



CONSENT CALENDAR
September 13, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Rigel Robinson (Author), Councilmember Terry Taplin (Co-Sponsor), Mayor Jesse Arreguin (Co-Sponsor), and Councilmember Kate Harrison (Co-Sponsor)

Subject: Referral: Keep Innovation in Berkeley

RECOMMENDATION

Refer to the City Manager and the Planning Commission to consider and return to Council with Zoning Ordinance amendments, codified performance standards, and other actions to encourage the growth and retention of Research & Development (R&D) in Berkeley. Staff and the Commission should explore:

1. Naming R&D as an allowed land use in the commercial districts of Telegraph (C-T and C-C), West Berkeley (C-W), University (C-U), and Downtown Berkeley (C-DMU) with a Zoning Certificate, subject to performance standards.
 - a. Performance standards should regulate and mitigate potential impacts on quality of life, public health, and environmental health, such as noise, odors, fumes, vibrations, dust, light pollution, hours of operation, and disposal and storage protocols for flammable, combustible, chemical, and hazardous substances.
2. Updating the "District Purpose" sections of the MM and MU-LI districts to specifically embrace R&D. Consider doing the same for other districts where R&D is allowed, if deemed appropriate.
3. Amending R&D parking requirements in M-prefixed districts to align with Laboratory parking requirements and in C-prefixed districts, excluding C-T, to align with Manufacturing parking requirements.
4. Reviewing ~~and considering repeal of~~ Berkeley Municipal Code 23.206.080 to ensure that language regulating Biosafety Level (BSL) Classes 1-4 is clear and consistent with regulations in neighboring jurisdictions and other cities that support a broad range of R&D. Consider repealing the section or amending it to permit BSL-2 in all districts where research and development facilities or laboratories are permitted.
5. Returning to Council with additional recommendations, if any, that would serve to encourage R&D in Berkeley, as determined by staff or that present themselves through the Planning Commission process.

RECOMMENDED POLICY COMMITTEE TRACK

Land Use, Housing & Economic Development Policy Committee.

BACKGROUND

The City of Berkeley has over 400 “innovation sector” businesses in tech, biotech, R&D, and other STEM industries. The 2021 Berkeley Economic Dashboard (published in Q1 2022) reported robust growth opportunities in this sector, with 10 Berkeley-based companies receiving a total of nearly \$9 million in federal and state grants for R&D.¹ 35% of Berkeley’s innovation companies develop software, 31% develop biotechnology and healthcare technologies, and 13% develop clean technologies to support environmental sustainability and address climate change. Nearly 87% of these innovation companies are relatively early stage and take advantage of the city’s coworking spaces, accelerators, and incubators.

It is critical for the City to continue efforts to encourage the growth of R&D in Berkeley. In addition to providing jobs and fueling economic development locally, innovation companies make a global impact across sectors, including in the healthcare field and the fight against climate change. Berkeley benefits from the presence of the University of California, Berkeley and the Lawrence Berkeley National Laboratory (LBNL), whose affiliates go on to found startups supported by the Berkeley Startup Cluster and accelerators or incubators like Berkeley SkyDeck or Bakar Labs.² There is a clear demand for R&D space from companies who have grown out of UC Berkeley and are seeking to build their enterprise in Berkeley, close to the talent, facilities, and entrepreneur support programs on campus. If the City’s zoning regulations do not provide sufficient opportunities for emerging growth companies, they have no choice but to leave Berkeley and settle in nearby cities that accommodate them with open arms, such as Oakland, Emeryville, San Leandro, and Alameda.

On March 22, 2022, Council adopted the first reading of a Zoning Ordinance amendment that modified the land use definition of Research and Development (R&D) in Berkeley Municipal Code 23.502.020.R.8.³ This amendment came to Council as a referral response to a March 20, 2020 referral from Mayor Arreguín and Councilmember Wengraf.

The original definition read:

Research and Development. An establishment comprised of laboratory or other non-office space, which is engaged in one or more of the following activities: industrial, biological or scientific research; product design; development and testing; and limited manufacturing necessary for the production of prototypes.

The updated definition reads:

¹ <https://berkeleyca.gov/sites/default/files/2022-04/2022-03-22%20Item%2038%20Economic%20Dashboards%20Update.pdf>

² <https://berkeleystartupcluster.com/>

³ <https://berkeleyca.gov/sites/default/files/city-council-meetings/2022-03-22%20Agenda%20Packet%20-%20Council%20-%20WEB.pdf>

Research and Development: An establishment engaged in the following activities: 1) industrial, biological or scientific research; and/or 2) product or process design, development, prototyping, or testing. This may include labs, offices, warehousing, and light manufacturing functions as part of the overall Research and Development use.

The March 2020 referral observed that the R&D definition in the BMC did not adequately reflect present-day R&D business activities. For example, the definition prohibited R&D establishments from including office space and required the inclusion of a laboratory. The referral requested that the new definition reflect evolving business practices and provide flexibility for R&D establishments to occupy spaces that meet their operating needs. Modifying the R&D definition supported the City's Strategic Plan goal of fostering a dynamic, sustainable, and locally-based economy.

Through that process, additional issues have come to light that have the effect of inhibiting innovation in Berkeley, which this referral aims to address.

Recommendation #1: Naming R&D as an allowed land use in the commercial districts of Telegraph (C-T and C-C), West Berkeley (C-W), University (C-U), and Downtown Berkeley (C-DMU) with a Zoning Certificate, subject to performance standards.

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BMC 23.204.020.A Table 23.204-1⁴ and 23.206.020.A Table 23.206-1⁵ lay out allowed land uses for each commercial and manufacturing district, respectively. Currently, R&D is permitted in three districts across the city: C-W (with an Administrative Use Permit) and MM and MU-LI (with a Zoning Certificate if under 20,000 sq. ft. and an AUP if over 20,000 sq. ft.).

Notably, the commercial districts in Southside (C-T), the southern portion of Telegraph (C-C), and the Downtown (C-DMU) do not currently allow R&D. R&D spaces close to campus would be extremely valuable to students, alumni, and others affiliated with UC Berkeley and LBNL. By allowing R&D in these districts, the City would make it easier to keep the innovation and talent that flows from the university in Berkeley. Furthermore, permitting R&D in the University Avenue commercial corridor (C-U) would play an important role in connecting West Berkeley and UC Berkeley, the City's two primary hubs of innovation.

Startups have expressed that the City's permitting process remains a challenge, particularly if the Zoning Ordinance requires an AUP. This process can take months or even years, which is problematic for R&D companies whose runway for finding a suitable space to develop proof of concept is limited by the funding they have available from early-stage investors. The timelines associated with an AUP provide founders no

⁴ <https://berkeley.municipal.codes/BMC/23.204.020>

⁵ <https://berkeley.municipal.codes/BMC/23.206.020>

concrete assurance and can jeopardize operations during the most critical time for startups.

However, noise disruption and biohazard safety are of particular concern when permitting new uses in C-T, C-C, and C-DMU commercial districts due to their mixed-use residential buildings and proximity to residential districts. It is important that staff and the Planning Commission consider strategies for mitigating any impacts of R&D ~~on Telegraph and Downtown Berkeley in C-prefixed districts~~, including the use of performance standards. Performance standards, which lay out metrics and regulations that the applicant must agree to before being issued a Zoning Certificate, are an important tool to ensure conformance to the neighborhood without imposing lengthy permit approval timelines.

One example that the City of Berkeley can look towards is the City of Fremont. Fremont utilizes performance standards in their industrial districts, which house R&D activities, to ensure that “adjoining properties, persons and the community as well as the region are provided protection against adverse conditions which may be created by the various uses operating within the industrial zoning districts.” The performance standards regulate noise, vibration, glare or heat, fire hazards, liquid or solid wastes, fissionable or radioactive material, and aesthetics.⁶ See Attachment 1.

The City of San Diego serves as a case study of how R&D can co-exist with commercial and residential uses. In 2019, the San Diego City Council approved the creation of two new mixed-use zones, RMX (Residential Mixed-Use) and EMX (Employment Mixed-Use).⁷ The stated purpose of the zones was to “provide housing and jobs near commercial centers and corridors to reduce dependency on the automobile, promote access to transit and multi-modal transportation systems, and to provide for a walkable, pedestrian-oriented setting, including infill of existing development.” In both RMX and EMX zones, R&D is permitted by-right alongside multi-family residential development, retail, and most commercial services. San Diego also permits R&D in several of its commercial zones.⁸

Recommendation #2: *Updating the “District Purpose” sections of the MM and MU-LI districts to specifically embrace R&D. Consider doing the same for other districts where R&D is allowed, if deemed appropriate.*

The “District Purpose” sections of the Zoning Ordinance determine the purpose of each zoning district, detailing what uses are allowed, welcomed, and explicitly stated to further the City’s goals. R&D applicants need to feel confident that they will have a place in the district if they choose to locate there. In MM and MU-LI, where R&D is currently

⁶ <https://www.codepublishing.com/CA/Fremont/#!/html/Fremont18/Fremont1850.html> (18.50.040 Performance Standards)

⁷ <https://docs.sandiego.gov/municode/MuniCodeChapter13/Ch13Art01Division07.pdf>

⁸ <https://docs.sandiego.gov/municode/MuniCodeChapter13/Ch13Art01Division05.pdf>

Field Code Changed

permitted, the Purpose sections do not mention R&D despite calling out the importance and belonging of similar industries, including manufacturing, industrial use, and laboratories.

Staff and the Commission should consider amending BMC 23.206.070.A and 23.206.080.A with the following language:

23.206.070 MM Mixed Manufacturing District.

- A. District Purpose. The purpose of the Mixed Manufacturing (MM) district is to:
1. Implement the West Berkeley Plan MM designation;
 2. Encourage development of a general manufacturing district for the full range of manufacturers, including larger scale materials processing manufacturers sometimes known as heavy manufacturers;
 3. Encourage development of a manufacturing district targeted to manufacturing and industrial uses including research and development, so that manufacturers and industrial businesses will not be interfered with by incompatible uses;
 4. Encourage the creation and continuation of well paid (often unionized) jobs for men and women without advanced degrees;
 5. Provide an appropriate location for the development of compatible industries which can provide high quality employment for people at all educational levels, and add significantly to the tax base, such as the biotechnology industry and other research and development uses;
 6. Allow reuse of upper story industrial space as offices to facilitate use of upper story space;
 7. Maintain and improve the quality of the West Berkeley environment, while allowing the lawful and reasonable operation of the full range of manufacturers; and
 8. Support the development of industrial businesses which contribute to the maintenance and improvement of the environment.

23.206.080 MU-LI Mixed Use-Light Industrial District.

- A. District Purpose. The purpose of the Mixed Use-Light Industrial (MU-LI) district is to:
1. Implement the West Berkeley Plan Light Manufacturing District designation;
 2. Encourage development of a mixed use-light industrial area for a range of compatible uses;
 3. Encourage development of an area where light manufacturers can operate free from the economic, physical and social constraints caused by incompatible uses;
 4. Encourage the creation and continuation of well-paid jobs which do not require advanced degrees;

5. Provide for the continued availability of manufacturing and industrial buildings for manufacturing uses, especially of larger spaces needed by medium sized and larger light manufacturers;
6. Provide opportunities for office development when it will not unduly interfere with light manufacturing uses and/or the light manufacturing building stock;
7. Provide the opportunity for ~~laboratory development~~ the development of research and development facilities in appropriate locations;
8. Support the development of businesses which contribute to the maintenance and improvement of the environment;
9. Allow on-site ancillary retail as a tool to maintain and enhance the economic viability of manufacturers in the district; and
10. Maintain and improve the quality of the West Berkeley environment, while allowing the lawful and reasonable operation of light industrial uses.

Recommendation #3: Amending R&D parking requirements in M-prefixed districts to align with Laboratory parking requirements and in C-prefixed districts, excluding C-T, to align with Manufacturing parking requirements.

BMC 23.322.030 details the minimum off-street parking spaces required for each use. Currently, in M-prefixed districts, R&D is not explicitly named in Table 23.322-4, meaning that it is parked under “All non-residential uses except uses listed below” at 2 spaces per 1,000 sq. ft. In contrast, laboratories are parked as 1 space per 650 sq. ft., despite R&D spaces typically accommodating a similar number of people per square foot as laboratories. This disadvantages R&D by requiring them to provide more parking than their laboratory counterparts, which is expensive and creates incentives for employees to drive to work that run counter to the City’s Climate Action Plan goals. For the purposes of consistency, R&D parking requirements should be amended to align with Laboratory parking requirements.

In C-T, off-street parking is not required, so no amendments are needed. In C-prefixed districts excluding C-T, R&D is also not listed in Table 23.322-2. It may be unclear to applicants whether R&D falls under Manufacturing (which requires 1.5 spaces per 1,000 sq. ft. in C-DMU, 1 per 1,000 sq. ft. in C-W, and 2 per 1,000 sq. ft. in all other C-prefixed districts), or under “All non-residential uses except uses listed below,” (which requires 1.5 spaces per 1,000 sq. ft. in C-DMU and 2 per 1,000 in all other C-prefixed districts). This can create confusion for R&D companies looking to locate in C-W. Adding an R&D section here to align parking requirements with Manufacturing would improve clarity and consistency.

~~Staff and the Commission should consider~~In addition to considering the following additions-changes to BMC 23.322.030 Table 23.322-2 and Table 23.322-4, staff and the Commission may take up the R&D parking discussion in concert with other Council referrals that address off-street parking, such as Councilmember Taplin’s “Parking

Minima for Mixed-Use Projects and Manufacturing Districts” item referred on June 28, 2022.

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Table 23.322-2. REQUIRED OFF-STREET PARKING REQUIREMENTS IN COMMERCIAL DISTRICTS (EXCLUDING C-T)

Land Use	Required Parking Spaces
Residential Uses	
Accessory Dwelling Unit	See Chapter <u>23.306</u>
Dwellings, including Group Living Accommodations	If located on a roadway less than 26 feet in width in the Hillside Overlay: 1 per unit All Other Locations: None required
Hotel, Residential	None required
Mixed-Use Residential (residential use only)	None required
Senior Congregate Housing	None required
Non-Residential Uses	
All non-residential uses except uses listed below	C-DMU District: 1.5 per 1,000 sq. ft. All Other Commercial Districts: 2 per 1,000 sq. ft.
Hospital	1 per each 4 beds plus 1 per each 3 employees
Library	C-DMU District: 1.5 per 1,000 sq. ft. All Other Commercial Districts: 1 per 500 sq. ft. of publicly accessible floor area
Nursing Home	1 per 3 employees
Medical Practitioners	C-DMU District: 1.5 per 1,000 sq. ft. All Other Commercial Districts: 1 per 300 sq. ft.
Hotels, Tourist	C-DMU District: 1 per 3 guest/sleeping rooms or suites C-C, C-U, C-W Districts: 1 per 3 guest/sleeping rooms or suites plus 1 per 3 employees All Other Commercial Districts: 2 per 1,000 sq. ft.
Motels, Tourist	C-DMU District: 1 per 3 guest/sleeping rooms or suites C-C, C-U, C-W Districts: 1 per guest/sleeping room plus 1 for owner or manager [1]

	All Other Commercial Districts: 2 per 1,000 sq. ft.
Large Vehicle Sales and Rental	C-DMU District: 1.5 per 1,000 sq. ft. C-SA District: 1 per 1,000 sq. ft. All Other Commercial Districts: 2 per 1,000 sq. ft.
Small Vehicle Sales and Service	C-DMU District: 1.5 per 1,000 sq. ft. C-SA District: 1 per 1,000 sq. ft. All Other Commercial Districts: 2 per 1,000 sq. ft.
Manufacturing	C-DMU District: 1.5 per 1,000 sq. ft. C-W District: 1 per 1,000 sq. ft [1] All Other Commercial Districts: 2 per 1,000 sq. ft.
<u>Research and Development</u>	<u>C-DMU District: 1.5 per 1,000 sq. ft.</u> <u>C-W District: 1 per 1,000 sq. ft [1]</u> <u>All Other Commercial Districts: 2 per 1,000 sq. ft.</u>
Wholesale Trade	C-DMU District: 1.5 per 1,000 sq. ft. C-W District: 1 per 1,000 sq. ft. All Other Commercial Districts: 2 per 1,000 sq. ft.
Live/Work	If workers/clients are permitted in work area, 1 per first 1,000 sq. ft. of work area and 1 per each additional 750 sq. ft. of work area

Notes:

[1] Spaces must be on the same lot as building it serves.

Table 23.322-4. REQUIRED OFF-STREET PARKING IN MANUFACTURING DISTRICTS

Land Use	Required Parking Spaces
Residential Uses	
Accessory Dwelling Unit	See Chapter <u>23.306</u>
Dwellings	None required
Group Living Accommodation	None required
Non-Residential Uses	
All non-residential uses except uses listed below	2 per 1,000 sq. ft.

Art/Craft Studio	1 per 1,000 sq. ft.
Community Care Facility	1 per 2 non-resident employees
Food Service Establishment	1 per 300 sq. ft.
Library	1 per 500 sq. ft. of publicly accessible floor area
Laboratories	1 per 650 sq. ft.
<u>Research and Development</u>	<u>1 per 650 sq. ft.</u>
Nursing Home	1 per 5 residents, plus 1 per 3 employees
Medical Practitioners	One per 300 sq. ft.
Large Vehicle Sales and Rental	MU-LI District: 1.5 per 1,000 sq. ft. All Other Districts: 1 per 1,000 sq. ft. of display floor area plus 1 per 500 sq. ft. of other floor area; 2 per service bay
Manufacturing	MU-R District: 1.5 per 1,000 sq. ft. All Other Districts: 1 per 1,000 sq. ft. for spaces less than 10,000 sq. ft.; 1 per 1,500 sq. ft. for spaces 10,000 sq. ft. or more
Storage, warehousing, and wholesale trade	1 per 1,000 sq. ft. for spaces of less than 10,000 sq. ft.; 1 per 1,500 sq. ft. for spaces 10,000 sq. ft. or more
Live/Work	MU-LI District: 1 per 1,000 sq. ft. of work area where workers/clients are permitted MU-R District: if workers/clients are permitted in work area, 1 per first 1,000 sq. ft. of work area and 1 per each additional 750 sq. ft. of work area

Notes:

[1] For multiple dwellings where the occupancy will be exclusively for persons over the age of 62, the number of required off-street parking spaces may be reduced to 25% of what would otherwise be required for multiple-family dwelling use, subject to obtaining a Use Permit.

Recommendation #4: Reviewing and considering repeal of Berkeley Municipal Code 23.206.080 to ensure that language related to Biosafety Level (BSL) Classes 1-4 is clear and consistent with requirements in neighboring jurisdictions and other cities that support a broad range of R&D. Consider repealing the section or amending it to permit BSL-2 in all districts where research and development facilities or laboratories are permitted.

BSL lab levels, ranging from BSL-1 to BSL-4, are set by the Centers for Disease Control and Prevention to protect laboratory personnel and the surrounding community. The primary risks that determine levels of containment are infectivity, severity of disease, transmissibility, and the nature of the work conducted.⁹

Chart of Biosafety Levels¹⁰

Biosafety Level	BSL-1	BSL-2	BSL-3	BSL-4
Description	<ul style="list-style-type: none"> · No Containment · Defined organisms · Unlikely to cause disease 	<ul style="list-style-type: none"> · Containment · Moderate Risk · Disease of varying severity 	<ul style="list-style-type: none"> · High Containment · Aerosol Transmission · Serious/Potentially lethal disease 	<ul style="list-style-type: none"> · Max Containment · "Exotic," High-Risk Agents · Life-threatening disease
Sample Organisms	E.Coli	Influenza, HIV, Lyme Disease	Tuberculosis	Ebola Virus
Pathogen Type	Agents that present minimal potential hazard to personnel & the environment.	Agents associated with human disease & pose moderate hazards to personnel & the environment.	Indigenous or exotic agents, agents that present a potential for aerosol transmission, & agents causing serious or potentially lethal disease.	Dangerous & exotic agents that pose a high risk of aerosol-transmitted laboratory infections & life-threatening disease.
Autoclave Requirements	None	None	Pass-thru autoclave with Bioseal required in laboratory room.	Pass-thru autoclave with Bioseal required in laboratory room.

Another way of classifying biological agents and organisms is using Risk Groups 1-4. While these two classification methods often align (e.g. BSL-2 equals Risk Group 2), they do not always. Biosafety Levels prescribe the work practices, engineering controls, personal protective equipment, and facility requirements required for working with biological agents. The Risk Group classification is only one factor to consider when determining the appropriate Biosafety Level for a particular agent. Other factors to consider include the mode of transmission, pathogenicity, manipulations that will be conducted, volume, experience of staff, and more.¹¹

⁹ <https://www.cdc.gov/training/quicklearns/biosafety/>

¹⁰ <https://consteril.com/biosafety-levels-difference/>

¹¹ <https://www.safetypartnersinc.com/are-biosafety-levels-and-risk-groups-the-same/#:~:text=Biosafety%20levels%20prescribe%20the%20work,level%20for%20a%20particular%20agent.>

4 RISK CLASSIFICATIONS OF INFECTIOUS MATERIAL			
Risk Group	Individual	Community	Examples
1 (lowest) Basic Laboratory, clean open bench, no BSC needed (unlikely to cause disease in healthy workers/animals/plants)	Low	Low	-non-infectious bacteria -E. coli -Lactobacillus spp.
2 Biological safety cabinet needed Pathogens spread via ingestion, inoculation and mucous membrane routes	Moderate	Low	-Influenza virus -Herpes simplex -Hepatitis (A, B, C, D, E) -Tetanus
3 Pathogen transmitted by aerosols HEPA filtration required, respiratory protection	High	Low	-Hepatitis (some C's) -West Nile -Anthrax -TB
4 (highest) serious human disease that may not be treatable, easily transmitted self-contained lab	High	High	-Ebola virus -Herpes B

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BMC 23.206.080.B.5¹² reads:

Commercial Physical or Biological Laboratories. Commercial physical or biological laboratories using Class 3 organisms are not permitted in the MU-LI district. Use of Class 2 organisms are permitted only in locations at least 500 feet from a Residential District or a MU-R district.

This section is the only place in the BMC where organism classes, presumably referring to BSL, are mentioned other than in the defined terms. The BMC is silent on BSL regulations in districts other than MU-LI, or for non-laboratory uses such as research and development.

A preliminary review finds that the City of Berkeley is more restrictive than other Bay Area cities in our regulation of Biosafety Levels. For example, the Cities of Emeryville, San Jose, Mountain View, Alameda, San Leandro, South San Francisco, and San Mateo do not reference BSLs or Risk Groups in their zoning ordinances. The Cities of Fremont, Oakland, Palo Alto, and San Francisco permit BSL-1, BSL-2, and BSL-3 (or the Risk Group equivalents) in varying degrees. See Attachment 2.

¹² <https://berkeley.municipal.codes/BMC/23.206.080>

Moreover, laboratories that work with Risk Group 1-3 agents are already allowed on the UC Berkeley campus. Most campus experiments use agents classified as Risk Group 1 or 2, although work with Risk Group 3 is permitted with a biological use authorization (BUA) application approved by UC Berkeley's Committee for Laboratory and Environmental Biosafety.¹³

Staff and the Commission should conduct ~~a review of~~ further research into nearby jurisdictions, including Oakland, San Francisco, South San Francisco, Emeryville, Alameda, San Leandro, and Fremont, as well as other cities across the country that support a broad range of R&D, such as Cambridge, MA. This research should provide insight into best practices for BSL zoning regulations that keep the surrounding neighborhood safe while allowing biological ~~labs~~ research facilities where they make sense, with federally-required protocols and locally-required performance standards or other conditions in place.

Staff and the Commission should return to Council with amendments to this BMC section and other relevant sections that provide clarity for potential applicants, ensure that Biosafety Levels are clearly stated and defined in accordance with the most recent CDC guidelines, and bring the City of Berkeley in alignment with other jurisdictions.

Recommendation #5: Returning to Council with additional recommendations, if any, that would serve to encourage R&D in Berkeley, as determined by staff or that present themselves through the Planning Commission process.

The City Manager and/or Planning Commission may choose to return to Council with additional recommendations that would serve to encourage R&D in Berkeley, in addition to the ones suggested in this item.

FINANCIAL IMPLICATIONS

Staff time.

ENVIRONMENTAL SUSTAINABILITY

There are no identifiable negative environmental impacts associated with this action.

CONTACT PERSON

Councilmember Rigel Robinson, (510) 981-7170
Angie Chen, Legislative Assistant

Attachments:

- 1: City of Fremont performance standards
- 2: BSL regulations in neighboring jurisdictions

¹³ <https://ehs.berkeley.edu/sites/default/files/biosafetymanual.pdf>

18.50.040 Performance standards.

(a) Performance standards are established to ensure that adjoining properties, persons and the community as well as the region are provided protection against adverse conditions which may be created by the various uses operating within the industrial zoning districts. All uses within the I-S, I-T, and I-G districts, whether accessory, permitted, or whether requiring zoning administrator or conditional use permit approval, shall comply with the following performance standards:

(1) Noise. At all property lines, as measured consistent with subsection (c) of this section, the maximum noise level generated by any user shall not exceed an Ldn level of 70 dB(A) when adjacent users are industrial, commercial, business, professional or office. When adjacent to hotels, motels and other lodging, or outdoor sports and recreation, neighborhood parks and playgrounds, the noise level at all property lines shall be limited to an Ldn level of 65 dB(A). When users are adjacent or contiguous to residential, institutional uses, or similar sensitive uses, the maximum noise level shall not exceed an hourly Leq level of 50 dB(A) during daytime hours (7:00 a.m. – 10:00 p.m.), an hourly Leq level of 45 dB(A) during nighttime hours (10:00 p.m. – 7:00 a.m.), an hourly Lmax level of 70 dB(A) during daytime hours, and an hourly Lmax level of 65 dB(A) during nighttime hours. Excluded from these standards are occasional sounds generated by the movement of railroad equipment, temporary construction activities or warning devices. Each of the noise level standards specified in this section shall be reduced by five db(A) for single-tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises when the site is adjacent to residential areas.

(2) Vibration. No vibration shall be permitted which is discernible without instruments at any property line, as measured consistent with subsection (c) of this section.

(3) Glare or Heat. No heat or direct or sky-reflected glare, whether from floodlights or high-temperature processes such as combustion or welding or otherwise, shall emanate from any use so as to be visible or discernible at the point of measurement as specified under subsection (c) of this section. Legal signs are exempted from this provision.

(4) Fire Hazards. The storage, use or production of products which, either in the raw or finished state, constitutes an inflammable or explosive material shall be subject to the fire codes and approval of the city of Fremont's fire department. The personnel of the department shall be given the opportunity to visit and observe operations on the site and any directives issued by said personnel shall be

¹ <https://www.codepublishing.com/CA/Fremont/#!/html/Fremont18/Fremont1850.html>

satisfied. Failure to comply with fire department directives shall constitute a violation of this chapter in addition to any violation of other statutes. Burning of waste materials in open fires or unapproved incinerators is prohibited.

(5) Liquid or Solid Wastes. It is prohibited to discharge at any point into a private sewage disposal system or stream or into or on the ground any material of such nature or temperature as to contaminate any water supply, or otherwise cause the emission of dangerous or offensive elements, except in accordance with regulations, licenses or approvals of the various local and state agencies having jurisdiction over such activities.

(6) Fissionable or Radioactive Material. No activity shall be permitted which utilizes, produces, removes or reprocesses fissionable or radioactive material unless a license, permit or other authority is secured from the state or federal agency exercising control. In all matters relative to such activities, it shall be the responsibility of the user to ascertain and identify the responsible agencies and notify the community development department as to the agencies involved and the status of the required permits.

(7) Aesthetics. No operation or activity shall be permitted which will cause to be easily visible to public view or from adjoining properties waste materials, parts or material storage or an assembly process. Machinery or equipment which is necessary for the operation and which, because of size and function, cannot be installed for practical purposes within an enclosed building is exempt from this section.

(b) Enforcement of this chapter may only pertain to requirements not regulated by other agencies and shall be the responsibility of the building official. The building official is empowered to take whatever steps are listed below to abate any condition which is in conflict with the performance standards as specified under this section. Such steps may include citations, abatement action, or injunctions. Arrests, or securing of warrants for arrest, of individuals responsible for suspected violations may only be used when other available steps will not allow the building official to stop a violation which poses a serious threat to the health and safety of one or more persons.

(c) All measurements to determine the existence of any violation of the performance standards shall be made by the enforcing agency at the property line nearest the source of the suspected violation, except measurements of fire hazards, solid industrial wastes, or liquid wastes. (Ord. 17-2016 § 18, 9-13-16.)

Attachment 2: BSL regulations in neighboring jurisdictions

Cities of Emeryville, San Jose, Mountain View, Alameda, San Leandro, South San Francisco, and San Mateo - No mention of BSL in Zoning Code

City of Fremont²

18.25.330 Biosafety level (BSL).

In accordance with the most current version of the Biosafety in Microbiological and Biomedical Laboratories published by the U.S. Department of Health and Human Services Centers for Disease Control and Prevention and National Institutes of Health (CDC/NIH), “biosafety level” or “BSL” shall mean the safe handling of biological materials, particularly infectious agents which are classified on the basis of degree of risk to humans working with them and includes definition of biosafety levels for handling such agents. A specific combination of work practices, safety equipment, and facilities are designed to minimize the exposure of workers and the environment to infectious agents. There are four biosafety levels (BSLs). BSL 1 applies to laboratories in which work is done with defined and characterized strains of viable microorganisms not known to consistently cause disease in healthy adult humans. BSL 2 applies to laboratories in which work is done with the broad spectrum of indigenous moderate-risk agents that are present in the community and associated with human disease of varying severity. BSL 3 applies to clinical, diagnostic, teaching, research, or production facilities in which work is done with indigenous or exotic agents with the potential for respiratory transmission, and which may cause serious and potentially lethal infection. BSL 4 is used for the diagnosis of exotic agents that pose a high risk of life-threatening disease, which may be transmitted by the aerosol route and for which there is no vaccine or therapy. (Ord. 8-2008 § 3, 4-22-08. 1990 Code § 8-2112.5.)

18.50.010 Purpose and establishment of industrial districts.

The industrial districts are intended to accommodate a variety of high technology, life science, manufacturing, and logistics businesses. They house businesses that provide products and services to other businesses and local residents. The industrial districts are intended to provide locations for uses that generate employment, and may involve hazardous materials, noisy operations, heavy traffic, and odors that may present dangers or nuisances to nonindustrial uses, such as schools and residences. Industrial operations are vital to the local, regional, state and global economy, providing a wide range of employment for the region and revenues that support services for the community. Three industrial districts are established to provide for the diversity of industrial uses within the city including service industrial (I-S), tech industrial (I-T), and general industrial (I-G). The character of each of the three industrial districts is distinguished by the uses and development allowed, providing optimum locations with respect to access and service areas, achieving compatibility of

² <https://www.codepublishing.com/CA/Fremont/#/html/Fremont18/Fremont1850.html>

uses within each district, and minimizing adverse impacts to uses in adjacent districts. The specific purpose of each industrial district is described as follows:

(a) I-S Service Industrial. The purpose of the I-S district is to provide locations for industrial uses which are generally oriented toward serving local businesses and residents and can operate in proximity to commercial and residential uses with a minimum of adverse effects. The purpose also includes prohibiting certain Group A, B, and C hazardous materials uses, and manufacturing and/or the storage of larger sizes/quantities of hazardous materials which may have off-site impacts. The I-S district may also include those commercial and service uses which are considered to be more appropriate in an industrial area.

(b) I-T Tech Industrial. The purpose of the I-T district is to provide areas devoted to research and development activities, “clean and green” tech, and semi-conductor, computer hardware, software and related technological, administrative, sales, and engineering facilities. Within this district certain Group A, B, and C hazardous materials uses, and manufacturing and/or the storage of particularly large sizes/quantities of hazardous materials (Section 18.190.220, High intensity hazardous materials users), are regulated to minimize potential for off-site impacts. Within this area, only certain nonsensitive assembly, business service, and nonsensitive recreational uses may be permitted due to uses that handle hazardous materials. The I-T district is characterized by superior architectural and landscaping treatment and site planning.

(c) I-G General Industrial. The purpose of the I-G district is to provide areas for general industrial, manufacturing, wholesale and other related service uses needed by the city and the region. Impacts associated with noise, odor, heavy traffic, and other hazards associated with certain hazardous materials may occur within the I-G district. Sensitive land uses are not permitted in the I-G district. (Ord. 17-2016 § 18, 9-13-16.)

18.50.090 Uses in industrial districts.

(a) Use Table. Table 18.50.090 sets forth those uses which are permitted, permitted with approval of a zoning administrator permit, permitted with approval of a conditional use permit, and not allowed in each of the three industrial districts, and the type of approval each use requires. The following terms are used in Table 18.50.090:

(1) Permitted (“P”) uses are allowed subject to conformance to standards or conditions of this title.

(2) Conditional (“C”) uses may be permitted with a conditional use permit, provided all other requirements of this title are met.

(3) Zoning administrator (“Z”) uses may be permitted with a zoning administrator permit, provided all other requirements of this title are met.

(4) Accessory (“A”) uses are allowed when subordinate to or part of a principal use on the same lot and serve as a use incidental to such principal use.

(5) The symbol “--” indicates a use is prohibited within the zoning district.

(6) “KSF” means 1,000 square feet.

Use	NAICS (2012)	I-S	I-T	I-G	Specific Use Regulations/ Notes
INDUSTRIAL - RESEARCH AND DEVELOPMENT					
Testing laboratories ² , including physical, chemical, and analytical	541380	--	p ⁵	p ⁵	
Medical and diagnostic laboratories ²	62151	z ⁵	p ⁵	p ⁵	
Scientific research and development services ² , including physical, engineering, and life sciences and systems (e.g., electronics, biotechnology, nanotechnology, chemistry, physics) with biosafety level ¹ 1 or 2 (BSL 1 or 2)	541711 , 541712 and 541720	p ⁵	p ⁵	p ⁵	
Scientific research and development services ² , including physical, engineering, and life sciences and systems (e.g., electronics, biotechnology, nanotechnology, chemistry, physics) with biosafety level ¹ 3 (BSL 3)	541711 , 541712 and 541720	--	z ⁵	z ⁵	
Scientific research and development services ² , including physical, engineering, and life sciences and systems with biosafety level ¹ 4 (BSL 4)	541711 , 541712 and 541720	--	--	--	
Use	NAICS (2012)	I-S	I-T	I-G	Specific Use Regulations/ Notes
Biological products with biosafety level ¹ 1 or 2 (BSL 1 or BSL 2)		--	p ⁵	p ⁵	
Biological products with biosafety level ¹ 3 (BSL 3)		--	z ⁵	z ⁵	
Biological products with biosafety level ¹ 4 (BSL 4)		--	--	--	

WSI District Planning Area >	2012 NAICS ²	WSI-1	WSI-2	WSI-3	WSI-4	WSI-4A	WSI-5	WSI-6	WSI-7	WSI-8	WSI-9	WSI-10	Specific Use Regulations/Notes
Use v													
Research, development, and testing services including physical, engineering, and life sciences and systems including: electronics, sociology, biotechnology, nanotechnology, chemistry, physics with biosafety level ¹ 1 or 2 (BSL 1 or 2)	541711 , 541712 , 541720	p ^{4,5}	--	--	P-SQD _{4,5}	--	p ^{4,5}	p ^{4,5}	p ^{4,5}	p ^{4,5}	--	p ^{4,5}	
Research, development, and testing services, including physical, engineering, and life sciences and systems including: electronics, sociology, biotechnology, nanotechnology, chemistry, physics with biosafety level ¹ 3 (BSL 3)	541711 , 541712 , 541720	--	--	--	--	--	--	Z ^{4,5}	--	--	--	--	
Research, development, and testing services, including physical, engineering, and life sciences and systems including electronics, sociology, biotechnology, nanotechnology, chemistry, physics with biosafety level ¹ 4 (BSL 4)	(541711), (541712), (541720)	--	--	--	--	--	--	--	--	--	--	--	

City of Oakland³

17.10.580 - Heavy/High Impact Manufacturing Industrial Activities.

Heavy/High Impact Manufacturing Industrial Activities include high impact or hazardous manufacturing processes. This classification also includes certain activities accessory to the above, as specified in [Section 17.10.040](#). Examples of activities in this classification include, but are not limited to, the following:

- A. Any manufacturing use with large-scale facilities for outdoor oil and gas storage;
- B. Any biotechnology research, development or production activities involving materials defined by the National Institute of Health as Risk Group 4 or Restricted Agents (commonly known as “biosafety level 4”);

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https://library.municode.com/ca/oakland/codes/planning_code?nodeId=TIT17PL_CH17.10USCL_PT4INA_CTY_17.10.580HEHIIMAINAC

- C. Battery manufacturing and storage;
- D. Lime and gypsum products manufacturing;
- E. Non-ferrous metals production, processing, smelting and refining;
- F. Painting, coating and adhesive manufacturing;
- G. Synthetic dye and pigment manufacturing;
- H. Urethane and other open-cell foam product manufacturing;
- I. Petroleum and coal products manufacturing and refining;
- J. Primary metal smelting;
- K. Vinegar, yeast and other pungent, odor-causing items production;
- L. Leather tanning;
- M. Cement and asphalt manufacturing;
- N. Explosives manufacturing;
- O. Fertilizer and other agricultural chemical manufacturing.

(Ord. No. 13357, § 3(Exh. A), 2-16-2016; Ord. No. 13172, § 3(Exh. A), 7-2-2013; Ord. No. 13064, § 2(Exh. A), 3-15-2011; Ord. No. 12939, § 4(Exh. A), 6-16-2009; Ord. 12899 § 4, Exh. A (part), 2008; Ord. 12875 § 2 (part), 2008)

17.10.581 - Research and Development Industrial Activities.

Research and Development Industrial Activities include scientific research for the design, development, engineering, and testing of high technology electronic, industrial, or scientific products in advance of full-scale manufacturing of final products. The only manufacturing uses in this classification consist of the creation of prototype products, plans, or designs for the primary purpose of research, development, or evaluation, rather than sale. This classification also includes certain activities accessory to the above, as specified in Section 17.10.040.

This classification excludes manufacturing uses, wholesale and storage uses, repair and retail sales, except as an accessory use as specified in Section 17.10.040; this classification also excludes the on-site production of products for sale, and biotechnology laboratories approved for National Institute of Health experiments using Risk Group 4 or Restricted Agents (commonly known as "bio-safety level 4") (Section 17.10.580 Heavy/High Impact Manufacturing Activities).

This classification includes, but is not limited to, biotechnology firms, "clean-tech"/energy, environmental, electronic research firms, or pharmaceutical research laboratories.

(Ord. No. 13357, § 3(Exh. A), 2-16-2016; Ord. No. 12939, § 4(Exh. A), 6-16-2009; Ord. 12875 § 2 (part), 2008)

City of Palo Alto⁴

18.04.030 Definitions

(95.1) "Medical research" means a use related to medical and/or dental research, testing and analysis, including but not limited to trial and clinical research. Biomedical and pharmaceutical research and development facilities are not included in this definition. Medical Research does not include the storage or use of quantities of hazardous materials above the exempt quantities listed in Title 15 of the Municipal Code nor any toxic gas regulated by Title 15. Additionally, Medical Research may include storage and use of etiological (biological) agents up to and including Risk Group 2 or Bio Safety Level 2 (Center for Disease Control).

(123) "Research and development" means a use engaged in the study, testing, engineering, product design, analysis and development of devices, products, processes, or services related to current or new technologies. Research and development may include limited manufacturing, fabricating, processing, assembling or storage of prototypes, devices, compounds, products or materials, or similar related activities, where such activities are incidental to research, development or evaluation. Examples of "research and development" uses include, but are not limited to, computer software and hardware firms, computer peripherals and related products, electronic research firms, biotechnical and biomedical firms, instrument analysis, genomics, robotics and pharmaceutical research laboratories, and related educational development. Research and development may include the storage or use of hazardous materials in excess of the exempt quantities listed in Title 15 of the Municipal Code, or etiological (biological) agents up to and including Risk Group 3 or Bio Safety Level 3 classifications as defined by the National Institute of Health (NIH) or the Center for Disease Control (CDC). Higher classification levels of etiological (biological) agents are not allowed without express permission of the City Manager, Fire Chief, and Police Chief.

⁴ https://codelibrary.amlegal.com/codes/paloalto/latest/paloalto_ca/0-0-0-76395

City and County of San Francisco

SEC. 890.52. LABORATORY.⁵

Laboratory shall mean space within any structure intended or primarily suitable for scientific research. The space requirements of uses within this category include specialized facilities and/or built accommodations that distinguish the space from office uses (as defined in Section 890.70), light manufacturing (as defined in Section 890.54(a)), or heavy manufacturing (including uses listed in Sections 226(g) through 226(w)). Examples of laboratories include the following:

- (a) Chemistry, biochemistry, or analytical laboratory;
- (b) Engineering laboratory;
- (c) Development laboratory;
- (d) Biological laboratories including those classified by the Centers for Disease Control (CDC) and National Institutes of Health (NIH) as Biosafety level 1, Biosafety level 2, or Biosafety level 3;
- (e) Animal facility or vivarium, including laboratories classified by the CDC/NIH as Animal Biosafety level 1, Animal Biosafety level 2, or Animal Biosafety level 3;
- (f) Support laboratory;
- (g) Quality assurance/Quality control laboratory;
- (h) Core laboratory; and
- (i) Cannabis testing (License Type 8—Testing laboratory, as defined in California Business and Professions Code, Division 10).

(Added by Ord. 298-08, File No. 081153, App. 12/19/2008; amended by Ord. 229-17, File No. 171041, App. 12/6/2017, Eff. 1/5/2018)

ARTICLE 25: MEDICAL WASTE GENERATOR REGISTRATION, PERMITTING, INSPECTIONS AND FEES⁶

SEC. 1502. DEFINITIONS.

(j) "Highly communicable diseases" means diseases, such as those caused by organisms classified by the Federal Centers for Disease Control as Biosafety Level IV organisms, which, in the opinion of the Director, the infection control staff, the department, attending physician, surgeon, or attending veterinarian, merit special precautions to protect staff, patients, and other persons from infection. "Highly communicable diseases" does not include diseases such as the common cold, influenza, or other diseases not representing a significant danger to nonimmunocompromised persons.

⁵ https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_planning/0-0-0-27121

⁶ https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_health/0-0-0-4478