PUD-KS (Volpe Site) Rezoning  October 20, 2015

Community Development Department
Vision for Kendall Square

“A dynamic public realm connecting diverse choices for living, working, learning, and playing to inspire continued success of Cambridge’s sustainable, globally-significant innovation community.”

ECPT Planning Vision (CBT Architects + Planners)

K2 Planning Vision (Goody Clancy)
Zoned for Planned Unit Development (PUD-KS District)

Current zoning adopted through Eastern Cambridge Planning Study (2001)

K2 Study (2011-2012) recommended amendments

Planning Board discussed January-May 2015, zoning petition filed in June

Petition refiled, can be considered until February, 2016
Council comments - Joint Hearing June 29, 2015

**Housing**
- Proportion of housing
- Affordable housing (low-mod, mid)
- Housing for families

**Ground floor uses and activities**
- Family-friendly restaurants
- Low-price supermarket
- Ground floor retail needs more specificity
- Affordable retail & locally-owned
- Retail to attract people
- Workforce development needs
- Incubator space
- Daycare

**Open space & public realm**
- Needs to be very special
- Building facades matter
- Need family-friendly open spaces
- Maximize sunlight & livability
- Contiguous - one primary, a secondary
- Visibility from different vantage points
- Programming
- No gates, needs to face streets
- Welcoming to the neighborhoods
- Engaging & educational indoor & outdoor
- Civic, not corporate space – medieval plaza
- Accessibility of federally-owned open space

**Other**
- Cost and size of Volpe building & site
- FAR of 4.5 is dense
- Transportation – traffic impacts, red line
- Development feasibility
- Have community conversation

**Built form**
- Composition of buildings respect each other, especially at the lower level
- Floor plate sizes important
- Don’t wall off site
- 2 setbacks instead of just one
- Design guidelines need more detail
Planning Board comments – June 29 & July 14, 2015

**Land use**
- Supporting high-tech & innovation is most important goal for site
- Proportion of housing versus commercial/office space
- Affordable housing (low-mod, middle)
- Housing for families (3 beds)

**Open space and public realm**
- Amount of open space
- Connections are the key for open space
- Connect Kendall shows how to make space function without 5-acre park – it’s not the right location for such a large park
- Extend the canal and create more connections through the site

**Ground floor uses and activities**
- Retail - where it is going to be located, and what sort of retail it is going to be
- Design guidelines can include retail

**Built form & urban design**
- Where taller buildings should be located & whether there's a limitation on that area in which they can be located
- Need human-scale
- Need vision for creating a great space
- Broadway & Third St intersection is important
- Variation in height
- Concentrate on people who live and work there & neighborhoods
- Allowing more height for the residential

**Other**
- Need financial analysis
- FAR of 4.5 is a lot of sqf to assemble across the site
- Transit impacts
Community outreach

K2 Study (2011 – 2012)
- 24+ advisory committee & public meetings
- City Council roundtable + Planning Board discussions

Volpe Rezoning
- Postcard mail-out
- Volpe web page
- Flyers
- Brochure
- Social Media
- Public meetings
Community outreach

Seven drop-in conversations
1. July 30th, 5-7pm at Clement Morgan Park
2. Aug 5th, 5-7pm at Rogers Street Park
3. Aug 12th, 11am-2pm at Lafayette Square
4. Aug 15th, 2-5 pm at Greene Rose Park
5. Aug 20th, 11am-2pm at Kendall Square Farmers’ Market
6. Sept 12th, 11am-4pm at The Pride Day
7. Sept 18th, 9am-4pm at The Parking Day

Sit-down forum
Oct 17th, 10am – 12pm Kennedy-Longfellow School

Other meetings
Area 4, ECPT
Community outreach

Soliciting community feedback

Preferred ground floor uses and amenities

Preferred types of open spaces
Community outreach

Trade-off conversations

Key priorities:
1. Affordable housing
2. More housing
3. Amount of open space
4. Ensuring retail diversity
5. Community funds for open space, transit, and workforce development
Community outreach

Sit-down forum – site planning and design
Community outreach

Sit-down forum – built form
What we heard

Open Space

• Large, consolidated park vs. collection of smaller, more intimate spaces
• Active play – basketball, playground, water features
• Passive, natural setting to escape city
• More active, lively urban plaza
• Extend Broad Canal
• Indoor/outdoor market pavilion

Common themes

• Active & defined edges
• Sense of safety
• Public feel
• Visible from outside site
• Not overshadowed or overwhelmed by buildings
• Focus on outdoor spaces with some indoor opportunities
• Smaller open spaces need to be well-designed
• Streets to connect with open space
• Quality & character of the place is important
What we heard

Ground Floor Uses

- Grocery – fresh produce
- Family restaurant, incl. fast-order food, chains
- Pharmacy / Convenience Store
- More nightlife
- Affordable Daycare
- Workforce training space
- Connect Cambridge residents to new jobs
- Community & cultural spaces

Common themes

- Diverse & affordable retail
- Flexibility
- Smaller spaces
- Larger spaces to accommodate chains
- Not all needs can be met on the Volpe site
- Need to create destinations & retail attractors
What we heard

Streets & Connections

• 6th street walkway is important
• North-south connections for pedestrians & cyclists
• Don’t forget connections to East Cambridge & Wellington-Harrington
• Connections though Third Square
• Need some cars so site is not isolated
• Narrow Binney Street
• Transit improvements
What we heard

Built Form

• Recognition that this is the right location for density
• Create an urban environment with strong urban form
• Taller buildings distributed throughout site
• Taller buildings clustered towards the middle of the site
• Capitalize on the corner of Broadway & Third St
• Avoid tall buildings on Binney St
• Transition to sensitive uses
• Consider low buildings & strong edge on sixth street connector
• Access open space through buildings
• Buildings need to have Cambridge character

Common themes

• Encourage human scale within an urban setting
• Don’t want suburbs
• Start with an assemblage of places (not objects or buildings)
• Design buildings to frame public spaces
• Building height & massing, especially of taller buildings, should not overwhelm streets or open spaces
• Visual & physical permeability
Related Initiative - Connect Kendall Square

• Parallel City process studied systemic improvements to open space, connecting residents, workers, businesses and the natural environment
• Competitive process generated alternative approaches for Volpe Site
Work underway

1. Updating 3d model to show context of all development being considered in Kendall Square – MIT, MXD & PUD-KS
2. Kendall Square Mobility Taskforce
3. Transportation Analysis
Factors in Estimating Traffic Impacts

- Amount of development
- Pace of development
- Trip generation characteristics
  - Land use type
  - Choice of travel mode
- Trends
  - Settlement patterns
  - Travel mode patterns
K2C2 Development Scenarios

Square footage

- Existing Development (2010):
  - Retail: 0.11M
  - Residential: 3.62 M
  - General Office: 4.97 M
  - Research and Development: 4.97 M

- 2030 Under Existing Zoning:
  - Retail: 0.17M
  - Residential: 2.23 M
  - General Office: 5.18 M
  - Research and Development: 8.84 M

- K2C2 Proposal:
  - Retail: 0.30M
  - Residential: 3.39 M
  - General Office: 5.41 M
  - Research and Development: 10.52 M

Legend:
- Retail
- Residential
- General Office
- Research and Development
Calculating New Trips

NEW DEVELOPMENT

PERSON TRIPS

(ITE RATE AND ACS FACTOR)

MODAL SPLIT

PEDESTRIAN

TRANSIT

BICYCLE

(VEHICLE OCCUPANCY RATE)

PERSON TRIP BY MODE

CAR TRIPS

SQUARE FEET BY LAND USE
Kendall Square Modal Shares by Land Use

**Office and R&D**
- Current: 51%, 38%, 6%
- Enhanced TDM: 41%, 42%, 10%

**Residential**
- Current: 36%, 31%
- Enhanced TDM: 32%, 30%

**Retail**
- Current: 35%, 39%
- Enhanced TDM: 31%, 30%

**Academic/Institutional**
- Current: 27%, 41%
- Enhanced TDM: 27%, 42%
2030 Net New Person Trips by Land Use

“Person-Trips”

- **Existing Development (2010)**: 176 (Retail) + 6009 (employee) = 6185
- **2030 Under Existing Zoning**: 257 (Retail) + 6009 (employee) = 6266
- **K2C2 Proposal**: 775 (Retail) + 8303 (employee) = 9078

Legend:
- Retail
- Residential
- General Office
- Research and Development

Person-Trips in thousands.
Commute to Work

Northwest 16%
Arlington 4%
Somerville 8%
West 7%
Watertown, Waltham, Newton, Brookline 10%
Northeast 17%
Cambridge 11%
Boston 15%
Southeast 7%
Southwest 6%
Trips for the Study Area
Overview of Critical Sums Analysis

• Critical Sums Analysis is a planning tool used to evaluate build-out scenarios
• Compares how different levels of build-out impacts specific intersections in general way
• Not a traffic engineering tool
• Same methodology used in prior planning studies:
  – 2001 Citywide Rezoning
  – 2001 ECaPS
  – 2004 Concord-Alewife Plan
Critical Sums
Methodology

Critical movement volume at an intersection is the sum of all conflicting traffic movements (vehicles per hour).

Intersections with 1,500 or fewer vehicles per hour considered to operate adequately, i.e. motorists will wait no more than two light cycles to get through the intersection.

When thresholds are exceeded, intersection operation starts to deteriorate exponentially.
Intersections in Study Area

K2C2 Study Area
Intersections
City of Cambridge CDD
## Critical Sums by Intersection 2030 K2C2 Proposal

<table>
<thead>
<tr>
<th></th>
<th>ECaPS 1998 Existing</th>
<th>2010 Existing Conditions</th>
<th>ECaPS 2020</th>
<th>2030 Buildout Existing Zoning</th>
<th>2030 Buildout K2C2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volumes Critical Sum</td>
<td>Total Volume Critical Sum</td>
<td>Volumes Critical Sum</td>
<td>Total Volume Critical Sum</td>
<td>Total Volume Critical Sum</td>
</tr>
<tr>
<td>1. Broadway/Galilei</td>
<td>2800 1020</td>
<td>2292 768</td>
<td>4330 1670</td>
<td>2692 896</td>
<td>2882 952</td>
</tr>
<tr>
<td>2. Broadway/Third</td>
<td>2280 1110</td>
<td>1964 1111</td>
<td>3130 1510</td>
<td>2400 1325</td>
<td>3106 1710</td>
</tr>
<tr>
<td>3. Main/Galilei/Vassar</td>
<td>1610 580</td>
<td>1764 711</td>
<td>2620 1050</td>
<td>2144 955</td>
<td>2424 1155</td>
</tr>
<tr>
<td>4. Binney/Third</td>
<td>2280 1200</td>
<td>2007 742</td>
<td>3740 1690</td>
<td>2594 980</td>
<td>3004 1136</td>
</tr>
<tr>
<td>5. Binney/First</td>
<td>1820 820</td>
<td>1311 590</td>
<td>3130 1260</td>
<td>1439 654</td>
<td>1520 694</td>
</tr>
<tr>
<td>6. Binney/Land</td>
<td>3150 1080</td>
<td>2382 654</td>
<td>4540 2010</td>
<td>3019 917</td>
<td>3211 991</td>
</tr>
<tr>
<td>7. Memorial Drive / Wadsworth</td>
<td>1270 700</td>
<td>1361 680</td>
<td>1460 780</td>
<td>1638 802</td>
<td>1687 812</td>
</tr>
<tr>
<td>8. Mass. Ave/Albany</td>
<td>1850 807</td>
<td>2122 1017</td>
<td>2158 1045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Main/Mass./Columbia/Sidney (Lafayette Sq.)</td>
<td>1460 762</td>
<td>1879 1025</td>
<td>2146 1143</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Intersections over 1500:

- Total intersection volumes increase 16-58% (avg 35%)
- Broadway/Third exceeds threshold (1,710)
# Critical Sums by Intersection

<table>
<thead>
<tr>
<th></th>
<th>2010 Existing Conditions</th>
<th>2030 Buildout Existing Zoning</th>
<th>2030 Buildout K2C2 with Enhanced TDM</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Total Volume</td>
<td>Critical Sum</td>
<td>Total Volume</td>
</tr>
<tr>
<td>1. Broadway/Galilei</td>
<td>2292</td>
<td>768</td>
<td>2692</td>
</tr>
<tr>
<td>2. Broadway/Third</td>
<td>1964</td>
<td>1111</td>
<td>2400</td>
</tr>
<tr>
<td>3. Main/Galilei/Vassar</td>
<td>1764</td>
<td>711</td>
<td>2144</td>
</tr>
<tr>
<td>4. Binney/Third</td>
<td>2007</td>
<td>742</td>
<td>2594</td>
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<tr>
<td>5. Binney/First</td>
<td>1311</td>
<td>590</td>
<td>1439</td>
</tr>
<tr>
<td>6. Binney/Land</td>
<td>2382</td>
<td>654</td>
<td>3019</td>
</tr>
<tr>
<td>7. Memorial Drive/Wadsworth</td>
<td>1361</td>
<td>680</td>
<td>1638</td>
</tr>
<tr>
<td>8. Mass. Ave/Albany</td>
<td>1850</td>
<td>807</td>
<td>2122</td>
</tr>
<tr>
<td>9. Main/Mass./Columbia/Sidney (Lafayette Sq.)</td>
<td>1460</td>
<td>762</td>
<td>1879</td>
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<td></td>
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</tbody>
</table>

**Preferred Scenario**
Vision for Kendall Square

“A dynamic **public realm** connecting diverse choices for living, working, learning, and playing to inspire continued success of Cambridge’s **sustainable, globally-significant** innovation community.”

K2 Planning Vision (Goody Clancy)

ECPT Planning Vision (CBT Architects + Planners)
## Elements of K2 Zoning Recommendations

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Housing</strong></td>
<td>• Required for large commercial development</td>
</tr>
<tr>
<td></td>
<td>• Affordable + middle-income units</td>
</tr>
<tr>
<td></td>
<td>• Incentive zoning payments ($12/SF non-res)</td>
</tr>
<tr>
<td><strong>Active Ground Floors</strong></td>
<td>• Required on 75% of major street frontage</td>
</tr>
<tr>
<td></td>
<td>• Retail &lt; 5,000 SF exempt from GFA limits</td>
</tr>
<tr>
<td><strong>Public Open Space</strong></td>
<td>• Part of interconnected network</td>
</tr>
<tr>
<td></td>
<td>• Major public space on Volpe site</td>
</tr>
<tr>
<td><strong>Innovation Space</strong></td>
<td>• At least 5% of office/lab for small companies</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>• Maximum parking ratios</td>
</tr>
<tr>
<td><strong>Sustainability</strong></td>
<td>• LEED Gold + energy, stormwater requirements</td>
</tr>
<tr>
<td><strong>Community Funds</strong></td>
<td>• $10 per SF office/lab for open space programming, transit improvements, workforce readiness</td>
</tr>
<tr>
<td><strong>Urban Design</strong></td>
<td>• Urban Design Guidelines</td>
</tr>
<tr>
<td></td>
<td>• PUD/Project Review Process</td>
</tr>
</tbody>
</table>
K2 Zoning Recommendations

Recommended additional development:
3 million SF commercial (approx.)
2 million SF residential (approx.)
+ 1-2 million SF retail, academic, other

Note: in addition to current zoning
K2 Zoning Recommendations: Current Status

MXD/CRA Area
1 million new SF (aprx.)
40% min. residential
Zoning under review

Volpe Area
3 million new SF (aprx.)
(2 million currently allowed)
40% min. residential
Zoning under review

MIT Area
1.5 million new SF proposed
450,000 SF new residential/dorm
Zoning adopted; development proposal under review

Broad Canal Area
No current zoning proposal
# PUD-KS: Initial Zoning Proposal

<table>
<thead>
<tr>
<th>Current Zoning</th>
<th>Proposed Zoning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Allowed “Base” FAR</strong></td>
<td>3.0 / 3.36 (w/inclusionary bonus)</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td>40% minimum</td>
</tr>
<tr>
<td><strong>Affordable Housing (as % of total housing)</strong></td>
<td>11.5% low-moderate (effective after bonus)</td>
</tr>
<tr>
<td><strong>Public Open Space (as % of parcel area)</strong></td>
<td>42% / 53% (7.5 acres)</td>
</tr>
<tr>
<td><strong>Parking</strong></td>
<td>Minimums</td>
</tr>
<tr>
<td><strong>Ground Floor Retail</strong></td>
<td>Incentivized</td>
</tr>
<tr>
<td><strong>Innovation Space</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Sustainability/Environmental</strong></td>
<td>LEED Silver</td>
</tr>
<tr>
<td><strong>Community Funds</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Government Facility</strong></td>
<td>Flexibility allowed</td>
</tr>
</tbody>
</table>
Height Limits: Current
Height Limits: Proposed
<table>
<thead>
<tr>
<th></th>
<th>Current Zoning</th>
<th>Proposed Zoning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site Area</strong></td>
<td>620,000</td>
<td>620,000</td>
</tr>
<tr>
<td><strong>Residential</strong></td>
<td>967,000 (min)</td>
<td>1,116,000 (min)</td>
</tr>
<tr>
<td><strong>Office / Lab</strong></td>
<td>1,086,000 (max)</td>
<td>1,632,000 (max)</td>
</tr>
<tr>
<td>(not including Innovation Space)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retail</strong></td>
<td>50,000</td>
<td>140,000</td>
</tr>
<tr>
<td><strong>Innovation Space (min)</strong></td>
<td>0</td>
<td>84,000</td>
</tr>
<tr>
<td><strong>Total Private Development</strong></td>
<td>2,103,000</td>
<td>2,972,000</td>
</tr>
</tbody>
</table>

*Figures in Square Feet of Gross Floor Area

*ALL FIGURES APPROXIMATE*
## Benefits of Initial PUD-KS Zoning Proposal

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>• 1,000 units minimum (approx.)</td>
</tr>
<tr>
<td></td>
<td>• 100 affordable, 50 middle-income (approx.)</td>
</tr>
<tr>
<td></td>
<td>• $20+ million in total incentive zoning payments</td>
</tr>
<tr>
<td>Active Ground Floors</td>
<td>• Continuous active use on Third Street, Broadway</td>
</tr>
<tr>
<td></td>
<td>• Up to 140,000 SF ground-floor retail</td>
</tr>
<tr>
<td>Public Open Space</td>
<td>• At least 3.5+ acres Public Open Space</td>
</tr>
<tr>
<td></td>
<td>• Connections to adjacent streets and spaces</td>
</tr>
<tr>
<td>Innovation Space</td>
<td>• 84,000 SF (approx.) at full commercial buildout</td>
</tr>
<tr>
<td>Transportation</td>
<td>• Cap on total parking</td>
</tr>
<tr>
<td>Sustainability</td>
<td>• LEED Gold + energy, stormwater requirements</td>
</tr>
<tr>
<td></td>
<td>• Additional requirements from Net Zero Plan</td>
</tr>
<tr>
<td>Community Funds</td>
<td>• $16+ million total for open space programming, transit improvements, workforce readiness</td>
</tr>
<tr>
<td>Urban Design</td>
<td>• General K2 Design Guidelines</td>
</tr>
<tr>
<td></td>
<td>• Site-Specific PUD-KS Urban Design Guidelines</td>
</tr>
</tbody>
</table>
### Outstanding zoning & urban design issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| Housing                            | • Increased requirements for affordability?  
• Overall amount required?                                                          |
| Open Space and Public Amenities    | • Required/encouraged size and configuration?  
• Relationship between Federal and City sites?  
• Requirements/guidelines for intent, purpose and character of public space? |
| Retail Affordability and Diversity | • Expand diversity of required/encouraged uses – e.g., grocery, department stores, recreation, child care, indoor public space |
| Built Form, Height and Urban Design| • Greater flexibility in massing and orientation of buildings?  
• Develop an Urban Design Framework                                                                                           |
## Parallel Approaches

<table>
<thead>
<tr>
<th>Zoning Requirements</th>
<th>Design Guidelines/Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sets overall “boundaries” of allowed development plan</td>
<td>• Sets aspirational goals and design objectives</td>
</tr>
<tr>
<td>• Relies on strict, measurable requirements</td>
<td>• Illustrations, examples, suggestions for how the objectives can be met</td>
</tr>
<tr>
<td>• Incentives may encourage additional public benefits</td>
<td>• Flexibility to consider alternative options during development review process</td>
</tr>
<tr>
<td>• Flexibility only where it is expressly allowed</td>
<td></td>
</tr>
</tbody>
</table>