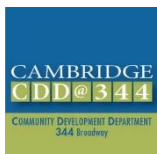


Zoning for Labs

Presentation for the
Economic Development
and Neighborhood and
Long-term Planning
Committees

December 7, 2022

**Community
Development
Department**





“Lab Use” in Zoning: Recap

Article 4.000 – Table of Land Uses

4.34 Office and Laboratory Use

- a. Office of a physician, dentist or other medical practitioner not located in a clinic listed under Subsection 4.33(d)
- b. Office of an accountant, attorney, or other non-medical professional person (includes properly licensed massage therapists)
- c. Real Estate, insurance or other agency office
- d. General office use
- e. Bank, trust company or similar financial institution
- f. **Technical office for research and development, laboratory and research facility** subject to the restrictions in Section 4.21m [limited manufacturing as an accessory use]

Note: 4.34f only includes commercial R&D; academic and non-commercial research is a separate land use category.

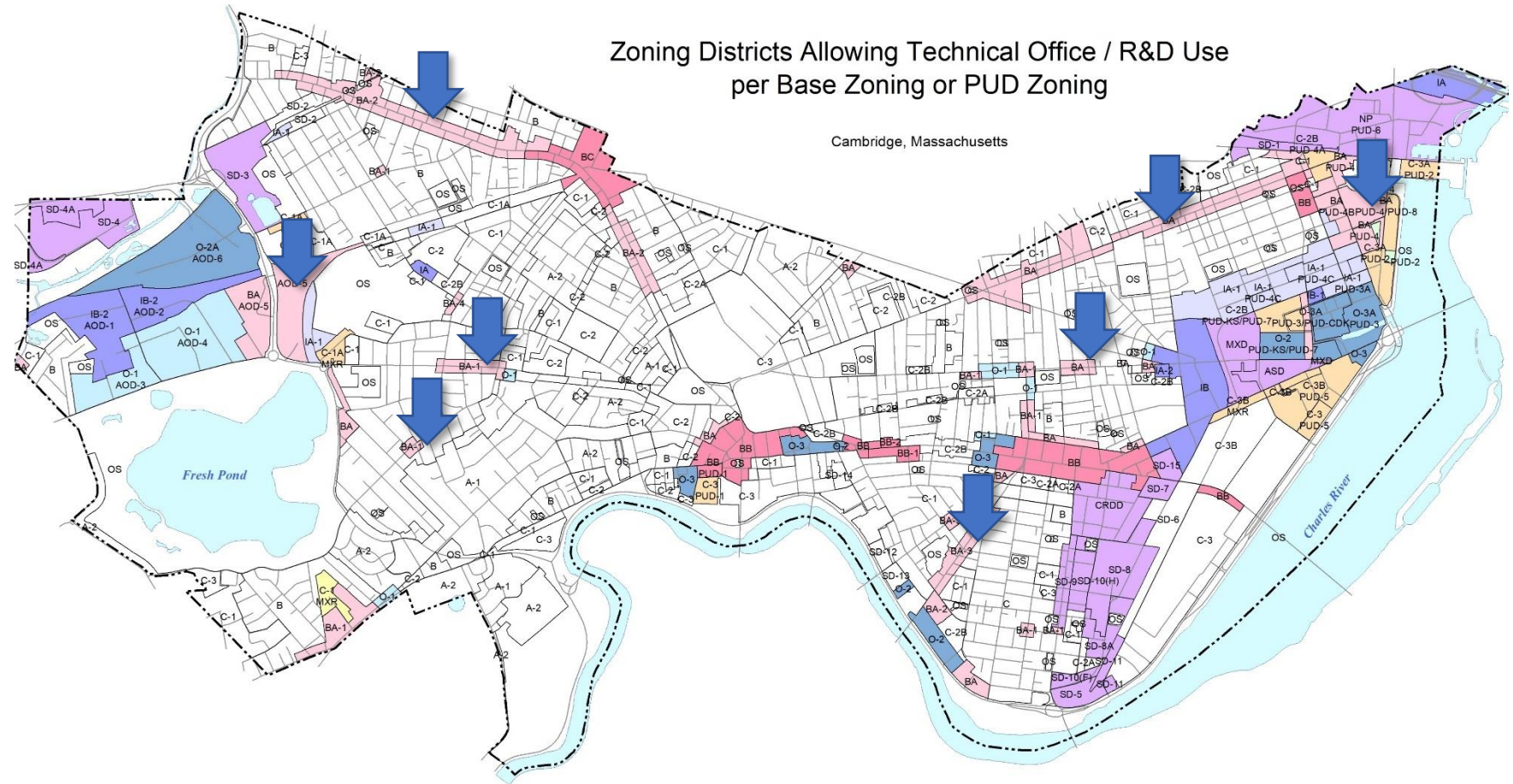
Where is Technical Office / R&D allowed?

PERMITTED:

- All Office, Business and Industrial base districts
- Some PUD overlay zoning districts

NOT PERMITTED:

- All Residence and Open Space Districts



Possible Zoning Concepts

Category	Concept	Issues/Considerations
Use	Change regulations for Technical Office / R&D in lower-scale districts	<ul style="list-style-type: none"> • Would capture all types of R&D (large/small, biological, other) • Impacts might be felt most by smaller businesses • If special permit, what are the criteria?
Use	Separate definition for “Life Science,” change where it is allowed	<ul style="list-style-type: none"> • Focus on uses with more impact from mechanicals • How best to make the distinction? Will it always be clear? • Still could impact smaller businesses • If special permit, what are the criteria?
Review	Special design standards for Technical Office or Life Science in lower-scale districts	<ul style="list-style-type: none"> • Could include: mechanical system placement and screening, loading dock enclosure/management, noise and light mitigation • Administrative review to certify standards are met
Review	Lower Project Review Special Permit threshold for Technical Office or Life Science	<ul style="list-style-type: none"> • More holistic review process • Special permit process allows more flexibility, but time and procedures can be burdensome • Criteria in addition to Article 19?



What We Heard: March hearing



What we heard on 3/17/22:

- **Market Dynamics:** lab space crowding out other use types in certain districts (e.g., housing or retail)
- **Land Use:** compatibility concerns of some types of labs with other land uses in a mixed-use district
- **Use Definitions:** Importance of distinguishing between the more intensive lab uses and the less intensive lab uses



Other Communities

How do other communities define lab uses?



Other Communities - Definitions

Single Definition

“A facility/establishment/laboratory/use/...
...engaged in the study, testing, research, engineering,
product design, analysis, development...
...of products/services of a
chemical/physical/biological/mechanical/electronic...
...nature.”

*Less
Intensive*

Split Definition

“Where dry materials, electronics and/or large instruments are tested and analyzed, with limited piped services. May require controlled temperature/humidity and dust control.”

VS

*More
Intensive*

“Where chemicals, drugs or biological matter is tested and analyzed, and which typically requires water, direct ventilation, specialized piped utilities and protective measures.”

Other Communities – Locations of Lab Restrictions

Single Definition

- Generally permitted in all office, research, manufacturing/industrial districts
- Some restrictions in transition areas – prohibitions in “neighborhood commercial”, “downtown commercial” or retail-focused areas
- Municipalities with form-based zoning approaches are more permissive of lab uses vs. traditional zoning

Split Definition

- Less intensive labs permitted in commercial areas, general office districts, and light industrial
- “Wet” labs permitted mostly in heavy industrial districts or require some additional review threshold (e.g., a special permit or design review)



Other Communities – Design restrictions in zoning

- Max height of rooftop mechanicals
- Max area of floorplates
- Location of loading/delivery/service entrances
 - Design of loading and delivery areas
- Commercial and industrial property noise limitations
- Commercial lighting standards

Biosafety Level Classifications

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.



Lab Uses and Trends in Cambridge



Commercial Industry Trends

National & Local Trends

- Major markets like San Francisco, New York, and Greater Boston are seeing an increasing rate of office space vacancy due to “work from home” and macroeconomic trends
- Companies are either not renewing leases, subleasing, back peddling on expansions, or breaking leases.
- Companies that are looking for office space are looking for quality over quantity

Locally

- According to CBRE, between Q2 and Q3 2022, Cambridge office vacancy rates increased from 5.9% to 8.7% - highest vacancy level since 2013
- East Cambridge/Kendall Square has the tightest office and lab market
- Small and mid-size companies are having hard time finding small lab/flex spaces to stay and grow in Cambridge

What Type of Industries Use Lab Space?

Life science and biotechnology firms are not the only companies looking for R&D space. Other industries that need wet and dry lab space include:

- Food incubators
- Medical Device
- Clean Energy
- Robotics/Automation
- Fabrication/Prototyping

Not all R&D need large mechanical arrays – mostly biological laboratories, due to requirements for air handling and exhaust



BU Robotics Lab. Photo courtesy of Boston University



Industry Lab – Norfolk Street (Photo Credit – Industry Lab)

R&D in Cambridge

- Long history of commercial R&D –both large and small companies
- R&D uses have a range of space and operational needs –flexible “core and shell” space often desirable
- Not all R&D needs large mechanical arrays – mostly biological laboratories, due to requirements for air handling, exhaust, &c.
- There is a market for smaller and other types of R&D businesses seeking space nearby Kendall Square and Alewife



The Engine, Cambridge (Photo Credit – The Engine)



Greentown Labs, Somerville (Photo Credit – Greentown Labs)



Questions & Discussion



Discussion

- Do we want to change the zoning definition of Technical Office to create a category for smaller sized and diverse research?
- How can research/lab be a good neighbor in mixed use districts?
 - Building design?
 - Operations e.g. noise, lighting, ventilation?
 - Use and character of ground floors