

# PUD-KS Zoning Continued Discussion

February 17, 2015



Cambridge Planning Board  
Community Development Department

CAMBRIDGE  
CDD@344

COMMUNITY DEVELOPMENT DEPARTMENT  
344 Broadway

# Kendall Square Design Guidelines 2013

## Goals

- Create a **positive mixed use district** where tall buildings with large floorplates can be good neighbors to public spaces, smaller existing buildings, and adjacent residential neighborhoods.
- Create **high-quality public environments**, and ensure **development contributes** to the **character and vitality** of the surrounding community
- Sensitively **manage the impacts of bulk and height** and **animate the major streets and public spaces** through encouraging **active ground floor**.

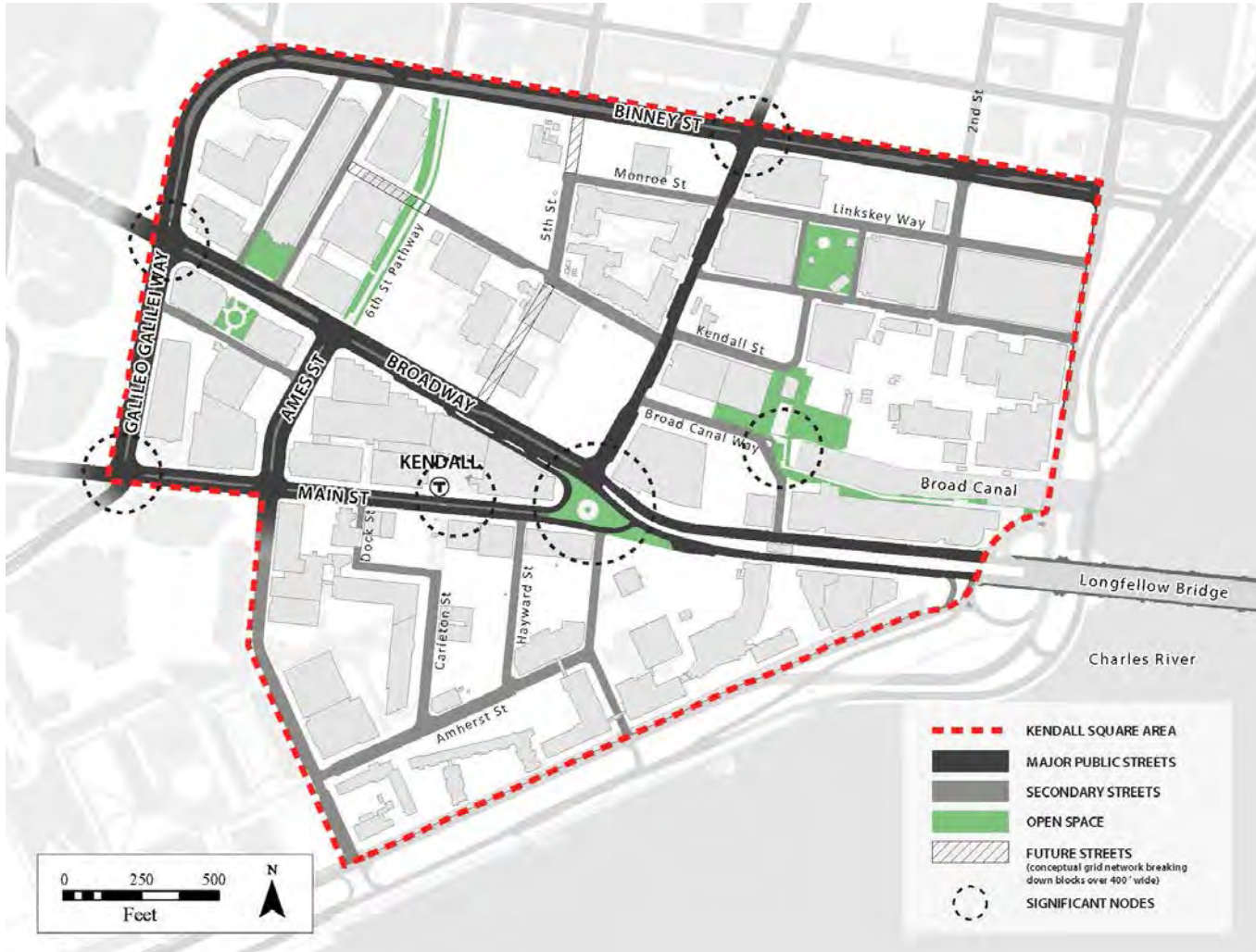
## Key themes

1. Street types and edges
2. Walkability
3. Public realm / open space
4. Built Form
5. Ground Floor Design
6. Environmental Quality





# Street types and edges



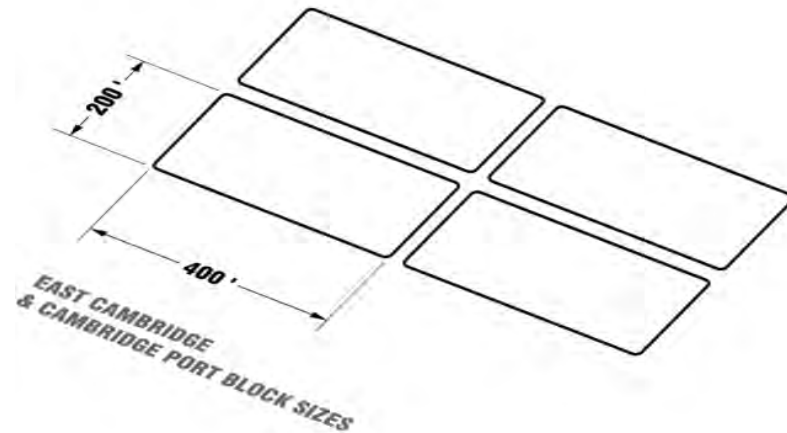
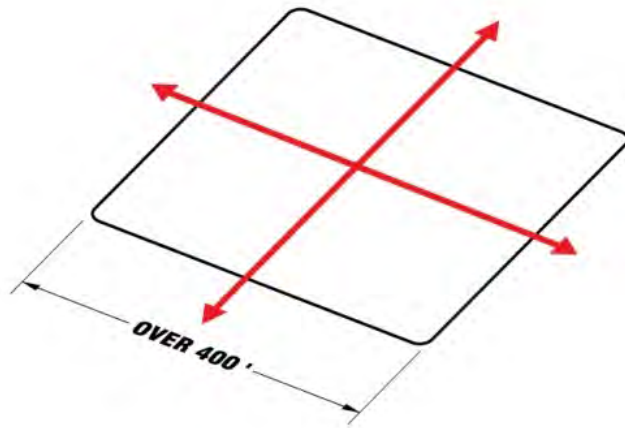
# Walkability

## Connections/Block sizes

1. Break up large blocks and increase permeability by creating pedestrian and bicycle connections

## Loading and servicing

1. Loading and servicing located and designed to support walkability and minimize dead zones - away from major public streets and pedestrian corridors, and consolidated



# Public realm / open space

1. Support pedestrian flow and provide access to outdoor and indoor public spaces that allow people to gather, and encourage public activity
  - Locate courtyards and open spaces to maximize sun exposure.
  - Connect outdoor public realm with indoor public spaces.
  - Streets and other public spaces should feel safe in the evening.
2. Create a network of diverse places building community, vitality and innovation
  - Gardens, courtyards, roof gardens, parks, plazas and promenades.





# Built form - architectural identity

1. Emphasize a distinct identity and architectural composition
  - Legible from adjacent streets and critical viewpoints, as well as the overall Kendall Square skyline
  - Use and proportioning of materials, colors and shapes that differ from those of adjacent buildings.
2. Convey the act and spirit of innovation in Kendall Square
  - Use transparent materials
  - Install media displays
  - Install interactive media to bring cutting-edge technology closer to the public



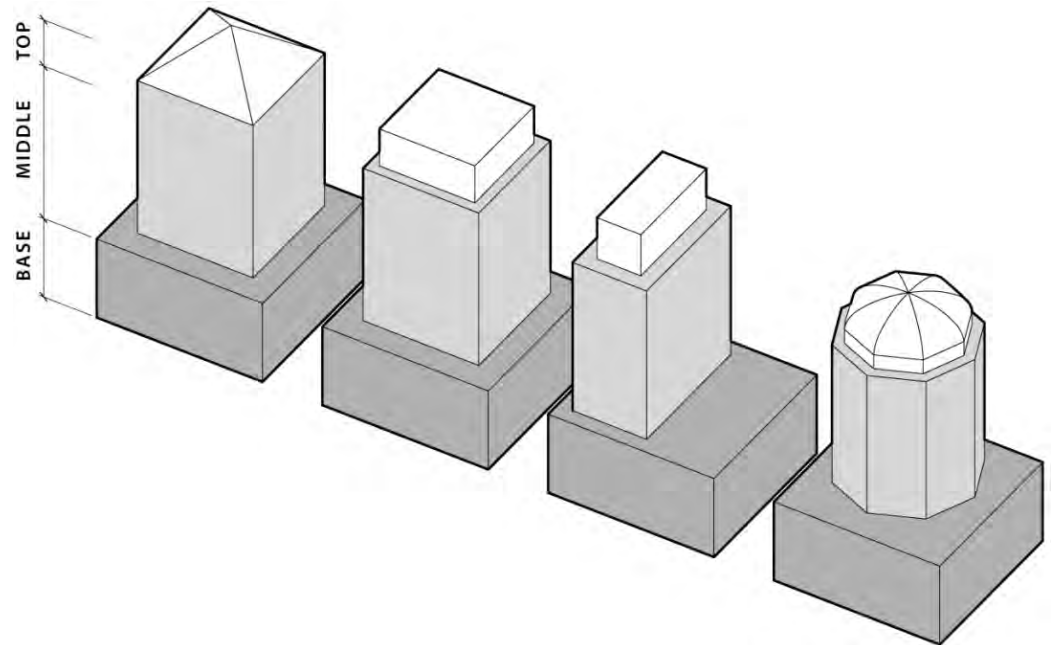
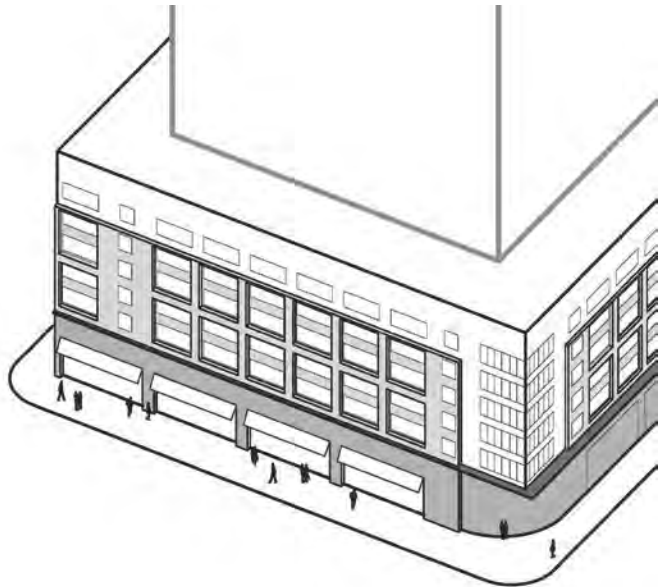
# Built form - scale and massing

1. Encourage building forms and site planning that relates to the surrounding context
2. Create sensitive transitions to neighboring uses, especially existing residential buildings, historical structures, and public parks.
  - Include setbacks to create transitions to adjacent low-scale buildings
  - Design and locate open space to be responsive to adjacent uses
  - Use sensitive site planning and building design to reduce impacts on significant view corridors from public spaces



# Built form - scale and massing

3. Design buildings to minimize monolithic massing and break down scale
  - Clearly express base, middle, and top within the streetwall height zone as well as for buildings exceeding streetwall height.
  - Pay special attention to the first floors (bottom 20 feet) of buildings.

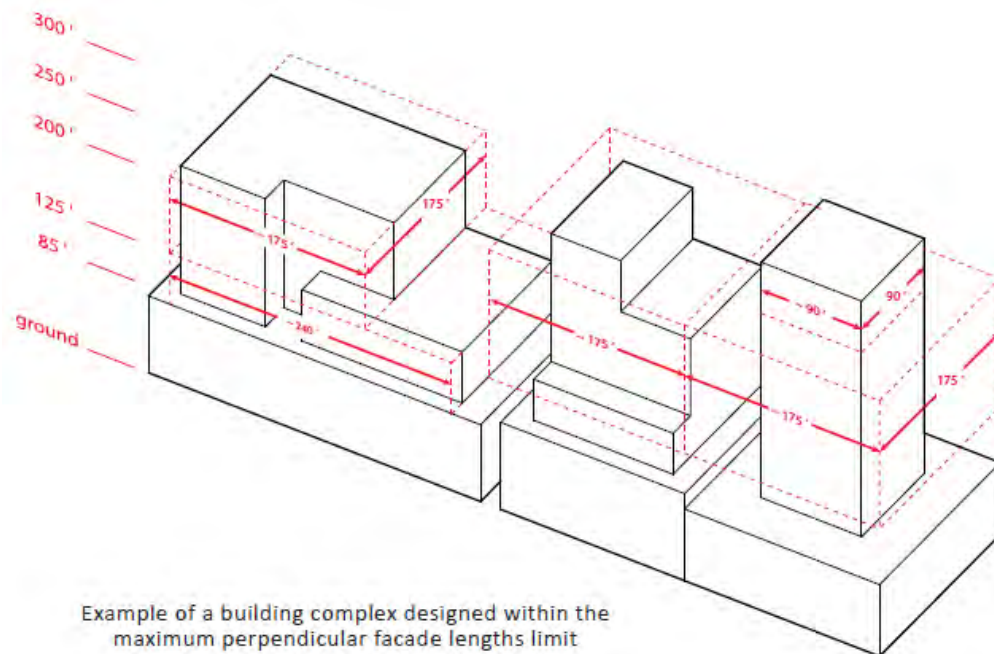




# Built form - scale and massing

## 4. Provide variety of building heights and massing

- Maximum façade lengths and minimum building separation to limit impacts (shadow, view, sky etc)
- Smaller floorplates for buildings above 85'

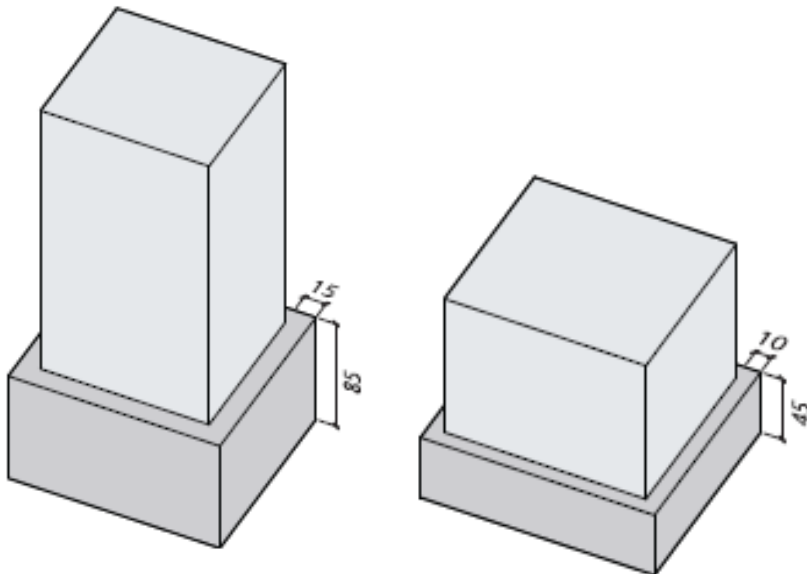


Example of a building complex designed within the maximum perpendicular facade lengths limit

| Height Range (feet)                        | Minimum building separation | Maximum length of plan dimension |
|--|-----------------------------|----------------------------------|
| 251' to 300'<br>(for residential use only) | 100'                        | 160' x 65' or 90' x 90'          |
| 201' to 250'                               | 100'                        | 175' x 175'                      |
| 126' to 200'                               | 20-40'                      | 175' x 175'                      |
| 85' to 125'                                | 15-25'                      | 240' x 175'                      |
| Streetwall (ground to 85')                 | None                        | None                             |

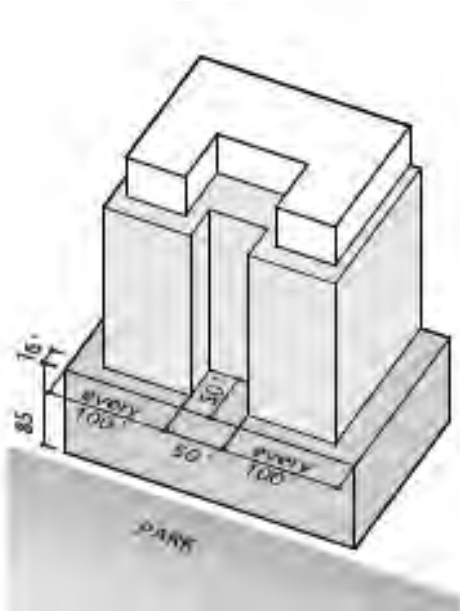
# Built form – streetwalls

1. Create streetwalls to help frame sidewalks, plazas, and other public spaces
2. Create a strong datum by setting back upper floors to create a strong streetwall edge and to limit the sense of height
  - **Major streets:** 85' streetwalls with upper floors set back 15'  
Façades without setbacks may be appropriate in specific locations to create architectural variety.
  - **Secondary streets:** 45' streetwalls with upper floors set back 10'  
Setbacks to include balconies and rooftop terraces.



# Built form – streetwalls

- **Park Edges:** Support an environment that is active, safe, and welcoming
  - Pay special attention to scale and shadows
  - Set back buildings above 85' by 15'
  - Create vertical breaks for building volumes above 120' in height
  - Façades exceeding 100' in width should be separated by a 50' gap



Sketch of potential future development and open space at Volpe



# Built form - tall buildings

1. Provided in locations to help define the center of Kendall Square
2. Buildings over 200' should be designed with particular attention to the architectural character of the top of the building
  - Consider the variety of vantage points (Point Park, Third St, Binney St & Broadway)
  - Avoid monolithic appearance & emphasize slender, vertically-oriented proportions
  - Consider variation in forms that present different profiles
  - Avoid “slab” volumes. Point towers expressing vertical volumes are encouraged.



# Active ground floor & retail

1. **Major Public Streets** – 75% of street frontage should be occupied by retail uses
2. **Secondary Streets** – 75% of street frontage should be occupied by active uses
  - Encourage interaction between activities on the ground floor of buildings and sidewalks.
  - Ground floor façades to reduce the distinction between exterior and interior spaces



# Environmental quality

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1. Avoid unnecessary environmental impacts
2. Evaluate each design to find outcomes that balance the positive aspects of building near a transit hub with the changes in the environment that result from relatively dense buildings
  - Locate and shape buildings to minimize shadows on public parks and plazas.
  - Design new buildings and open spaces to minimize negative wind impacts on streets and public spaces.
  - Provide vegetative cover, improve stormwater infiltration, and reduce heat island effect.
  - Projects should attempt to minimize noise generated from rooftop mechanical equipment.

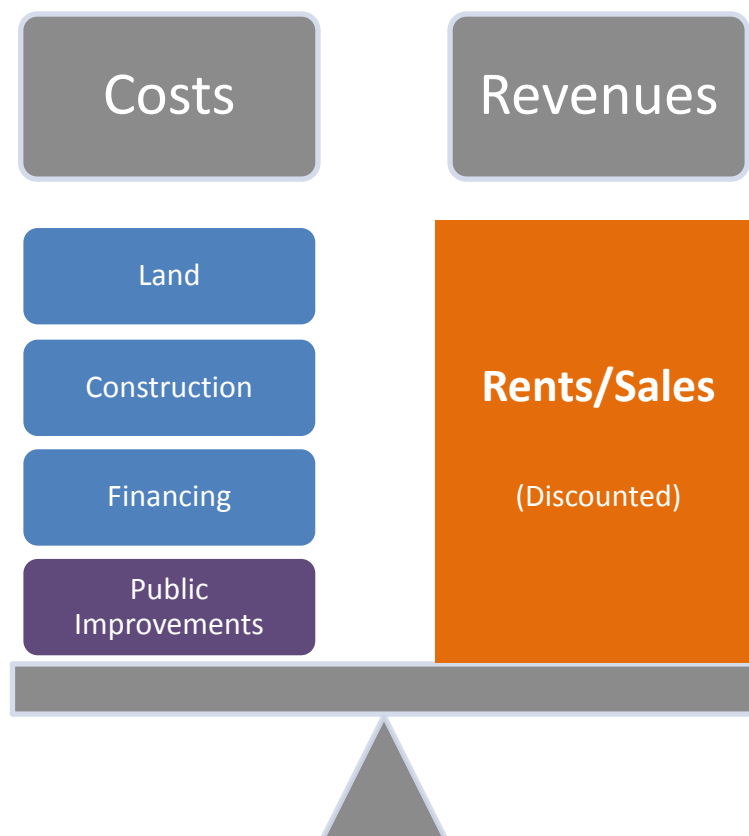


# PUD considerations

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- Need to set urban design expectations, but allow for creative design solutions and flexibility
- Create a master plan that configures the required open space with a view towards maximizing solar access, while balancing the need for logical pedestrian circulation and spatial organization of new buildings
- Movement network plan to define the character and feel of streets, and pedestrian and bicycle connections
- Detailed building design guidelines, including building height plan
- Supplement the design guidelines with more guidance on open space and public realm planning and design.

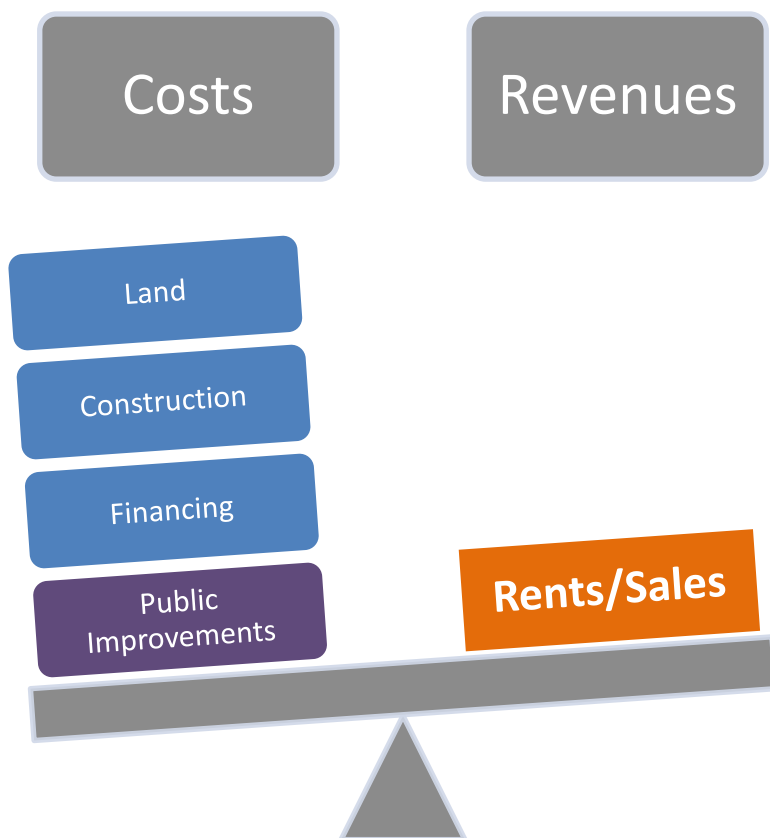
# Affordable Housing: Considerations



## *Private Market Development*

- Costs mostly up-front
- Revenues (discounted over time) calculated to offset costs & yield return

# Affordable Housing: Considerations

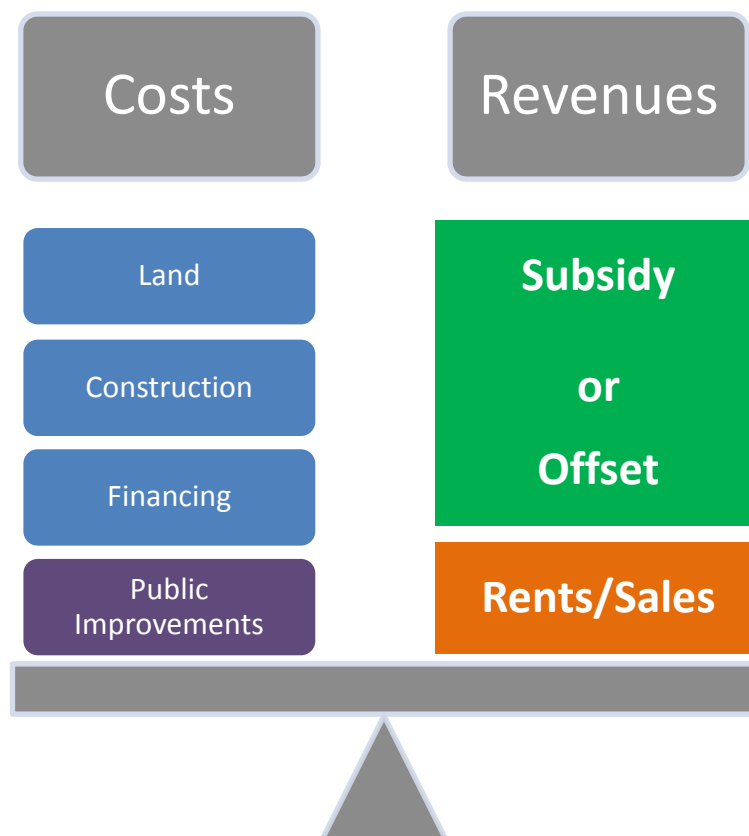


## *Affordable Housing Development*

- Costs are similar
- Revenues are not enough to offset costs



# Affordable Housing: Considerations



## *Affordable Housing Development*

- Subsidized by outside funding sources
- Offset by revenues from market-rate development (internal subsidy)

# Affordable Housing: Income Levels

| Low/Moderate Income                      | Middle Income                            |
|--|--|
| Up to 80% of area median income          | 80% - 120% of area median income         |
| Housing costs $\leq$ 30% of gross income | Housing costs $\leq$ 30% of gross income |
| Very large subsidy required (80%+)*      | Large subsidy required (40-60%)*         |

*\* Based on Cambridge Incentive Zoning Ordinance Nexus Study by Karl F. Seidman Consulting Services, 2015. Actual figures vary based on household size, construction type and other factors. **ALL FIGURES APPROXIMATE.***

# Affordable Housing: Current Requirements

| <b>Inclusionary Zoning</b>  | <b>Incentive Zoning (Linkage)</b>  |
|---|--|
| <u>Residential</u> development:<br>All with 10+ units                 | <u>Commercial</u> development:<br>30,000+ SF                             |
| 15% of base units affordable to low and moderate income (required)    | \$4.58/SF contribution to Affordable Housing Trust (current rate)*       |
| Compensating as-of-right density bonus (resulting 11-12% affordable)  | Only projects seeking SP for increased intensity of use (including PUD)* |
| Units permanently affordable, no cost to City (except administration) | Funds used flexibly for Affordable Housing Trust programs                |
| No “buy-outs” (thus far)  | Housing creation option (by SP) available, but not sought                |
| Result: 790+ units created  | Result: \$3.5 million since 2000   |
| <b><i>Study underway</i></b>  | <b><i>* Study complete – recommended changes</i></b>                     |



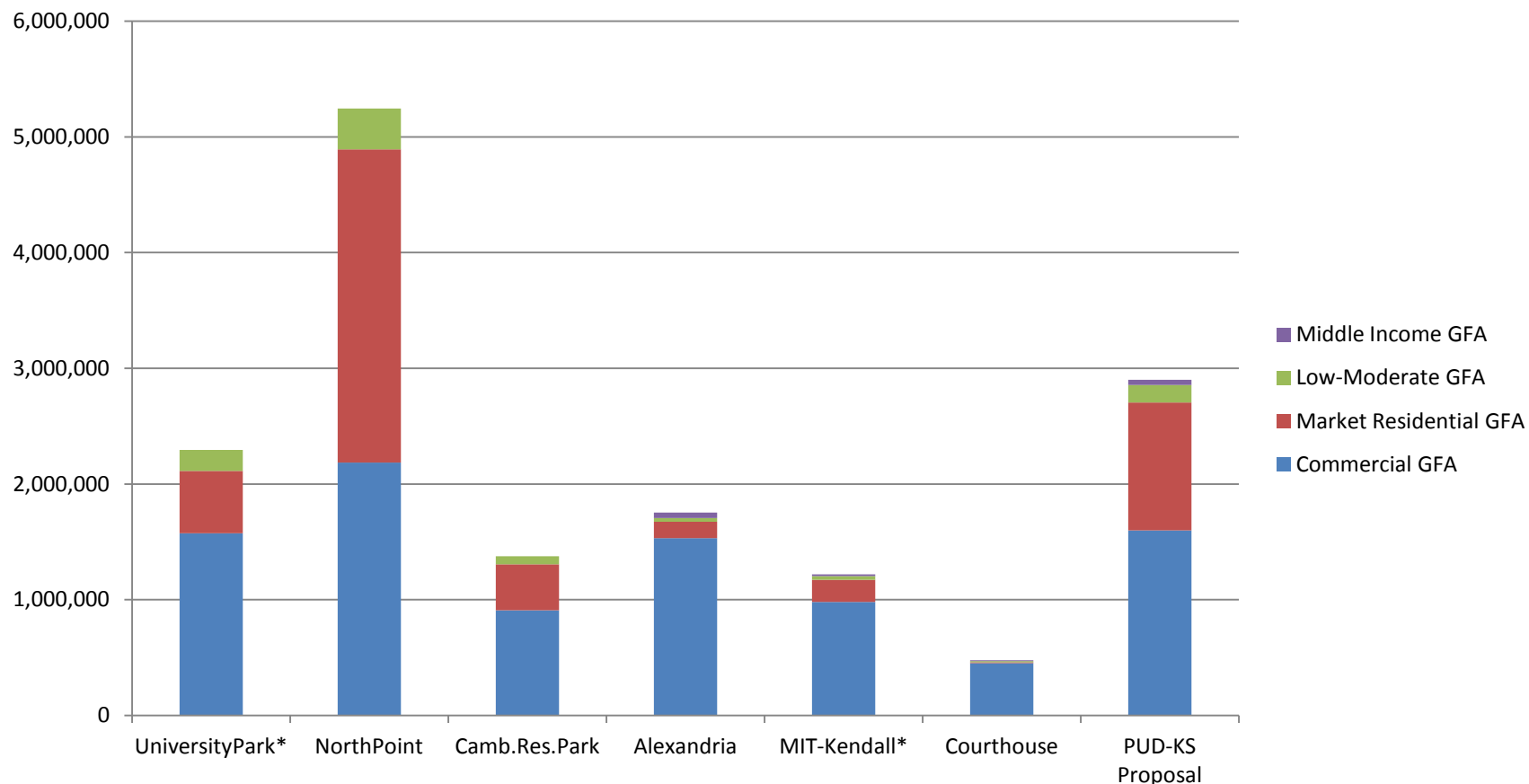
# Affordable Housing: Initial Proposal

| PUD-KS + Volpe Site                             | Initial Proposal         |
|---|--------------------------|
| Commercial GFA<br>(incl. retail and innovation) | 1,600,000                |
| Residential GFA<br>(incl. affordable)           | 1,300,000                |
| Low-Moderate Income Res. GFA                    | 150,000<br>(11.5%)       |
| Middle Income Res. GFA                          | 0 – 45,000<br>(0 – 3.5%) |

*\* Note: Does not include government facility. ALL FIGURES APPROXIMATE.*

# Affordable Housing: Mixed-Use Projects

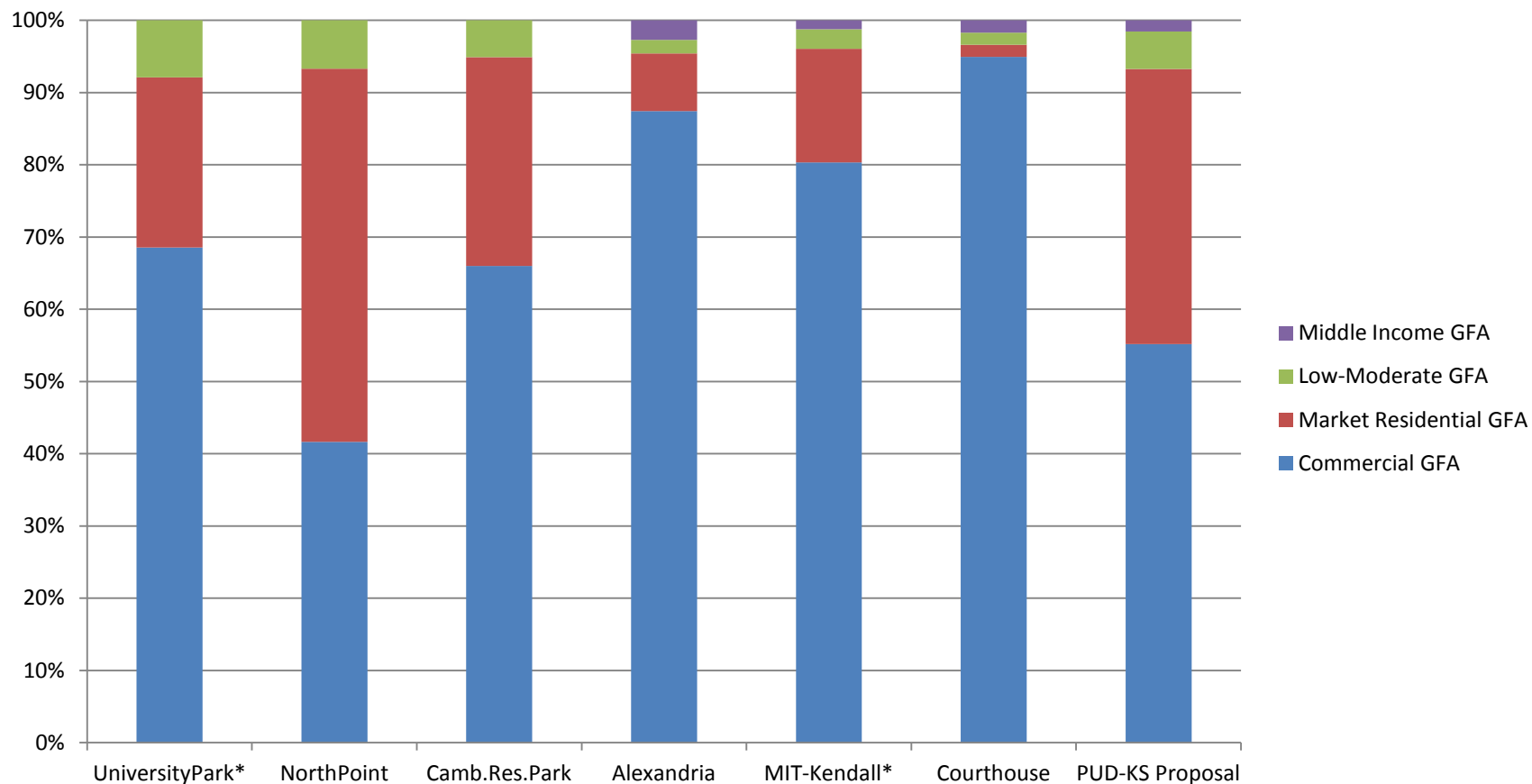
## Examples



\* *University Park figures are estimates, and do not include 300 Mass Ave and associated agreements. MIT-Kendall figures based on zoning proposal; development plan not yet approved. **ALL FIGURES APPROXIMATE.***

# Affordable Housing: Mixed-Use Projects

## Examples



\* *University Park figures are estimates, and do not include 300 Mass Ave and associated agreements. MIT-Kendall figures based on zoning proposal; development plan not yet approved. **ALL FIGURES APPROXIMATE.***

# Affordable Housing: Mixed-Use Projects

| Mixed-Use Project      | Low/Moderate/Middle<br>as % of <u>Residential</u> | Low/Moderate/Middle<br>as % of <u>Total Res+Comm</u> |
|------------------------|---|--|
| University Park*       | 25%   | 8%   |
| North Point            | 11%   | 7%   |
| Camb. Res. Park        | 15%   | 5%   |
| Alexandria             | 36%   | 5%   |
| MIT-Kendall*           | 20%   | 4%   |
| Courthouse             | 67%   | 3%   |
| <b>PUD-KS Proposal</b> | <b>11 – 15%</b>                                   | <b>5 – 7%</b>  |

\* University Park figures are estimates, and do not include 300 Mass Ave and associated agreements. MIT-Kendall figures based on zoning proposal; development plan not yet approved. **ALL FIGURES APPROXIMATE.**



## Affordable Housing: PUD considerations

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- Housing is a priority – don't want to disincentivize residential in favor of commercial
- Costs/revenues distributed across project as a whole
- Commercial development can offset affordability (incentive/linkage payments, units)
- Costs can be mitigated by construction type (e.g. low-rise, high-rise)
- PUD not “as-of-right” – more creative solutions
- Basic market rules still apply

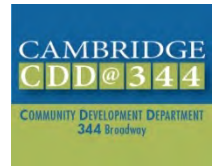
# Affordable Housing: Possible Strategies

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- Low/moderate units as fixed inclusionary percentage (distributed throughout residential buildings)
- Middle-income units consolidated in one building (mid-rise construction, family-sized units)
- Middle-income as requirement rather than incentive, tied to whole project (avoid residential disincentive)
- Leverage additional affordability from commercial development (e.g., incentive/linkage payments)

*Note: Inclusionary zoning requirements being studied, may be subject to future citywide change*

# Open Space: Current Zoning



## Total Open Space

- Includes all Public, Green or Permeable:  
*parks & plazas*  
*pathways*  
*private courtyards*  
*landscaped setbacks*

## Public Open Space

- Contiguous
- In northwest quadrant
- Flexibility for Federal open space

|                   | Required by PUD-KS | Volpe Area (acres) |
|-------------------|--------------------|--------------------|
| Parcel Area       |                    | 14.2               |
| Total Open Space  | 42%                | 6.0                |
| Public Open Space | 7.5 acres          | 7.5 (53% of site)  |

# Comparison: North Point



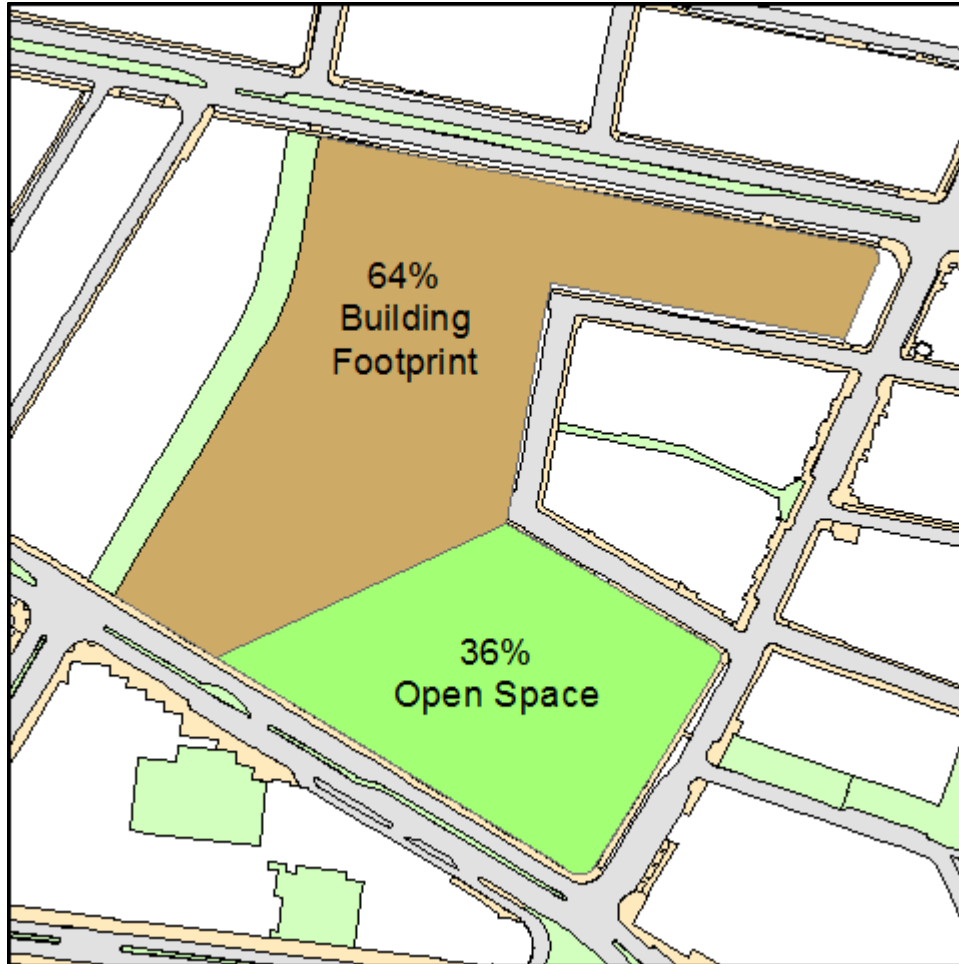
*Based on permitted Final Development Plan (PB #179), as most recently amended.*

**ALL FIGURES APPROXIMATE**

|                   | <b>Permitted (acres)</b> | <b>Permitted (%)</b> | <b>Required by Zoning</b> |
|-------------------|--------------------------|----------------------|---------------------------|
| Parcel Area       | 45.4                     |                      |                           |
| Buildable Lots    | 23.5                     | 68%                  |                           |
| Streets           | 10.9                     | 24%                  |                           |
| Total Open Space  | 11.0                     | 24% /32% non-street  | 20% (9.1 acres)           |
| Public Open Space | 4.9                      | 11% /14% non-street  | 2.5 acres                 |



# Total Open Space



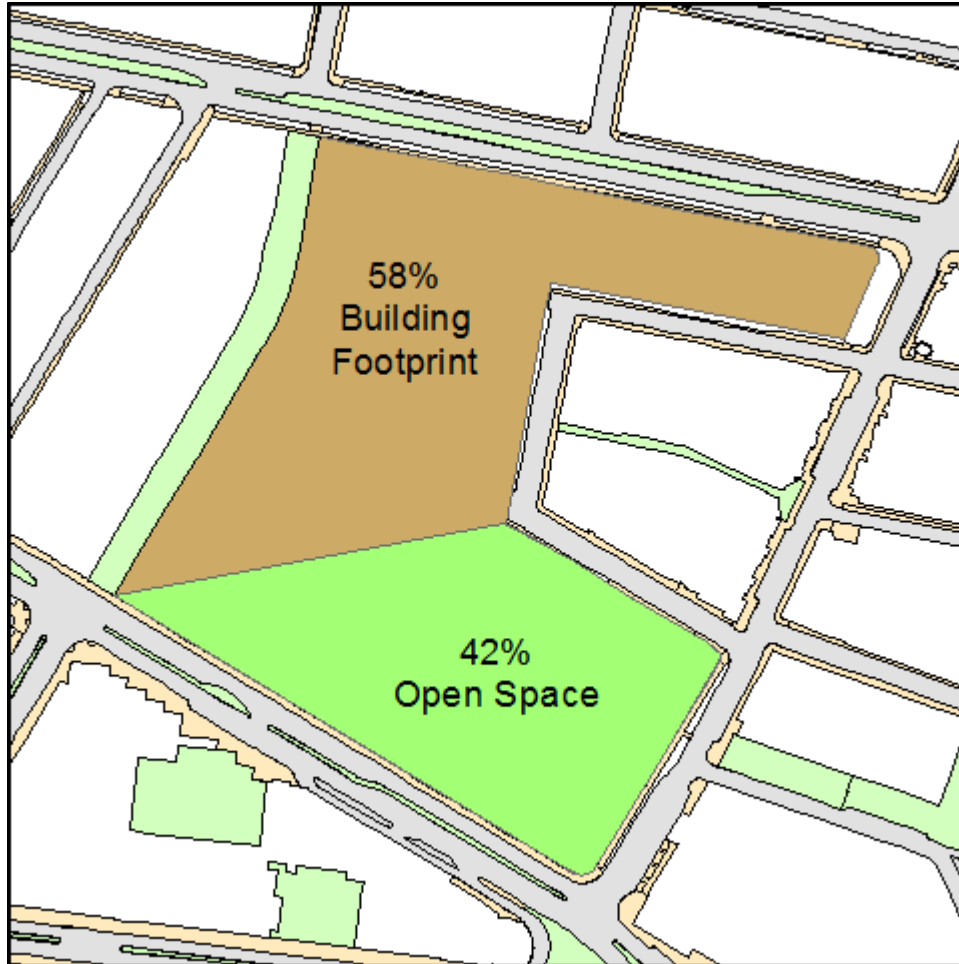
|             | Square Feet | Acres |
|-------------|-------------|-------|
| Parcel Area | 620,000     | 14.2  |
| Open Space  | 223,200     | 5.1   |
| Buildings   | 396,800     | 9.1   |
| Avg. Height | ~ 8 stories |       |

*Average building height based on proposed development capacity (FAR) distributed across buildable area.*

**ALL FIGURES APPROXIMATE**

*For illustration only. Not a development plan.*

# Total Open Space



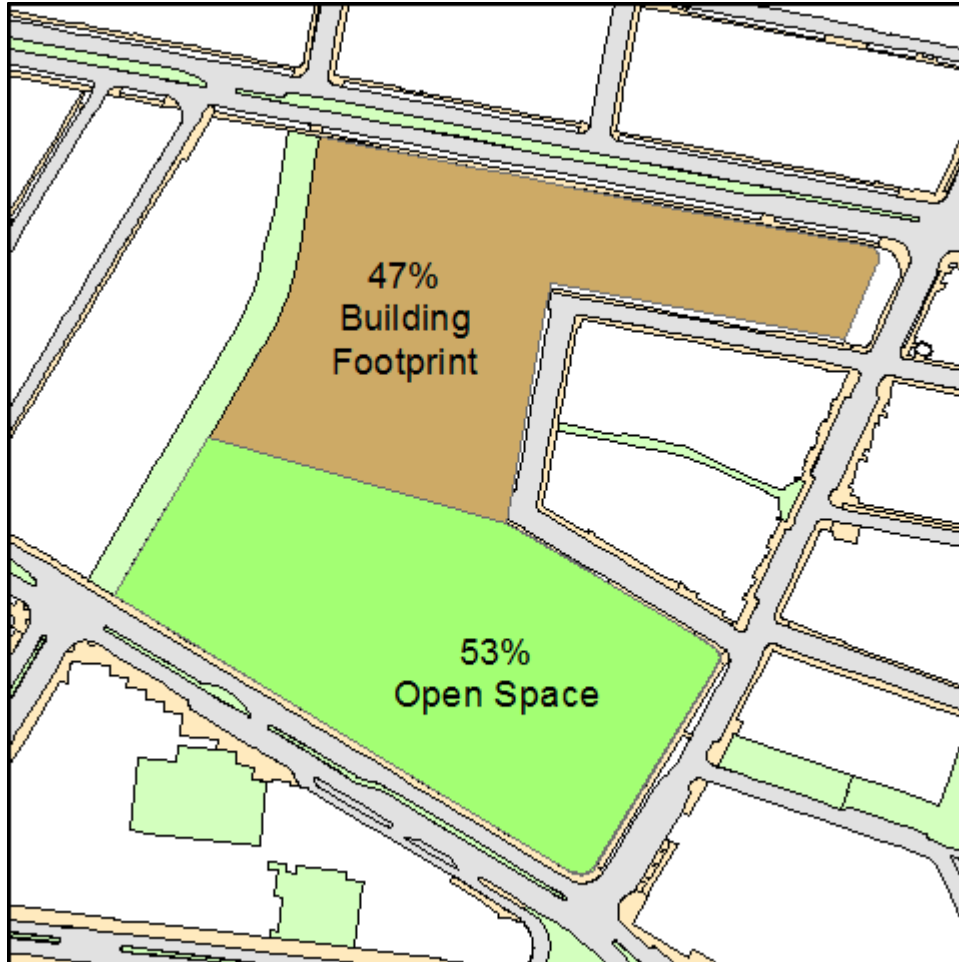
|             | Square Feet | Acres |
|-------------|-------------|-------|
| Parcel Area | 620,000     | 14.2  |
| Open Space  | 260,400     | 6.0   |
| Buildings   | 359,600     | 8.2   |
| Avg. Height | ~ 9 stories |       |

*Average building height based on proposed development capacity (FAR) distributed across buildable area.*

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# Total Open Space



|             | Square Feet  | Acres |
|-------------|--------------|-------|
| Parcel Area | 620,000      | 14.2  |
| Open Space  | 328,600      | 7.5   |
| Buildings   | 291,400      | 6.7   |
| Avg. Height | ~ 11 stories |       |

*Average building height based on proposed development capacity (FAR) distributed across buildable area.*

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# Public Open Space



***ALL FIGURES APPROXIMATE***

|             | <b>Acres</b> | <b>%</b> |
|-------------|--------------|----------|
| Parcel Area | 14.2         | 100%     |

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# Public Open Space



**ALL FIGURES APPROXIMATE**

|             | Acres | %     |
|-------------|-------|-------|
| Parcel Area | 14.2  | 100%  |
| Federal OS  | 1-2   | 7-14% |

## ***GSA Public Building Service Guidelines (Example):***

*The design team must demonstrate in design drawings how plazas and other gathering spaces allow for several different active and passive uses (such as farmers markets, seated assemblies, and employee breaks and lunches).*

**NOTE: Conceptual diagram for illustration only. No development sites have been determined.**

# Federal Open Space



*Boston (Moakley Courthouse)*



*Washington, DC*



*Seattle*



*Example of security measures*



# Public Open Space



**ALL FIGURES APPROXIMATE**

|                 | Acres          | %             |
|-----------------|----------------|---------------|
| Parcel Area     | 14.2           | 100%          |
| Federal OS      | 1-2            | 7-14%         |
| Public Park     | 7.5            | 53%           |
| <b>Total OS</b> | <b>8.5-9.5</b> | <b>60-67%</b> |

*“13.14.1 ... the required open space shall consist in part of a contiguous 7.5 acre Public Open Space to be located in the northwest quadrant of the PUD-KS district as further described and located in the Eastern Cambridge Plan.”*

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# Public Open Space



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| Parcel Area | 14.2  | 100%  |
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# Public Open Space



**ALL FIGURES APPROXIMATE**

|                     | <b>Acres</b> | <b>%</b>      |
|---------------------|--------------|---------------|
| Parcel Area         | 14.2         | 100%          |
| Federal OS          | 1-2          | 7-14%         |
| Secondary Streets   | ~1           | 7-14%         |
| <b>Public Space</b> | <b>2-3</b>   | <b>14-21%</b> |

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# Public Open Space



**ALL FIGURES APPROXIMATE**

|                     | <b>Acres</b> | <b>%</b>      |
|---------------------|--------------|---------------|
| Parcel Area         | 14.2         | 100%          |
| Federal OS          | 1-2          | 7-14%         |
| Secondary Streets   | ~1           | ~7%           |
| Pathways            | ~1           | ~7%           |
| <b>Public Space</b> | <b>3-4</b>   | <b>21-28%</b> |

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# Public Open Space



**ALL FIGURES APPROXIMATE**

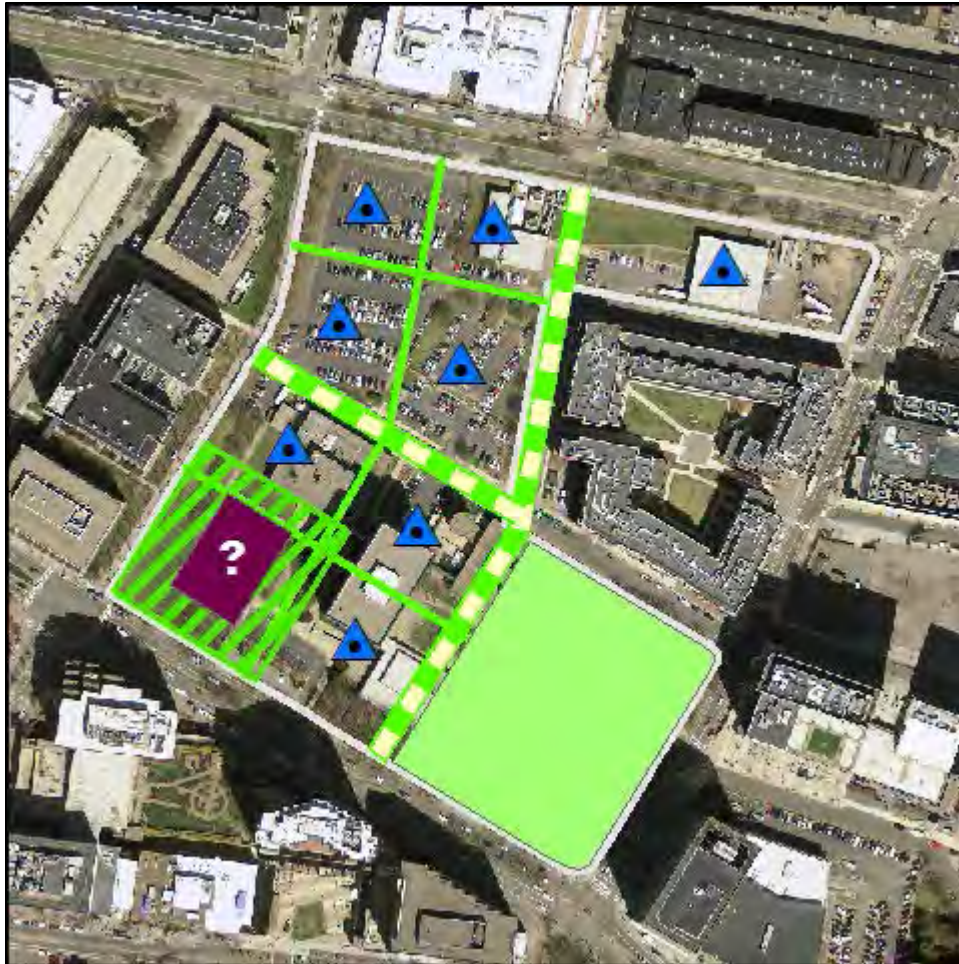
|                     | Acres      | %             |
|---------------------|------------|---------------|
| Parcel Area         | 14.2       | 100%          |
| Federal OS          | 1-2        | 7-14%         |
| Streets/Paths       | 1-2        | 7-14%         |
| Park                | 3-4        | 21-28%        |
| <b>Public Space</b> | <b>5-6</b> | <b>35-42%</b> |

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# Public Open Space



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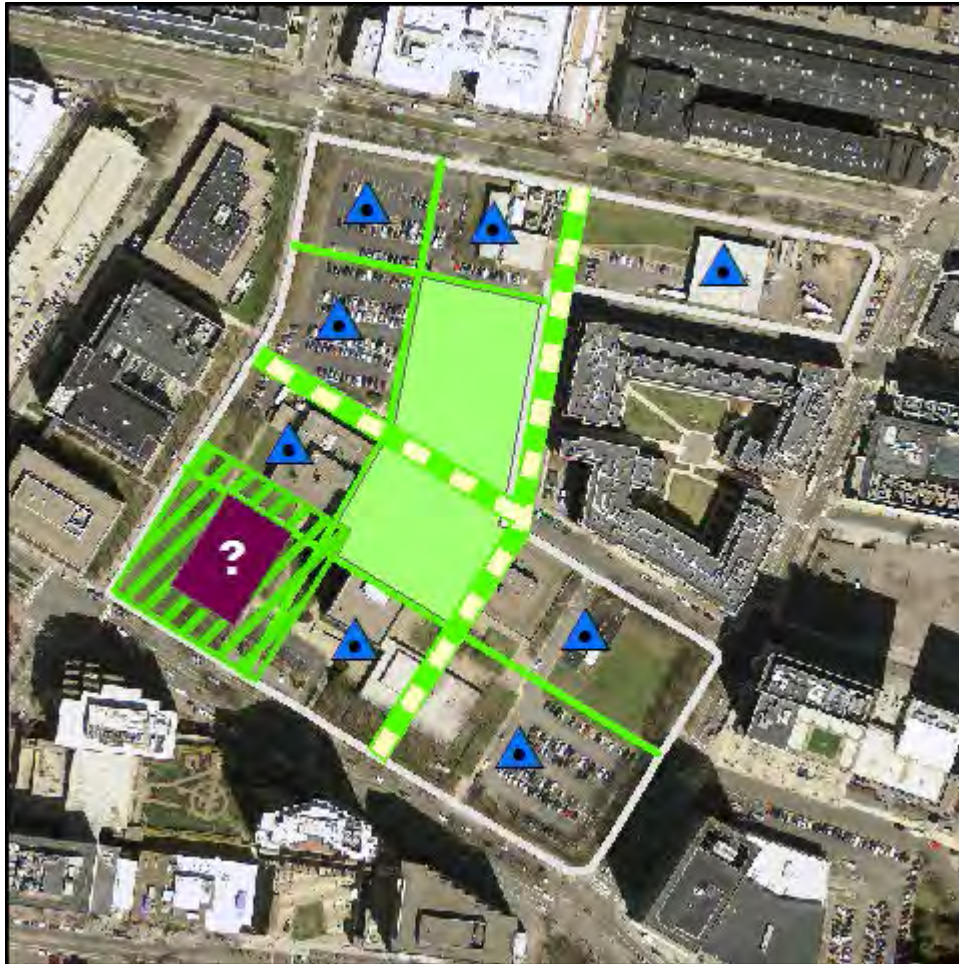
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| Streets/Paths       | 1-2        | 7-14%         |
| Park                | 2-3        | 14-21%        |
| <b>Public Space</b> | <b>4-5</b> | <b>28-35%</b> |

**NOTE: Diagrams meant to illustrate potential alternative locations for public space, not actual open space designs.**

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# Public Open Space



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# Public Open Space



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# Open Space Zoning Strategies

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## Total Open Space

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## Public Open Space

- About 42% (6 acres)  
*minimum*
- What to include:  
*public & private?*  
*terraces?*

- About 4-5 (+/-) acres  
*minimum*
- Public park (at least one), and pathways & connections
- Flexible location, orientation
- Flexibility to account for streets and Federal open space

## Constraints

Federal Facility

Affordable Housing +  
Public Contributions

Open Space

Land Size and  
Density

## Flexibility

Design/Construction  
Options

Phasing

Height and  
Orientation

Site Planning

