Citywide Planning and Alewife Planning

Advisory Committee

January 18, 2017
Agenda

• Core Values and Vision: Citywide and Alewife
• Why is Alewife an early focus of the citywide plan?
• Alewife Planning Scenarios
  • What to consider when evaluating scenarios
  • The context in which we are planning
  • Urban design framework
• Scenario development
  • Baseline
  • Optimized Baseline
  • Mixed-use Residential
  • Mixed-use Commercial
  • Mixed-use Industrial
• How the scenarios compare
• Next Steps
• Questions for Discussion
The Core Values

Vision

- Livability
- Diversity and Equity
- Economic Opportunity
- Sustainability and Resilience
- Community Health and Wellbeing
- Learning

Alewife Visioning Workshop, July 21, 2016
A Changing Cambridge

Citywide Vision and Alewife Vision

What we want to be

“Cambridge is a forward-thinking, welcoming, and diverse city. We enjoy a high quality of life and thrive in a sustainable, inclusive, and connected community.”

“Alewife should be a sustainable, resilient, mixed-used district with convenient and safe connections within the neighborhood and to the rest of the city along with amenities that support interaction and social ties among its residents.”

Note: Vision statement developed from public workshop feedback, comments from Alewife Working Group and EC Advisory Committee, and general feedback from the Mobile Engagement Station, online surveys, and other engagement activities and workshops.
Why is Alewife an early focus of the Citywide Plan?

Community members agree that Alewife needs to be improved. Some of the concerns include the quality and appropriateness of the urban form, the lack of connectivity, and resilience from the impacts of climate change and other stresses.

Alewife, and in particular the Quadrangle, is one of the few areas in the city where significant change can be considered and supported.
Setting the Larger Context: Parcels by Land Use

Cambridge’s diverse and socially-rich residential neighborhoods are bounded by commercial corridors and institutions.
Commercial and Mixed-used parcels

The commercial and mixed-use parcels are located along corridors or distinct pockets in East Cambridge, Kendall Square, and Alewife.

Source: Cambridge CDD and Assessing Department
Commercial and Mixed-use: FAR < 1.5 or Height < 40 ft.

Some of these parcels are built to a height and density that do not contribute to the surrounding urban form.
Corridors
The Quadrangle, Alewife
Study Areas

The corridors and Alewife are two areas of the City that warrant a comprehensive study.
Alewife Planning

What is a scenario?
Planning scenarios are ways of envisioning multiple futures. Different inputs—such as density, land use, and the street network—can produce different outcomes. The scenarios will guide decisions about future land use, regulations, and economic development strategies.

How will Alewife scenarios inform the citywide plan? 
The Alewife scenarios will inform the planning for the rest of the city. For example, if industrial uses are deemed more desirable than housing in Alewife, then the citywide plan might encourage more housing along the corridors.

The draft of the Alewife plan is expected late spring/early summer 2017
Alewife is a mosaic of privately owned parcels

The 99 parcels in the Quadrangle are owned by 48 different owners.

Source: City of Cambridge Tax Assessor and Property Database 2016
The Quadrangle has the highest propensity to change in the next 15-20 years.

The Triangle is comprised of new residential buildings, permitted projects, and market-viable office buildings.

The substation will remain for the foreseeable future.

Envision Cambridge will do a framework plan for the shopping center later in the process.

The Cambridge Highlands buffer.

City of Cambridge affordable housing.

Source: City of Cambridge Development Log Current Edition (June 06, 2016)
A number of large projects have been built in recent years.

**Cambridge Discovery Park**
- Hotel (150 rooms)
- Office/ R&D (132,000 sq ft)
- Office/ R&D (96,000 sq ft)
- Parking Garage (380 spaces)

**Residential**
- 130 Cam. Dr. (220 units)
- Parking (216 spaces)

**Residential**
- 88 Cam. Dr. (254 units)
- Parking (185 spaces)

**Residential**
- 95 Fawcett St (44 units)
- Parking (44 spaces)

**Residential**
- 75 New St (93 units)
- Parking (94 spaces)

**FUTURE DEVELOPMENT:**
- Residential --- 611 units
- Hotel --- 150 rooms
- Office --- 370,000 (sq. ft.)
- Parking --- 825 spaces

**Large Scale Development after 1995**
- Permitted Projects

Source: City of Cambridge Development Log Current Edition (June 06, 2016)
Scenarios focus on the Quadrangle
What we heard

Alewife Visioning from Working Group and Workshops

Livability
- Enhance mobility while moving to/through the area
- Increase public amenities

Diversity and Equity
- Address equity in transportation costs
- Expand access to public space and amenities

Sustainability and Resilience
- Study what an appropriate mix of development might be, to address concerns about the current emphasis on housing
- Examine how well-designed density can improve sustainability
- Explore the best approach to building in a flood-prone area

Economic Opportunity
- Expand affordable neighborhood retail and workspaces availability for new businesses

Community Health and Well-being
- Foster a sense of community
- Provide community spaces for informal interaction
- Shift from auto-oriented to pedestrian-oriented design

Learning
- Emphasize non-school forms of learning
- Leverage important ecological spaces for learning

Note: This is a summary of feedback from the July 21 Visioning Workshop. Participants were asked to respond to opportunities and challenges in Alewife through the core values in small groups.
What to consider when evaluating scenarios: Environment

**Resilience from sea level rise, storm surge, and precipitation:** Reduced vulnerability

**Energy:** Reduced GHG emissions and enhanced resilience

**Water:** Water conservation, clean waterways, and reliable drinking supply

**Materials and Waste:** Soil remediation, zero waste goals, circular economy
What to consider when evaluating scenarios: Mobility

**Vehicular trips:** Managed number of auto of trips generated and/or vehicle trip reduction

**Transit:** Increased number of transit users and transit options

**Active Transportation:** Increased number of people biking and walking

* Based on interpretation of 2010 CTPS regional travel demand model data
What to consider when evaluating scenarios: Housing

**Housing units:** Number of housing units created to meet citywide housing needs

**Affordable units:** Number and type (e.g., 3-bedroom) created

**Housing market:** Potential effect of new housing growth on the overall Cambridge housing market
What to consider when evaluating scenarios: Jobs

**Commercial space and jobs:** Increased space for growing economic sectors

**Access to jobs:** Skill and education level needed for different economic sectors
What to consider when evaluating scenarios: Revenue and Fiscal Impacts

**Tax revenue:** Increased commercial or residential tax base, which supports robust city services, schools, open space improvements, etc.

**Fiscal Impacts of Development:** Increased cost of service for new residents and workers

**Funding of infrastructure:** Adequate revenue from new development to contribute to the funding of critical infrastructure (e.g., bridge linking the Quadrangle to the Triangle, district energy plant, storm water infrastructure)
What to consider when evaluating scenarios

Environment
- Resilience
- Energy, GHG
- Water
- Materials & Waste

Mobility
- Vehicular trips
- Transit trips
- Active Transportation

Housing
- Housing units
- Affordable units
- Housing market

Jobs
- Commercial space and jobs
- Access to jobs

Tax revenue and fiscal impacts
- Tax revenue of commercial vs residential development
- Fiscal impacts of growth
- Funding of infrastructure
Urbanism of recent developments

Projecting development trends under existing regulations up to full buildout → Baseline

Key assumptions

- Assume same development typologies (maxed-out stick-built residential and 85’ life science / R&D commercial)
- Assume full build-out per special permit on all sites
- Projected use mix reflects trends in recent construction and pipeline development (i.e., approximately 65% residential development and 35% commercial development by built floor area)

Notes: Recent construction includes projects in the Triangle and Quadrangle built since 2005. Development pipeline derived from CDD development log as of Nov 2015
Scenario Building Prototypes

Residential Prototype

- Typical Floorplate: 14,000-20,000 SF
- Minimum Floorplate: 10,000 SF
- Typical Building Width: 65 Feet
- First habitable floor raised 4’ for flood protection, with parking below

Commercial Prototype

- Typical Floorplate: 25,000-32,000 SF
- Minimum Floorplate: 20,000 SF
- Typical Building Width: 120 Feet
- First habitable floor raised 4’ for flood protection, with parking below

Active Uses

- Cambridge Discovery Park
  - Hotel (150 rooms)
  - Office/ R&D (132,000 sq ft)
  - Office/ R&D (96,000 sq ft)
  - Parking Garage (380 spaces)

Residential

- 88 Cam. Dr. (254 units)
- Parking (185 spaces)
Current Zoning

Office 1 (AOD-3,4)

- Rear setback (H+L)/4 or 20’ from the rear lot line
- Side yard setback (H+L)/5
- Front setback (H+L)/4 or 10’ from the centerline of the street
- Maximum Height: 35’/65’

Industrial B-2 (AOD 1,2)

- Front setback 15’
- Maximum Height: 35’/65’
Baseline: Testing capacity and urbanism under current zoning

Zoning Summary

**IB-2**: 15’ front setback with no required rear or sideyards. Under special permit:
- Max. FAR: 1.5
- Max. Height Non-residential: 55’
- Max. Height Residential: 65’

**O-1**: All setback determined by formula relating to the building’s dimensions. Under special permit:
- Max. FAR Non-Residential: 1.5
- Max. FAR Residential: 2.0
- Max. Height Non-residential: 70’
- Max. Height Residential: 85’

Development yields
- ~2,400 housing units
- ~1.75m SF office / lab space
- 575 existing housing units
- 610 pipeline housing units

District FAR = 1.30
Current conditions: Urbanism challenges

- Long and monotonous street facades
- Required elevated ground floor elevation limits access to buildings and further separates lobbies from the public realm
- Required front yards are suburban in character and separate ground floor uses from the public realm
- The existing side yard requirement breaks up the pedestrian experience with a no-man’s land of service functions that make each development an independent enclave
- Lack of street hierarchy or accommodation of all transit modes.
Urban design framework: Developing scenarios

Find a systemic solution to the impacts of climate change by aligning with the preparedness planning process

- Build to an elevation of 4’ or under for the first habitable floor level, which reduces flood risk from 2070 SLR/SS

Create a mixed-use walkable neighborhood that also promotes bicycles and transit

- Create a distributive multimodal transportation network by “completing the street grid” and making better connections to the T
- Create a “there there” for daytime and evening populations and to improve the “quality of address”
- Achieve a scaled transition of new development towards Cambridge Highlands

In order to realize our vision of transforming Alewife into a resilient neighborhood with strong amenities and sense of place, we need to retain a sufficient amount of value in order to encourage redevelopment.
Urban design framework: New street connections

Guiding considerations:

- Build on the recommendations of the Alewife Concord Study (2005)
- Better service the neighborhood by creating a distributed network
- Improves the “quality of address” for future development.
Urban design framework: A network of green infrastructure

- Proposed Green Link envisions a land-efficient open space network that links the Alewife T to Fresh Pond
- The path could link to the pedestrian/bike bridge to Alewife T station
- Further study will explore the potential to tie this to a district-wide storm water strategy
Urban design framework: A network of green infrastructure

Green Link and mid-block connection precedents
Urban design framework: Respond to scale of neighboring context

- Permitted Projects
- Future Projects
- Parcels not part of this analysis
- Open Space
- Midblock Stormwater Gardens
- Potential 55’ Residential Overlay
- Potential 200’ Commercial Overlay
- District Parking Garage
- District Energy Plant
- New Bicycle/Pedestrian Connections
- Bicycle Lanes
Street Types: The Urbanism of “A” streets

Zoning regulations

- First habitable floor at 4’
- All parking must be below 4’ elevation and covered by a building or landscaped deck
- Continuous 12’ wide raised platform at 4’ elevation for all of the A Streets
- Car and service access only permitted from B Streets
- Zero lot lines required for the first 65’ off of the front lot line, 30’ side yard set back thereafter.
- 30’ rear yard setback
- Opening between buildings of between 30-45’ required for frontages longer than 250’
# Scenario development

**Goals:** Test the implications of planning choices and enable a discussion about tradeoffs.

**Methodology:** Scenarios are structured “thought experiments” backed by data-driven assumptions and tested through analytical frameworks.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Optimized Baseline</th>
<th>Mixed-use residential (+ option with high-rise overlay)</th>
<th>Mixed-use commercial (+ option with high-rise overlay)</th>
<th>Mixed-use industrial</th>
</tr>
</thead>
</table>
| Impetus  | Create better urbanism at the same density and use-mix as currently allowed | \- Significantly increase housing  
\- Incentivize less suburban development  
\- Fewer vehicular trips generated | \- Create better urbanism with the same use-mix at a higher density  
\- Increase the commercial tax base  
\- Create jobs  
\- Minimize residents in the floodplain | \- Provide low-barrier-to-entry jobs for residents  
\- Avoid building residential in floodplain  
\- Add minimal vehicular traffic (trade-off of higher percentage of truck traffic) |

All scenarios will be evaluated by considering:
Optimized Baseline: Same urbanism, ~existing FAR

Guiding considerations

- Projected use mix reflects trends in recent construction and pipeline development
- Tests if better urbanism can be created by requiring zero lot lines and no side yards.
Optimized Baseline: Typical Block

- Mid-block open space network
- Green spaces connect to edge of B Streets. 30" side yard setback between parcels on B Streets.
- B Street Front Lot Line Setback is 8" for a planting zone.
- Parking and service access only on B Streets.
- Maximum height of 70' for residential and 85' for commercial development.
- Zero lot lines for front and sides within 65' of the front lot line.
- 30' side yard setback beyond the first 65' in depth from the front lot line.
- A Street Front Lot Line Setback is 12" to account for a required 12' deep, 4' high plinth that meets the back of the sidewalk.
- Sites longer than 250' require a 30'-45' wide penetration to the rear lot line. The gap must be located a minimum of 30' away from a side lot line.
Draft Alewife Scenarios

Optimized Baseline: Ground-floor Program

Development yields
- ~2,800 housing units
- ~1.51m SF office/lab space
- ~142,000 SF of ground floor retail
- 575 existing housing units
- 610 pipeline housing units

District FAR = 1.50
Draft Alewife Scenarios

Baseline: Test-fit Comparison

Development yields
- ~2,400 housing units
- ~1.75m SF office / lab space
- 575 existing housing units
- 610 pipeline housing units

District FAR = 1.30

- Commercial
- Residential
- Parcels less likely to be developed
- Existing Development
- Permitted Projects
- Future Projects
### Optimized Baseline

<table>
<thead>
<tr>
<th>Environment</th>
<th>Mobility</th>
<th>Housing</th>
<th>Jobs</th>
<th>Tax revenue and fiscal impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Closest to the baseline in terms of annual energy consumption, GHG emissions, and waste generation</td>
<td>• The high residential density in this scenario maximizes trip reductions compared to the baseline</td>
<td>• Generates approximately the same number of housing units as the baseline</td>
<td>• Creates slightly fewer jobs than the baseline and the fewest total jobs than any scenario</td>
<td>• Increases residential population and need for city services</td>
</tr>
<tr>
<td>• Greatest generation potential from solar PVs relative to annual consumption</td>
<td>• Creates clear hierarchy of A and B streets</td>
<td></td>
<td></td>
<td>• Increases tax base, not as much as commercial uses</td>
</tr>
<tr>
<td>• Center-of-block open space serves as potential storm water infrastructure</td>
<td></td>
<td></td>
<td></td>
<td>• Could fund critical infrastructure, such as bridge</td>
</tr>
</tbody>
</table>
Mixed-use Residential

Guiding considerations

- Projected use mix reflects trends in recent construction and pipeline development
- Maximizes housing creation
- Minimizes impacts on mobility by as the primary land use is residential
- Creates a retail district to support residential uses along Fawcett Street (east-west) with the possibility of additional distributed ground floor retail in residential blocks.
Mixed-use Residential: Street Types

Permitted Projects
- Recently completed (since 1995)
- New Bicycle/Pedestrian Connections
- Permitted Projects

Setbacks

Open Spaces

A Streets

B Streets
Mixed-use Residential: Typical Block

- Maximum height of 70’ for residential and 85’ for commercial development
- Zero lot lines for front and sides within 65’ of the front lot line.
- 30’ side yard setback beyond the first 65’ in depth from the front lot line.
- A Street Front Lot Line Setback is 12” to account for a required 12’ deep, 4’ high plinth that meets the back of the sidewalk.
- Sites longer than 250’ require a 30’-45’ wide penetration to the rear lot line. The gap must be located a minimum of 30’ away from a side lot line.

Mid-block open space network

Green spaces connect to edge of B Streets. 30’ side yard setback between parcels on B Streets.

B Street Front Lot Line Setback is 8” for a planting zone.

Parking and service access only on B Streets.
Mixed-use Residential: Ground-floor Program

Development yields

- ~4,000 housing units
- ~2.61m SF office / lab space
- + 390,000 SF office / lab (with HRO)
- 126,000 SF of ground floor retail
- 575 existing housing units
- 610 pipeline housing units

District FAR = 2.05

District FAR = 2.37 (with HRO)

- Retail (Mixed-use)
- Commercial
- Residential
- New Bicycle/Pedestrian Connections
- Bicycle Lanes
- Open Space
Draft Alewife Scenarios

Mixed-use Residential: Ground-floor Program

Potential District Energy Plant

Potential District Parking Garage Locations

Central Square District FAR = 2.20

<table>
<thead>
<tr>
<th>Benchmark neighborhoods</th>
<th>Estimated average FAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Square, Cambridge</td>
<td>2.20 (^1)</td>
</tr>
<tr>
<td>North Point, Cambridge</td>
<td>2.66 (^2)</td>
</tr>
<tr>
<td>Assembly Row, Somerville</td>
<td>2.90 (^3)</td>
</tr>
</tbody>
</table>

Source: \(^1\) City of Cambridge 2015 Tax Assessor and Parcel Data, \(^2\) Request for Special Permit Amendments Final Development Proposal NorthPoint (PB #179), \(^3\) [http://bostinno.streetwise.co/2014/11/21/what-is-assembly-row-somerville](http://bostinno.streetwise.co/2014/11/21/what-is-assembly-row-somerville)
Mixed-use Residential: Typical Block

- **Mid-block open space network**
- **Green spaces connect to edge of B Streets. 30' side yard setback between parcels on B Streets.**
- **B Street Front Lot Line Setback is 8’ for a planting zone.**
- **Parking and service access only on B Streets.**

**Maximum height of 70’ for residential and 85’ for commercial development**

**Zero lot lines for front and sides within 65’ of the front lot line.**

**30’ side yard setback beyond the first 65’ in depth from the front lot line.**

**A Street Front Lot Line Setback is 12” to account for a required 12’ deep, 4’ high plinth that meets the back of the sidewalk.**

**Sites longer than 250’ require a 30’-45’ wide penetration to the rear lot line. The gap must be located a minimum of 30’ away from a side lot line.**
**Mixed-use Residential: Typical Block - High-rise Overlay (200’)**

- Only the short ends of towers can face streets and they need to be set at least 5' back from the height datum of the rest of the district (at 85').
- Towers are not permitted at corners because the long edge of towers cannot face a street.
# Draft Alewife Scenarios

## How does this compare to the baseline?

### Mixed-use Residential

**And Mixed-use Residential with High-rise Overlay**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>- These scenarios have the highest water demand due to a higher proportion of residential land uses</td>
<td>- The high residential density in this scenario maximizes trip reductions compared to the baseline</td>
<td>- Generates the highest number of residential units</td>
<td>- Creates more jobs than the baseline</td>
<td>- Increases residential population and need for city services</td>
</tr>
<tr>
<td></td>
<td>- Creates a clear hierarchy on A and B streets</td>
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<td>- Increases tax base, but not as much as commercial uses</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>- Could fund critical infrastructure, such as bridge</td>
</tr>
</tbody>
</table>
Mixed-use Commercial: Same urbanism, commercial emphasis

Guiding considerations
- Maximize fiscal revenue by increasing the commercial tax base
- Promotes high "energy-density" uses that could support a co-gen plant
Mixed-use Commercial: Typical Block

- Mid-block open space network
- Green spaces connect to edge of B Streets. 30' side yard setback between parcels on B Streets.
- B Street Front Lot Line Setback is 8” for a planting zone.
- Parking and service access only on B Streets
- Maximum height of 70’ for residential and 85’ for commercial development
- Zero lot lines for front and sides within 65’ of the front lot line.
- 30’ side yard setback beyond the first 65’ in depth from the front lot line.
- A Street Front Lot Line Setback is 12” to account for a required 12’ deep, 4’ high plinth that meets the back of the sidewalk
- Sites longer than 250’ require a 30’-45’ wide penetration to the rear lot line. The gap must be located a minimum of 30’ away from a side lot line.
Mixed-use Commercial: Typical Block – High-rise Overlay (200’)

Only the short ends of towers can face streets and they need to be set at least 5’ back from the height datum of the rest of the district (at 85’).

Towers are not permitted at corners because the long edge of towers cannot face a street.
Mixed-use Commercial: Ground-floor Program

Development yields
- ~1,800 housing units
- ~5.9m SF office / lab space
- + 860,000 SF office / lab (with HRO)
- 126,000 SF of ground floor retail
- 575 existing housing units
- 610 pipeline housing units

District FAR = 2.34
District FAR = 2.64 (with HRO)

Note: HRO refers to high rise overlay
Draft Alewife Scenarios

Mixed-use Commercial: Ground-floor Program

Central Square
District FAR = 2.20

District FAR similar to Central Square

- Retail (Mixed-use)
- Commercial
- Residential
- New Bicycle/Pedestrian Connections
- Bicycle Lanes
- Open Space

Note: HRO refers to high rise overlay
How does this compare to the baseline?

**Mixed-use Commercial**  
*And Mixed-use Commercial with High-rise Overlay*

<table>
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<tr>
<th>Environment</th>
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<th>Jobs</th>
<th>Tax revenue and fiscal impacts</th>
</tr>
</thead>
</table>
| • “Business case” for district heating is strongest, given the high density of commercial and lab uses  
• Have the highest energy consumption, waste generation, and GHG emissions | • Gains no reductions from the jobs-housing balance and generates the highest number of trips | • Creates fewer housing units than the baseline | • Creates the most jobs | • Most likely to fund pedestrian/bike bridge over the tracks  
• There may be further potential to leverage the revenue/value for the implementation of other large-scale resilience or energy infrastructure |

Environment:  
- "Business case" for district heating is strongest, given the high density of commercial and lab uses  
- Have the highest energy consumption, waste generation, and GHG emissions

Mobility:  
- Gains no reductions from the jobs-housing balance and generates the highest number of trips

Housing:  
- Creates fewer housing units than the baseline

Jobs:  
- Creates the most jobs

Tax revenue and fiscal impacts:  
- Most likely to fund pedestrian/bike bridge over the tracks  
- There may be further potential to leverage the revenue/value for the implementation of other large-scale resilience or energy infrastructure
Mixed-use Industrial: Light industrial/commercial emphasis

Guiding considerations
- Minimize residential development in the floodplain
- Optimizes land uses to best suit the 4’ plinth elevation
- Creates jobs with a low barrier to entry

Bridge unlikely to be financially viable in this scenario

Mixed use light industrial, commercial above
Retail (Mixed-use)
Commercial
Residential
New Bicycle/Pedestrian Connections
Bicycle Lanes
Open Space
Scenario Building Prototypes

Residential Prototype

- Typical Floorplate: 14,000-20,000 SF
- Minimum Floorplate: 10,000 SF
- Typical Building Width: 65 Feet
- First habitable floor raised 4’ for flood protection, with parking below
- Continuous raised walkway/porch along “A Streets”

Commercial Prototype

- Typical Floorplate: 25,000-32,000 SF
- Minimum Floorplate: 20,000 SF
- Typical Building Width: 120 Feet
- First habitable floor raised 4’ for flood protection, with parking below
- Continuous raised walkway/porch along “A Streets”

Mixed-Use Industrial Prototype

- First Floor: 75,000-225,000 SF
- Typical Upper Floor: 25,000-40,000 SF
- Typical Building Width: 180 Feet
- First habitable floor raised 4’ for flood protection, with parking below
- Continuous raised walkway/porch along “A Streets”
Mixed-use Industrial: Mobility and circulation

- Primary Truck Access
- Secondary Truck Access
- Cycle Track, No Truck Access
- Passenger Cars, No Truck Access
Mixed-use Industrial: Typical Block — Parcels
Mixed-use Industrial: Typical Block — Aggregated Parcels

Parcels aggregated to allow for appropriate depth of industrial warehouse space plus truck aprons
Mixed-use Industrial: Typical Block

- Mid-block open space network
- B Street Front Lot Line Setback is 8" for a planting zone.
- Parking and service access only on B Streets
- A Street Front Lot Line Setback is 12" to account for a required 12' deep, 4' high plinth that meets the back of the sidewalk
- Maximum height of 70' for residential and 85' for commercial development
- Zero lot lines for front and sides. 30' rear setback
- 120' truck apron with additional parking
Mixed-use Industrial: Building Prototype

- Industrial / warehouse uses on ground floor with 3 floors of commercial office space above
- First habitable floor elevated to 4’ above street-level (not shown in image). Total building height up to 85’
- Option to add ground floor retail in front of industrial / warehouse space along primary streets
- Floor area ranges from 36,000 SF to 68,500 SF (per floor)
- Flexible floor plate depth on upper floors accommodates a variety of commercial uses - office R&D, fabrication, etc.
- Floor to floor height of industrial, retail spaces is 31’
- Floor to floor height of commercial spaces is 13’- 6”
Mixed-use Industrial: Ground-floor Program

Development yields

- ~1,000 housing units
- ~2.16m SF office / lab space
- ~79,000 SF of ground floor retail
- ~648,000 SF of industrial space
- ~1,300 industrial jobs
- 575 existing housing units
- 610 pipeline housing units

District FAR = 1.27
How does this compare to the baseline?

Mixed-use Industrial

Environment
- Land use and low density lead to least energy demands
- Significant solar potential (when compared to consumption) given the large flat roofs
- Places fewest residents in the floodplain

Mobility
- Does not achieve a distributed street network as the value captured from new development will not be sufficient to fund this
- Need for truck access on primary roads further detracts from the walkability in this district

Housing
- Creates fewest housing units

Jobs
- Creates jobs with a lower barrier to entry
- Creates more jobs than the baseline

Tax revenue and fiscal impacts
- Challenge from the real estate market perspective and pointing to the need for a City mandate to develop these uses in Alewife
- Least likely to fund critical infrastructure (e.g., ped/bike bridge or new stormwater infrastructure)
**Impetus**

**Baseline**
- Understand the potential buildout under current zoning, consistent with recent projects
- Evaluate the resulting urbanism in terms of urban form, walkability, and contribution to a comprehensive environmental agenda
- Compare to alternative scenarios

**Optimized Baseline**
- Create better urbanism at the same allowed density and use-mix as currently allowed
- Complete the street grid
- Introduce a bike-ped path with a stormwater function and associated open spaces along it

**Mixed-use Residential**
- Create better urbanism, but with an increase in density skewed to residential. Incentivize less suburban development
- Significantly increase housing
- Other urban design features the same as the Optimized Baseline
- Generate more RE revenue to help defray the costs of infrastructure improvements

**Mixed-use Commercial**
- Create better urbanism with the same use-mix, but with an increase in density skewed to commercial development
- Provides jobs to residents
- Other urban design features the same as the Optimized Baseline
- Generate more RE and tax revenue to help defray the costs of infrastructure improvements
- Increase commercial tax base
- Minimize residents in the floodplain

**Mixed-use Industrial**
- Provides low-barrier to entry jobs to residents
- Provides space for fabricators and start-ups
- Avoids building residential in floodplain
- Increases truck traffic in the area
- Truck servicing requirements will make it challenging to make the district pedestrian and bicycle-friendly

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**Baseline**

**Optimized Baseline**

**Mixed-use Residential**

**Mixed-use Commercial**

**Mixed-use Industrial**
### Draft Alewife Scenarios - Evaluation

<table>
<thead>
<tr>
<th>Environment</th>
<th>Baseline</th>
<th>Optimized Baseline (+ option with high-rise overlay)</th>
<th>Mixed-use Residential (+ option with high-rise overlay)</th>
<th>Mixed-use Commercial (+ option with high-rise overlay)</th>
<th>Mixed-use Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>Lacking in district-wide strategy for flood mitigation</td>
<td>Improved block structure allows for systemic stormwater solution</td>
<td>Same as Optimized Baseline, but less pervious surface will require more aggressive strategies on building roofs</td>
<td>Most likely to work for a district energy</td>
<td>Best PV potential given the consumption to production ratio</td>
</tr>
<tr>
<td><strong>Mobility</strong></td>
<td>Lack of street connectivity and hierarchy thwarts alternative modes</td>
<td>Minimal difference in density and use, but improved urbanism will encourage biking and walking</td>
<td>High percentage of residential use means that trip generation is not as significant as commercial scenario</td>
<td>High percentage of commercial uses means the most trips of the scenarios</td>
<td>Requires truck access Least likely to produce multimodal environment</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td>Baseline for comparison (~2,400 new housing units)</td>
<td>Slightly more than baseline because more of the allowable FAR can be used with new setback rules (~2,800 units)</td>
<td>Most housing units, including affordable units → most residents in floodplain (~4,000 units)</td>
<td>Less housing than residential, but more than other scenarios (~1,800 units)</td>
<td>Fewest housing units and fewest residents in the floodplain (1,000 units)</td>
</tr>
<tr>
<td><strong>Jobs</strong></td>
<td>Baseline for comparison (~10,000 jobs)</td>
<td>Slightly more than baseline because more of the allowed FAR can be used with new setback rules (~9,200 jobs)</td>
<td>More jobs than the Optimized Baseline, because of the increase in density (~15,500 jobs, +2,200 w/HRO)</td>
<td>Generates the most jobs, skewed to R&amp;D and Life Science (~34,300 jobs, +4,900 w/HRO)</td>
<td>Creates diversity of jobs and provides commercial space for start-ups and other businesses that can't afford Class A office space (1,300 industrial jobs, 12,700 commercial jobs)</td>
</tr>
<tr>
<td><strong>Revenue/ Fiscal Impacts</strong></td>
<td>Baseline for comparison</td>
<td>Not enough RE revenue to pay for district-wide infrastructure, including the bike/ped bridge</td>
<td>Generates just enough RE revenue to pay for new streets and bike/ped bridge</td>
<td>Maximum RE revenue for the bike/ped bridge and new streets, maximizes commercial tax revenue</td>
<td>Not enough RE revenue to pay for district-wide infrastructure, including the bike/ped bridge</td>
</tr>
</tbody>
</table>

**City of Cambridge**

**Envision Cambridge**

**PRELIMINARY– Subject to ongoing revision**

**ECAC January 18, 2017**
Next Steps for Alewife Planning

Feedback from
• Alewife Working Group (Jan 26)
• Alewife Public Workshop (Feb 8)
• Online Survey (launching in Feb)

Refine the scenarios, then more feedback

Draft plan (late spring/early summer 2017)
Discussion Questions

Having seen the scenarios and their potential pros and cons:

• What types and mix of new development is most appropriate in the Quadrangle?

• Do you have suggestions for how to approach other areas and issues in Alewife?

• What role should Alewife play in meeting the City’s overall goals?