Envision Cambridge Advisory Committee
May 17, 2017
Agenda

Project Update

Cambridge and its Corridors
• Corridor considerations
• Initial corridor development analysis
• Possible Futures for the Corridors: What ifs?

Draft Goals for Urban Form

Next Steps
Working Groups

Six **topic-focused working groups** will provide input to the ECAC for plan development.

- **ENGAGEMENT WORKING GROUP**
- **ALEWIFE WORKING GROUP**
- **HOUSING WORKING GROUP**
- **ECONOMY WORKING GROUP**
- **MOBILITY WORKING GROUP**
- **CLIMATE AND ENVIRONMENT WORKING GROUP**
Alewife Quadrangle: Revised Scenario as presented 4/27/2017

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
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<tbody>
<tr>
<td>Total GFA at 100% buildout</td>
<td>5.61m SF</td>
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<tr>
<td>District FAR</td>
<td>1.56</td>
</tr>
<tr>
<td>Total GFA at 60% buildout</td>
<td>4.52m SF</td>
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<tr>
<td>New housing</td>
<td>1,080 units</td>
</tr>
<tr>
<td>Office / lab space</td>
<td>1.78m SF</td>
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<tr>
<td>Ground floor retail*</td>
<td>31,100 SF</td>
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<tr>
<td>Industrial space</td>
<td>387,120 SF</td>
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*does not include zone for accessory retail in light industrial spaces
Food Manufacturing

4% job growth nationally, 2011-2015

Only 38% of regional demand for beverage manufacturing is met by local companies


Fruit and Vegetable Preserving (Pictured: Tiptree Jam Factory in England. Source: BBC.com.)

Grain Milling
Confectionery Product Manufacturing
Dairy Product Manufacturing

Fabricated Metal Product Manufacturing

2% job growth, 2011-2015

Only 53% of regional demand for fabricated metal manufacturing is met by local companies

Machine shops (Pictured: Student Machine Shop at UC Berkeley. Source: Physics@ Berkeley)

Makerspace (Pictured: The Foundery in Baltimore, which trains residents for manufacturing jobs. Source: Technically Baltimore)

Forging and Stamping
Architectural and Structural Metals Manufacturing

Data Sources: National job growth rates calculated from U.S. Census Bureau LEHD. All other stats are calculated using EMSI.
Beverage Manufacturing

4% job growth nationally, 2011-2015

Only 41% of regional demand for beverage manufacturing is met by local companies

Medical Equipment and Supplies Manufacturing

Level employment nationally, 2011-2015

Only 37% of regional demand for medical manufacturing is met by local

Data Sources: National job growth rates calculated from U.S. Census Bureau LEHD. All other stats are calculated using EMSI.
The Corridors

Mass. Ave. and Cambridge St., Cambridge’s commercial corridors, are the center of the city’s civic, social, and cultural life. They also provide the walkable amenities for everyday life.

*How do we want to manage growth on the corridors?*
This pattern resonates among present-day land uses and enables residents to be well served by neighborhood retail.

85% of the buildings are within a 10 minute walk to a mixed-use corridor.

Source: City of Cambridge CDD, Envision Cambridge Analysis. Retail clusters are any group of five or more buildings with retail space without a distance of 400 ft. or greater between those buildings. List of land use codes used to determine retail space available upon request.
**Places:** Cambridge is defined by the relationship of its residential neighborhoods to university campuses and mixed-use commercial centers and corridors.
Commercial and mixed use: FAR < 1.5 or height < 40 ft.

Not including parcels with buildings built after 1995 and parcels with projects in the development pipeline.

Source: Cambridge CDD and Assessing Department. Pipeline as of December 2016.
Inman Representative Parcels

Least Likely to Be Developed

Likely to be Developed

Most Likely to be Developed
Inman Square Corridor

Approximately 160 units and 79,800 SF of retail generated by optimal stick-built construction
Housing in the pipeline and tested during the planning process

Total Development Log: ~5,200 units

Quadrangle*, Porter Square, Inman
Estimate: ~1,650 units

Quadrangle Development Log: ~90 units
Quadrangle Scenario: ~1,220 units*

Porter Square Scenario: ~270 units

Inman Square Scenario: ~160 units

North Point Development Log: ~1,800 units

K2C2 area Development Log: ~1,550 units

Development Log for the Rest of Cambridge: ~1,760 units

Source: City of Cambridge CDD Development Log; Envision Cambridge Analysis. Total number reflects permitted projects in specified areas and all development log projects in unspecified as of December 2016.

* Quadrangle scenario housing units estimate is from the April 27, 2017 Alewife Working Group presentation (this process is ongoing) and includes new information about a proposed project at 55 Wheeler (530 units). The total number of 1,220 units reflects an estimated 60% buildout by 2030.
Housing needs based on projections

Keeping up with projected population growth is not the main driver of development policy on the corridors

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<tr>
<td>Total population</td>
<td>105,162</td>
<td>110,623</td>
<td>118,625</td>
<td>123,000</td>
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<tr>
<td>Population change 2010 - 2030</td>
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<td>5,461</td>
<td>13,463</td>
<td>18,208</td>
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<th>Residential forecast</th>
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<td>New Housing Demand (A)</td>
<td></td>
<td>3,121</td>
<td>7,693</td>
<td>10,405</td>
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<tr>
<td>Housing stock added since 2010 and in development pipeline (B)</td>
<td>8,486</td>
<td>8,486</td>
<td>8,486</td>
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<tr>
<td><strong>Housing Deficit (C = A – B)</strong></td>
<td></td>
<td>0</td>
<td>0</td>
<td>1,919</td>
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<tr>
<td>Total housing GSF needed (C \times 1,000 \text{ SF})</td>
<td>1,096,571</td>
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Assumptions: Average household size - 1.75 persons; Average net household area - 1,000 SF
What role could the corridors play in…

- Help meet the city’s housing needs
- Encourage people choose sustainable transportation modes
- Enhance connections between neighborhoods and between residences and jobs
- Support local independent retail
- Create employment and entrepreneurship opportunities
- Become the hubs for the civic, social, and cultural life of the city
- Provide public civic spaces for the community to gather
What people said about the corridors

**Land Use: Mix of uses**
- Many people want more retail, especially neighborhood-serving retail (e.g., dry cleaners).
- Some residents suggested that the corridors might be the place to add significant housing. Others expressed concern about maintaining the urban character of the city with new development.
- Residents asked about the large-scale commercial buildings, and whether these could be made more welcoming.

**Urban Form: Character of buildings, public spaces, and streets**
- Residents and workers like the “human scale” of city’s fabric and how knowable the city is.
- The squares are central to Cambridge’s identity, and the corridors tie the squares together. However, the character of the corridors is uneven, and does not match the liveliness or quality of the squares.

**Mobility: Ways of getting around**
- Residents want the corridors to become better places for biking and walking, while also increasing transit capacity.

“**I could envision 5-story buildings where there are now one-story retail only buildings on Mass Ave.**”
- Community member via online survey

“**More units of affordable housing BUT neighborhood-appropriate design.**”
- Community member via online survey

“**Make buildings that are beautiful to look at and not just a large blob that looks like a hospital in the middle of a neighborhood.**”
- Community member via online survey

“**Encourage more options to cross neighborhood boundaries. While I love my part of town, it's very rare that I feel it's worth the hassle of trying to cross Mass Ave to get to other parts of town.**”
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“**Neighborhood streets will have better public transportation linking Rte 2 and Mass Ave.**”
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Intersection Design Principles

Accessible for All
Universal accessibility design principles should guide all aspects of intersection design, ranging from geometry to signal timing with a commitment to achieving the best outcome for all users within the constraints of each site.

Ease of Maintenance
Intersection materials should be long-lasting and sustainable, requiring a low amount of maintenance. Painters are not allowed in crosswalks, and a clear accessible path should be provided across intersections.

Reclaiming Space
Intersections that contain wide, underused areas of pavement not necessary for the efficient movement of motor vehicles provide opportunities to reclaim street space for pedestrians, transit users, and bicyclists, as well as green space.

Minimum Signal Cycle Lengths
Signal cycle lengths should be minimized to reduce delay for all users. As technology advances, traffic signalization should evolve towards a smarter, more equitable system that passively detects pedestrians, bicyclists, transit, and motor vehicles.

Traffic Controls
Intersections should be evaluated to provide the most efficient and cost-effective method of control, including stop and yield-controlled, as well as signalized intersections.

Traffic Reducers
Coordinated signal timing can reduce energy consumption and emissions and should be considered in every project, but should not cause excessive delay to environmentally-friendly modes of travel such as walking and bicycling.

Stormwater Management
Grass street elements should be incorporated whenever possible to reduce runoff and the amount of impermeable surface at intersections and street corners. Greenscape should be incorporated not only to recharge groundwater, but to filter pollutants and improve air quality.

Smart Tags
"Tags" are an evolving technology that provide information to people via mobile devices with Internet access, which are particularly useful for people walking or using transit. Designs should consider including tags to provide way-finding information, as well as details about local facilities and businesses.

All-Weather Access
Intersections should function during all weather conditions, including rain and snow. Designs should prevent pooling of precipitation at ramps, and provide storage space for snow during winter.

Obeying the Law
Intersections should facilitate predictable movements, and encourage people to obey all traffic laws, in particular laws that impact the safety of non-motorized users. Traffic conflicts should be designed to create a consistent, predictable manner to help encourage safe behaviors.

Reduce Clutter
Intersection elements, such as signs and light poles, utility poles, hydrants, traffic control devices, etc., must be thoughtfully laid out to maximize accessibility and functionality, and utilities should be accessible for maintenance without obstructing pedestrian crossings.

Balancing Users' Needs
Intersection design should balance the safe and efficient movement of non-motorized users with the efficient movement of motor vehicles. Pedestrians and bicyclists are susceptible to far greater injuries in the event of a crash with a motor vehicle. As pedestrians are the most vulnerable roadway user, intersection designs must prioritize their needs. This design principle must inform all aspects of intersection design, from determining the number of lanes, to the configuration of crosswalks, to the design of traffic controls.

Sensors
Opportunities should be explored to install sensors to monitor and study operations, traffic conditions, modal counts, and air quality to improve efficiency.

The Boston Public Works Department (BPS) and Boston Transportation Department (BTD) are responsible for approving all intersection designs. The Public Improvement Commission (PIC) must approve all changes made to city-owned right-of-ways. Intersection designs may also require coordination with the Boston Fire Department, Emergency Medical Services (EMS), and the Mayor’s Commission for Persons with Disabilities.
Past patterns of development have resulted in competing types of urban fabric where corridors meet neighborhoods.
Corridor Development Guidelines – City of Toronto

Source: Avenues & Mid-Rise Buildings Study, City of Toronto, May 2010
Corridor Development Guidelines – City of Toronto

Source: Avenues & Mid-Rise Buildings Study, City of Toronto, May 2010
Corridors
4 stories with active ground-floor

Continuous active ground floor (retail / lobbies)

Context-sensitive development
Corridors
6 stories with active ground-floor

higher-density, market-ready building type
(5-over-1 construction)

Continuous active ground floor (retail / lobbies)
Corridors
6 stories with setback, with active ground-floor

Continuous active ground floor (retail / lobbies)

Contextually-sensitive, market-ready building type (5-over-1 construction)
Corridors
Public realm that supports, and is supported by, the new growth
Questions for Discussion:
How can we shape the corridors to achieve our goals and values?

Character and form
Which parts of Mass Ave or Cambridge Street are walkable and have a coherent and compelling character? Which stretches are unappealing and poorly defined? What can we use as models, from Cambridge and other cities?

Public open space
What public spaces on the corridors are underutilized, or could be improved? What types of public spaces on the corridors would you like that Cambridge currently does not have?

New Development
What qualities or features should new development along the corridors include? Would you consider denser and/or taller development in exchange for a continuous active edge along the sidewalk, better quality, and/or more context-sensitive design?

Regulatory Approaches
What rules would be essential for new development along the corridors? Are you familiar with form-based zoning?

Urban Form Areas of Focus
In addition to the corridors and Alewife, are there other areas of the city where the urban form of new development should be considered?
Draft Goals for Urban Form

• **Goal 1: Strengthen the existing patterns of the city:** Reinforce the historical structure of the city - residential neighborhoods complemented by key corridors, squares, and open spaces – with land use regulations, the appropriate densities, and a coordinated mobility plan.

• **Goal 2: Achieve harmonious transitions between neighborhoods:** Create a harmonious relationship between new development and the existing fabric with a particular focus on the seams between the corridors and commercial centers and abutting residential neighborhoods.

• **Goal 3: Direct new development to be human-scaled:** Shape new development so that it balances the desire for human-scaled design and the larger footprints required by specific uses and favored by the real estate market.

• **Goal 4: Ensure a high quality urban environment:** Develop strategic regulations that ensure that private development contributes to the overall quality of the urban environment through the introduction of publicly accessible open spaces and active ground floor uses.

• **Goal 5: Maintain and enhance the public realm:** Find ways to better use public space, such as sidewalks and the right of way, to encourage social interaction and improve the environment.