residents of productive locations, for a net gain of 1.4%. See also Turner, Haughwout, and van der Klaauw (2014), who find that the benefits of land-use regulations are less than the costs they impose.
20. Of course, by providing protection against change, land-use regulations benefit those who don’t want change, but impose costs on those who do want change.
21. Other factors, such as availability of large amounts of undeveloped land, also contribute to lower density. The key point here is that to the extent that regulations reduce the density of development, they impose additional costs.
22. Inclusionary zoning programs have to be designed and calibrated carefully to ensure that they increase the supply of affordable housing without increasing the costs of market-rate housing. See, for example, Mukhija, Das, Regus, and Tsay (2015); Schuetz, Meltzer, and Been (2011); see also the reviews by Sturtevant (2016) and Thadden and Wang (2017). Regulatory relief measures, such as design flexibility and fast-track permitting programs, may need to accompany inclusionary zoning mandates (see, e.g., Garde, 2016).
23. Kinahan’s study of the neighborhood effects of federal historic preservation tax credits (in this volume) is an example of the type of analysis needed to identify how particular kinds of investment, in specific types of markets, affect neighborhood change.
24. Early in 2018, the Trump Administration effectively rescinded the AFFH regulation, but that action is being litigated.

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The Elephant in the Zoning Code: Single Family Zoning in the Housing Supply Discussion

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COMMENTARY



The Elephant in the Zoning Code: Single Family Zoning in the Housing Supply Discussion

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Many regions of the United States face a persistent and increasingly dire housing affordability crisis. Despite the agreement among experts that more housing would ameliorate this crisis, we see opposition to building new housing from many different groups. “Supply Skepticism: Housing Supply and Affordability,” by Vicki Been, Ingrid Gould Ellen, and Katherine O’Regan, is a timely review of the state of knowledge on the relationship between housing supply and housing affordability, framed by common arguments made by *supply skeptics*. The article highlights some clear and important gaps in the research base on the one hand, and the deficiency in the communication of scholarly evidence to the public on the other. It is a call to action for housing and urban scholars to find better evidence on the key points of debate, and to communicate our expertise more effectively.

There is a special urgency in this arena of research because the status quo benefits some and hurts others. Rising housing costs disadvantage the people and neighborhoods that have long been disadvantaged in the United States. Renters lose and owners win in supply-constrained housing markets, and whereas homeowners might not oppose new housing explicitly to see their home values rise, as Fischel hypothesizes (2001), they benefit directly from housing scarcity.

The elephant in the room of our contemporary housing policy debates is single-family zoning. The mythical idea of *stable* neighborhoods composed of single-family houses (McCabe, 2017) separates them from the rest of the city where planners allow and promote change (Gabbe, 2017). Even the language of stability and *preserving neighborhood character* denies what is actually a dramatic change, an ever-increasing house price. The media tends to celebrate a *market recovery* when housing prices go up, and ignore that this means rents are up as well.

The prevalence and mythical sanctity of single-family zoning is an important part of all the “supply-skeptic” arguments that Been, Ellen and O’Regan present in this article. The first of these arguments is that “land is such a unique good that the rules of supply and demand don’t apply.” The central problem with this skeptical argument is that in U.S. cities, land use is tightly controlled through zoning. Even if density were not so strictly controlled, land is one of the core reasons housing is such a complicated economic good.

Land is completely inelastic at every point on Earth. Yet this does not mean, as *supply skeptics* often argue, that land supply in a city is completely inelastic. For most parcels of land, adjacent parcels are very close substitutes. The substitutability of parcels, and of neighborhoods in cities, is an understudied area, as it varies by location. Recent models of endogenous and exogenous neighborhood amenities (Guerreri et al., 2013; Lee & Lin, 2017) provide an important framing model in this regard. Some neighborhoods have exogenously positive attributes and others do not. Kok, Monkkonen, and Quigley (2014) argue that the overlap between regulatory boundaries and exogenous amenities such as coastal access is important. They distinguish the differential local effects of land-use controls between metropolitan areas such as Boston, Massachusetts, and San

Francisco, California, for this reason. More stringent land use regulations are not associated with higher housing prices among the jurisdictions of Boston, *ceteris paribus*, but they are in the San Francisco Bay Area.

The second *supply-skeptic* argument is that “new development is priced at the highest end of the market, so filtering either doesn’t happen or is too slow.” This argument is one that scholars should take seriously, because in many metropolitan areas the predominance of single-family zoning makes it true. In Los Angeles, for example, a majority of the housing units permitted in 2016 were in large buildings, with 50-plus units. Zoning in the City of Los Angeles prohibits multifamily construction on 75% of residential land, which leads to the construction of only the most expensive kind of multifamily—high-rise towers—in the 25% where multifamily construction is possible. Moreover, in our planning process, we have embedded myriad avenues by which locals can block land-use changes in their neighborhood (Monkkonen, 2016). Zoning changes very rarely (Gabbe, 2017).

Smaller multifamily housing, the *missing middle* housing stock, is much less expensive to build. In fact, there are a number of affordable new duplex developments in South Los Angeles, designed as essentially market-rate affordable housing (Bachrach, Monkkonen, & Lens, 2017). Some specifically target households with housing vouchers. These developments show that the great potential for making many cities affordable lies in replacing single-family homes with mid-rise multifamily homes. In a review of the Multiple Listing Service records in the month of August 2017, I found that single-family dwellings were 19% more expensive than multifamily dwellings on average.

Rosenthal (2014) suggests that in metropolitan regions with a significantly constrained housing supply, the expected rate at which older housing filters is very slow or even seems nonexistent. He did not test this hypothesis directly, however, and it deserves more attention from scholars. Work on the variation in rates of filtering would contribute to the public discussion of housing affordability and the role of zoning. More broadly, however, it is important to note that filtering is not a policy response to an affordability crisis. It is a description of what happens when zoning does not impede new housing construction and developers can build to meet household demand.

Single-family zoning also shapes a third supply-skeptical argument presented by Been, Ellen, and O’Regan, that “new housing leads to gentrification and displacement.” This is a hypothesis in need of testing, in a variety of metropolitan areas and with a better formal model. Regardless of findings, it is true that most cities’ zoning ensures a spatially unequal distribution of new development. Densification is blocked from *stable* neighborhoods with land-use controls established in most cases explicitly as tools of racial segregation (Rothstein, 2017). These tools continue to be effective methods of preventing low-income households and people of color from living in many neighborhoods. Moreover, as Tom Davidoff argues, low-density zoning laws subsidize a more expensive housing stock by restricting the use of land to single-family housing. Low-density zoning is, in his words, “socialism for the rich” (quoted in Meuse, 2016).

The final supply-skeptical argument that Been et al. presents is that “building more housing will not solve an affordability crisis because it will induce more demand for housing.” This idea raises an important point, as it reflects the complexity of housing demand within a system of cities. People move within and between metropolitan regions, and housing costs are one of the factors that influence this movement. The population of a given metropolitan area is not fixed, obviously, which is part of the problem with many cities’ approaches to this issue. In a standard urban model, housing costs primarily reflect metropolitan area incomes, which in turn reflect levels of economic productivity. Who moves out of and into a metropolitan area with a constrained housing supply, however, depends on individual incomes, not averages.

Therefore, one way to understand the responsiveness of a metropolitan region’s housing supply to increases in the number of productive jobs is in terms of what becomes of the gains from this high economic productivity. Are they channeled into more opportunities for people to live and work in the metropolitan area, or into higher profits for landowners that stem from restrictions on housing supply? It is especially important to consider this question from a social equity perspective, as a disproportionate share

of lower income households leave productive metropolitan areas when high-wage jobs multiply and those who work in them outbid less well-off families for scarce housing. Highly skilled workers are not moving to expensive housing markets because of the expensive housing, and the idea of induced demand in housing is not equivalent to roads and congestion in this regard.

Myriad laws and regulations create and structure housing markets. Planning regulations that limit new supply are only recently receiving the scholarly attention they deserve, as in many regions they are more important than any financing or subsidy policies. Public debates over local housing policy need input from more focused research. Our understanding of housing markets at the metropolitan scale is much firmer than at the neighborhood scale, yet the latter is the most visible to the public. In the conclusion to their article, Been, Ellen, and O'Regan articulate the important point that supply-oriented policies are a “necessary but insufficient” approach to the housing affordability crisis in the United States. Even without restrictions on supply such as low-density zoning, we need strong subsidies for housing and other protections for vulnerable groups in the housing market to ensure all families have a decent home. Yet in places where supply is highly constrained for aesthetic, exclusionary, and other reasons, it is clearly a core element of reform.

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Notes on Contributor

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