

Envision Cambridge

Alewife Working Group Meeting

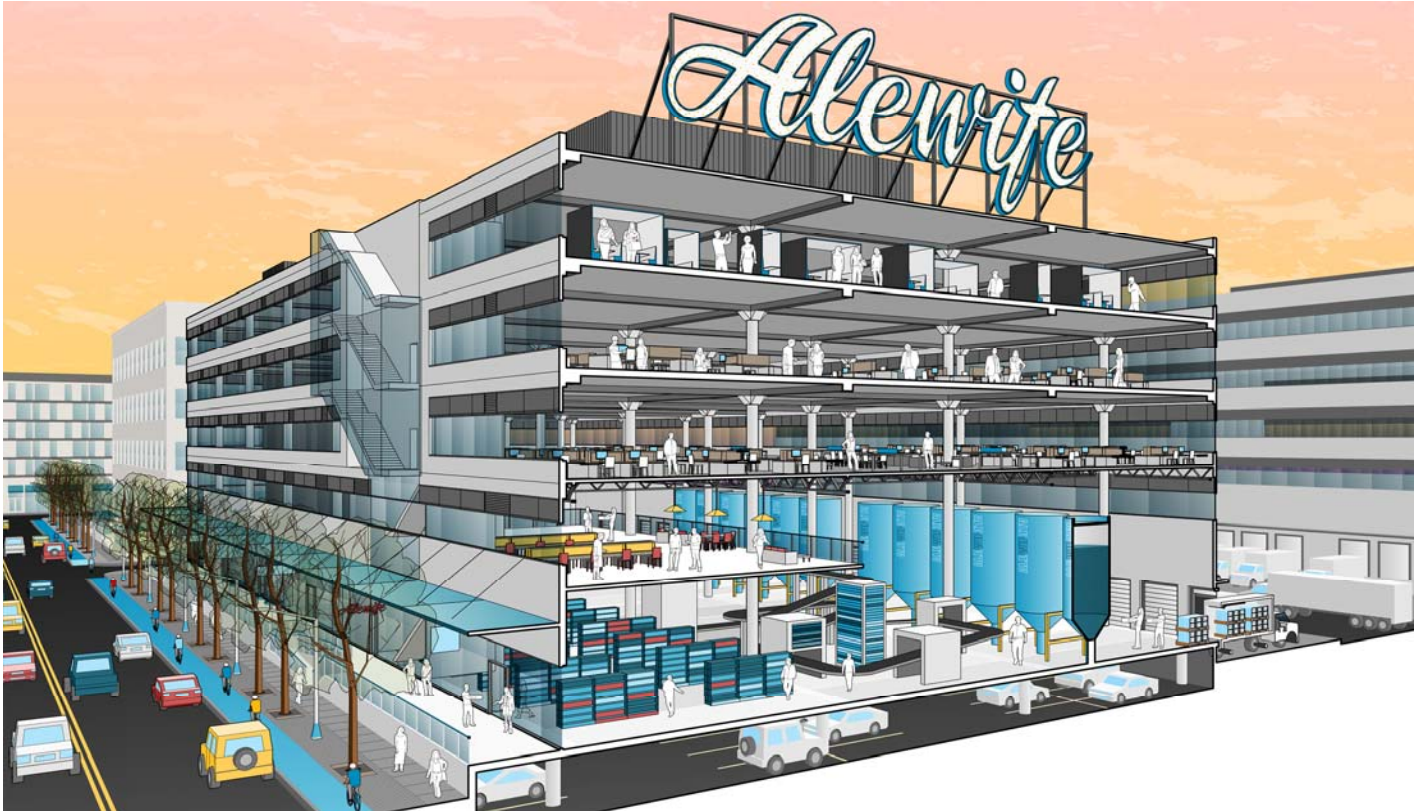
April 12, 2018



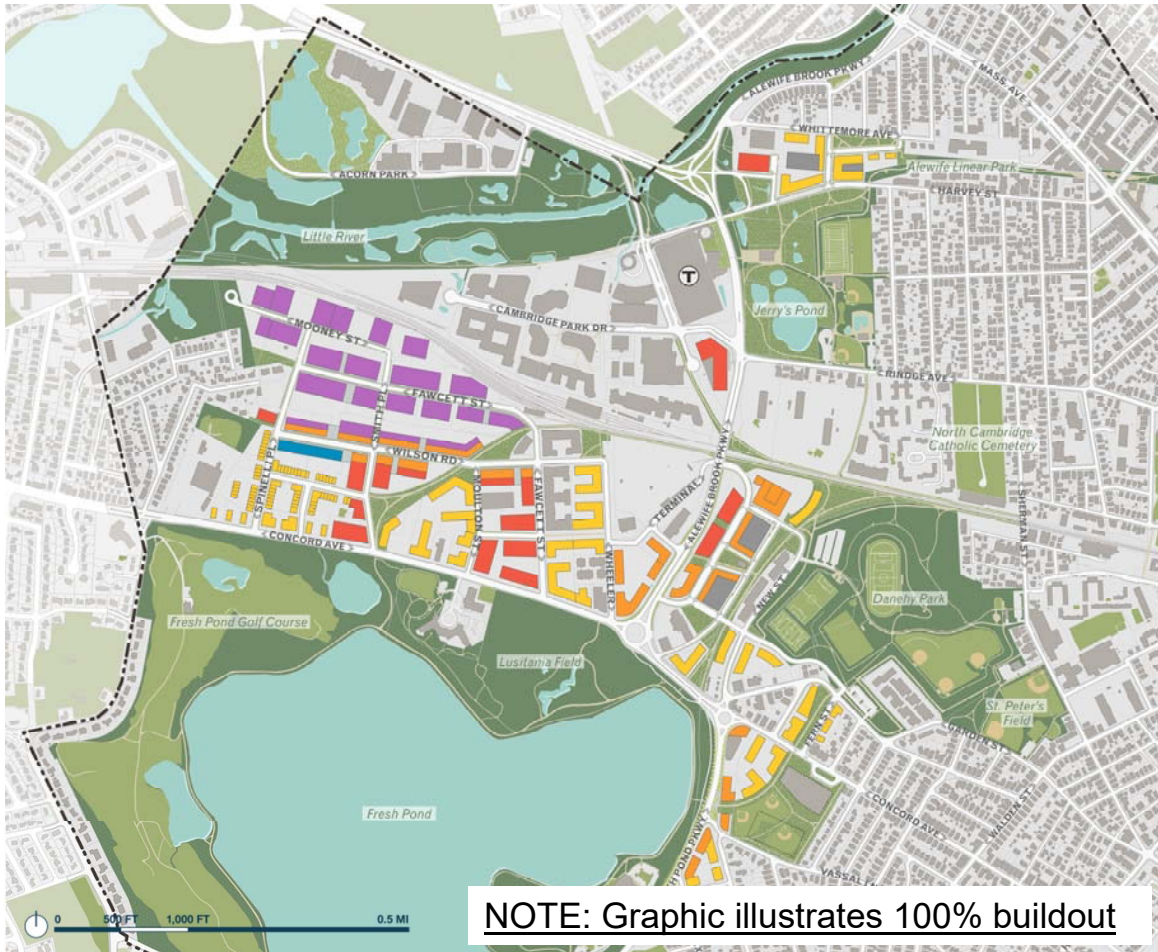
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Agenda

- Overview of transportation impacts
- Mobility strategy
- Discussion



Alewife: Proposed Land Use



Net New Housing Units at 60% Buildout (2030)	~2,110 units
– Quadrangle	~725 units
– Shopping Center	~745 units
– Jerry's Pond	~310 units
– Fresh Pond Parkway	~330 units

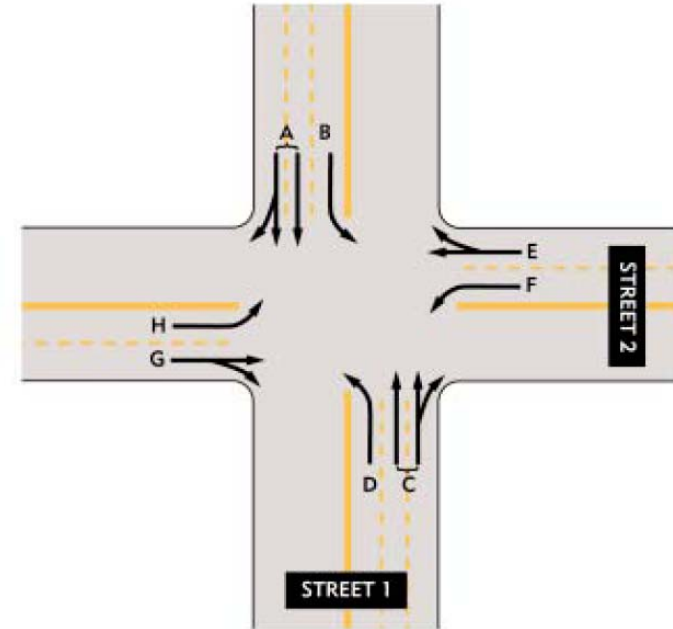
Net New Jobs at 60% Buildout (2030)	~9,290 jobs
– Quadrangle	~7,020 jobs
– Shopping Center	~1,030 jobs
– Jerry's Pond	~350 jobs
– Triangle	~720 jobs
– Fresh Pond Parkway	~170 jobs

Proposed Land Use

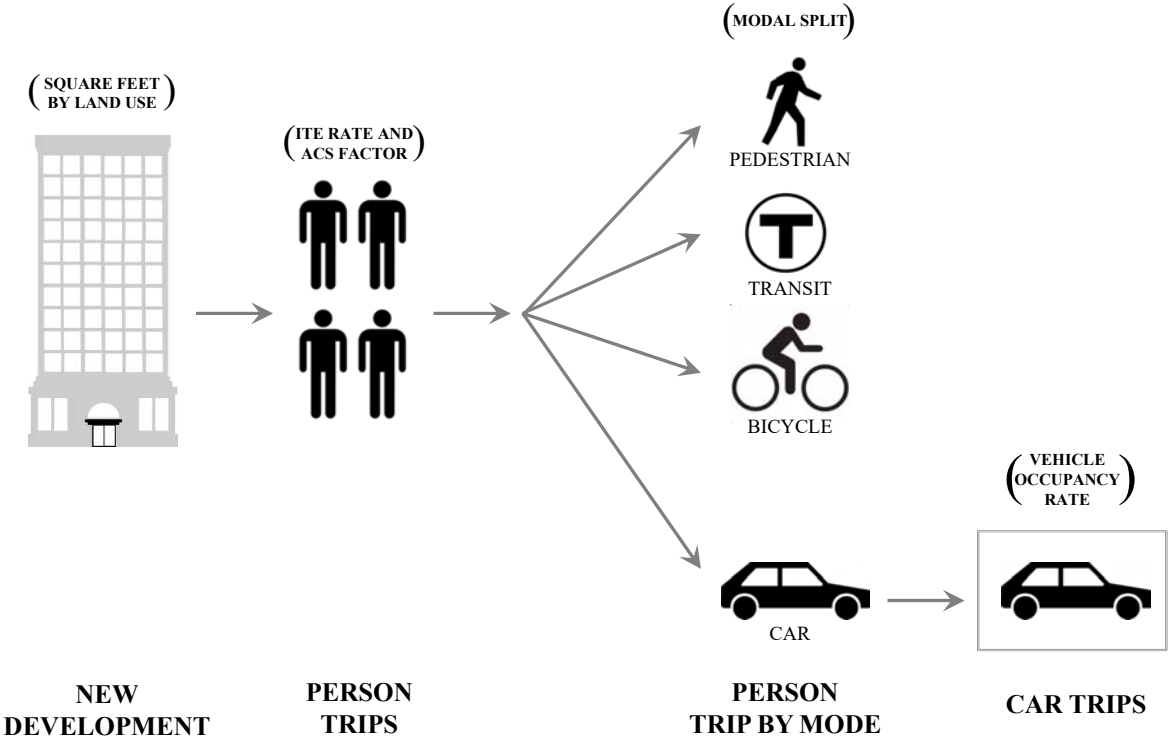
- Residential
- Commercial
- Mixed-use Retail
- Mixed-use Industrial
- Live/Work Space

Critical Sums

- Critical Sums Analysis is a planning tool used to compare 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
 - 2011 K2C2



Critical Sums Methodology

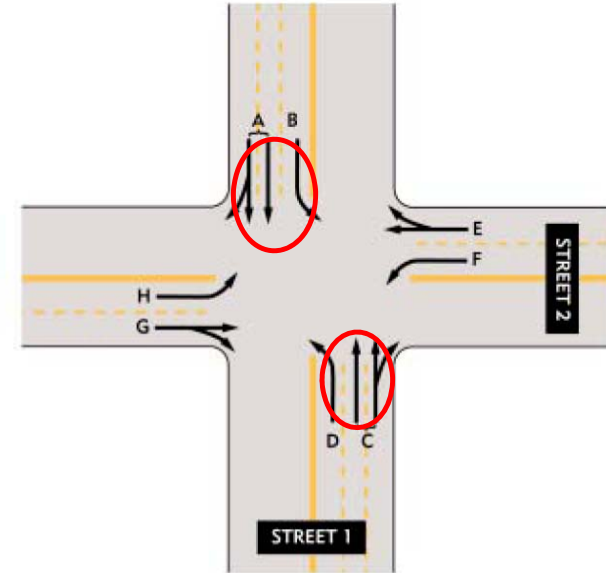


Critical Sums Methodology

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.
- **Rotaries** with **1,800** or fewer vehicles are considered to operate adequately

When thresholds are exceeded, intersection operation starts to deteriorate exponentially.



Street 1: $(A+2) + D$ or $(C+2) + B$, whichever is more

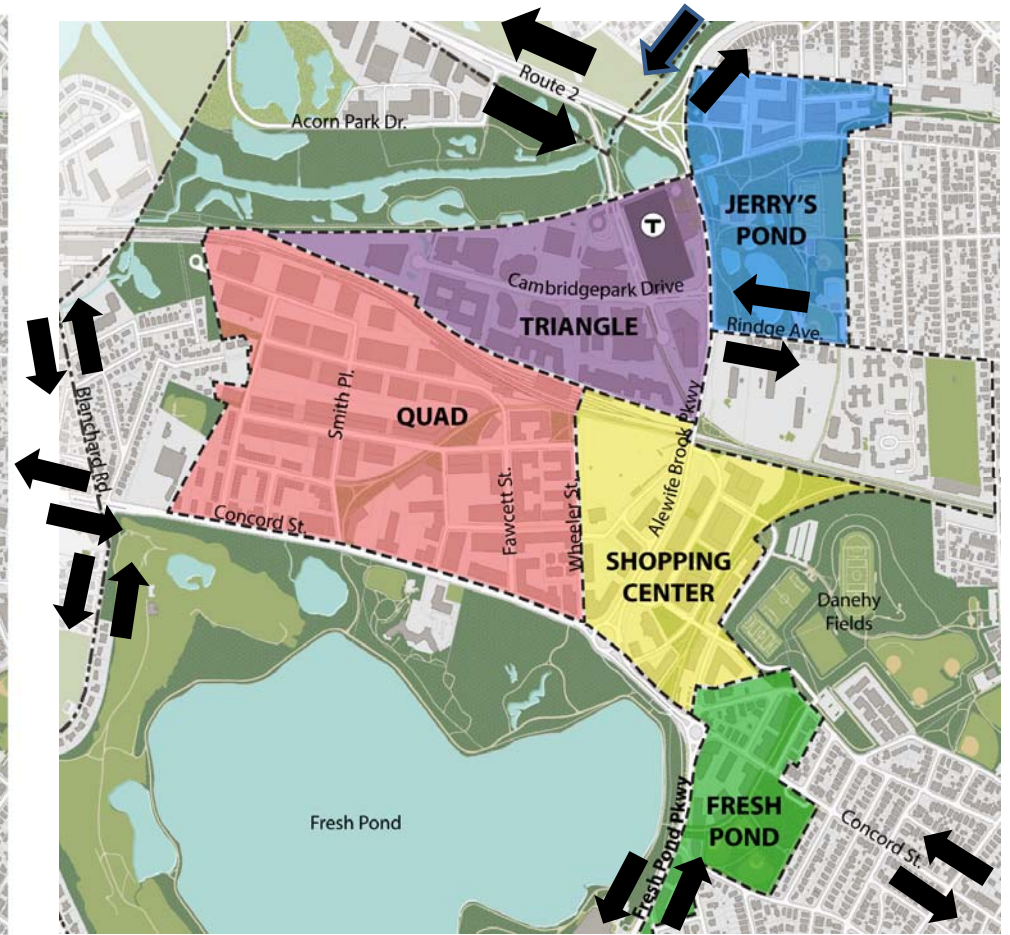
Street 2: $E + H$ or $G + F$, whichever is more

Critical Sum = Result of Street 1 + Street 2

Study Area Intersections



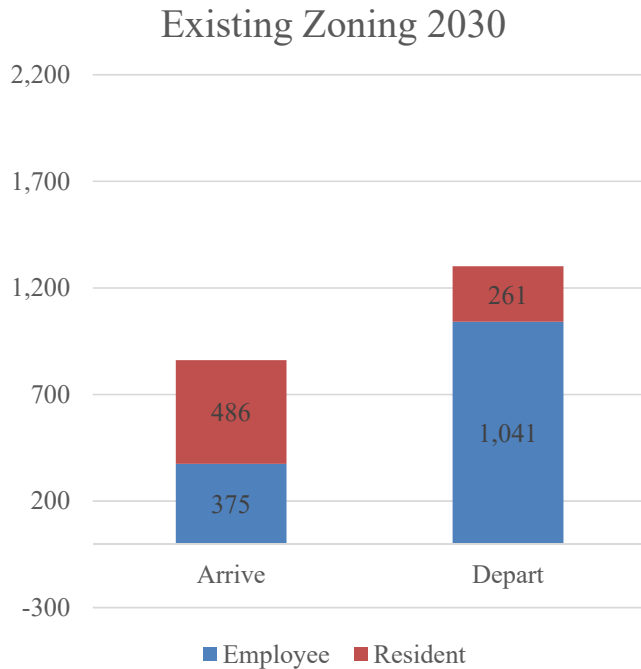
Study Area Trips



Net New Auto Trips (PM Peak) in Study Area

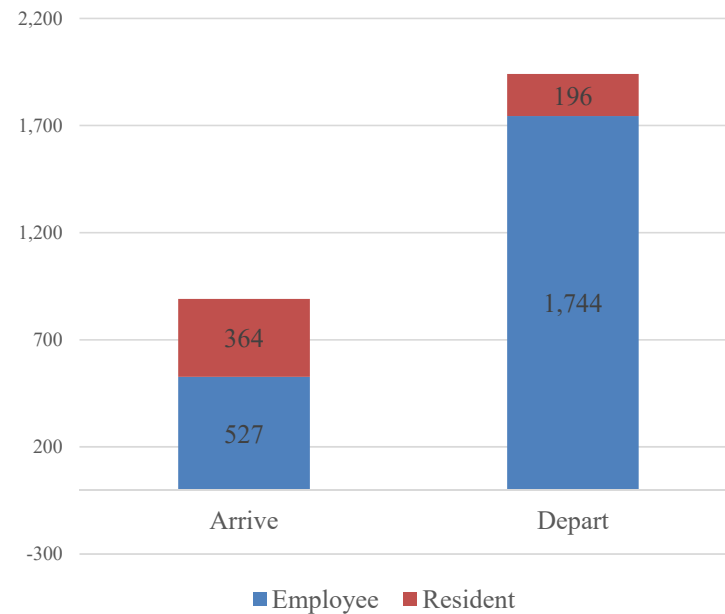
Revised from December meeting to correct minor calculation error

Increase in auto trips – add in pipeline projects



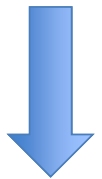
2,163 Total New Auto Trips

Proposed Zoning 2030



2,831 Total New Auto Trips

Decrease in auto trips – refined square footage



Critical Sums By Intersection

Revised from December meeting to correct calculation error, no significant change to critical sums

Intersection	Existing (2016)		2030 Existing Zoning		2030 Proposed Zoning	
	Total Volume	Critical Sum	Total Volume	Critical Sum	Total Volume	Critical Sum
1. Alewife Brook Parkway & Route 2	5498	1699	5814	1853	5872	1863
2. Alewife Brook Parkway & Cambridge Park Drive	3844	1267	4380	1436	4441	1430
3. Alewife Brook Parkway & Rindge Ave.	3769	1305	4353	1433	4426	1427
4. Alewife Brook Parkway & Concord Ave Rotary	3388	2152	4460	2640	4781	2670
5. Concord Ave & Fresh Pond Parkway Rotary	3033	1375	3921	1786	4117	1840
6. Concord Ave & Fawcett St.	1350	708	2261	1335	2693	1687
7. Concord Ave & Blanchard Rd.	1955	1096	2702	1490	3080	1640

Red = over threshold

Findings

- Under existing zoning, no new intersections exceed thresholds.
- Under proposed zoning, three new intersections exceed thresholds.
 - Three new intersections are all on Concord Ave because proposed zoning has more commercial development in the Quad and commercial development generates more *peak hour* trips than residential development

2030 Development GFA – 60% Buildout

	Existing Zoning	Proposed Zoning	Existing Zoning	Proposed Zoning
	Residential		Office/R&D	
Jerry's Pond	296,310	314,220	214,510	202,330
Quadrangle	2,498,550	1,959,270	1,054,900	1,901,010
Shopping Center	1,205,830	899,260	239,550	325,280
Fresh Pond Parkway	211,600	329,880	0	0
Triangle	0	0	140,430	140,430
TOTAL	4,212,290	3,502,630	1,649,390	2,569,050

Proposed zoning includes 411,000 sf of industrial and 261,000 sf of retail compared to no industrial and 260,000 sf of retail under current zoning.

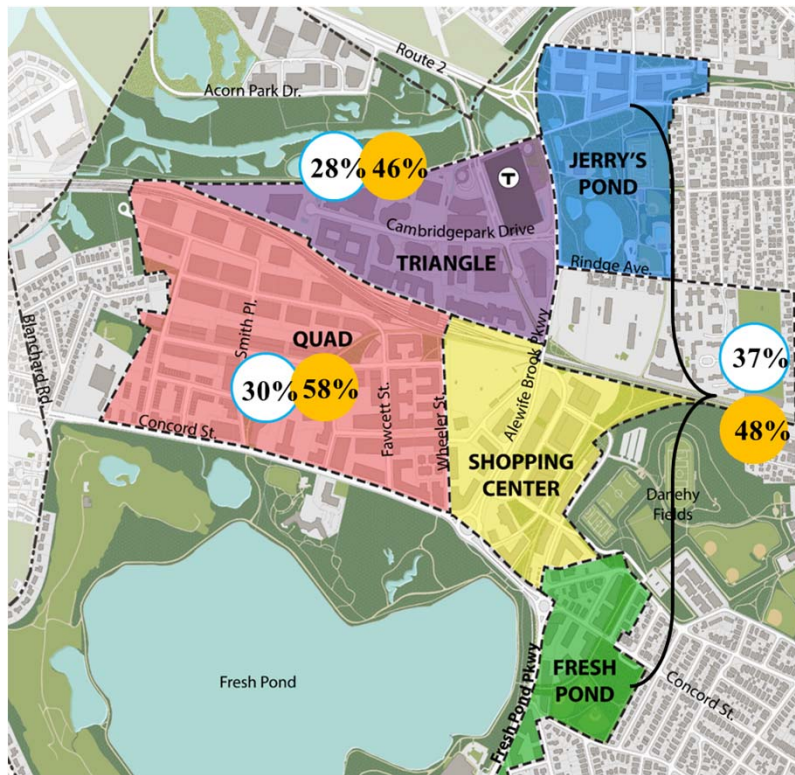
Goal: meet our planning objectives without additional intersections exceeding the critical sums threshold

Need to reduce employee auto mode share, particularly in Quad.
This is achievable with:

- Aggressive parking requirements (establish low maximums)
- Enhanced transportation demand management
- Improved bus service and new infrastructure connections (shuttle buses, signal prioritization, bike/ped bridge)

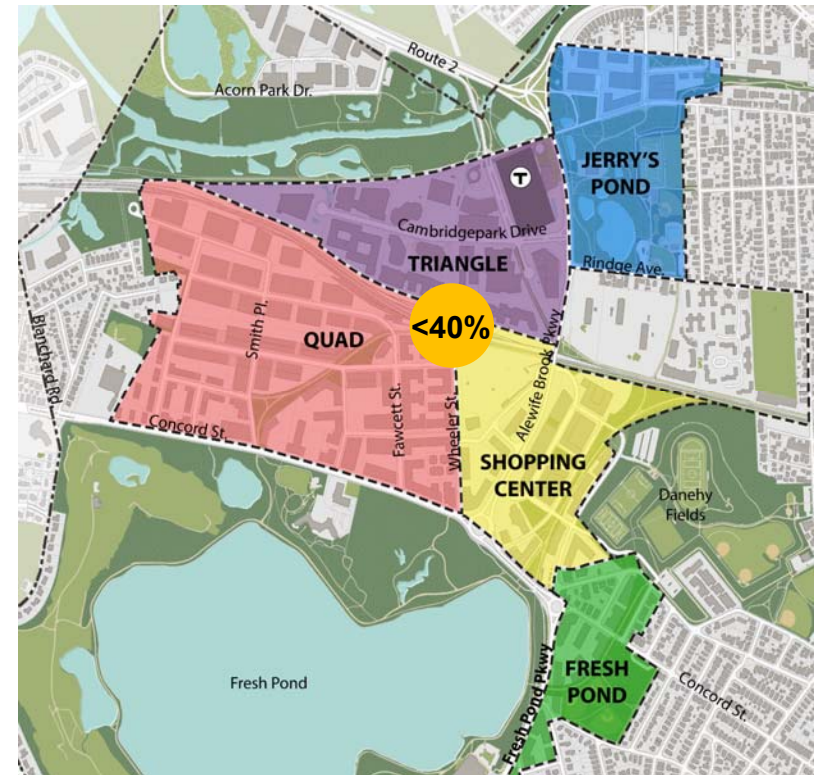
Mode Share w/ no infrastructure improvements, enhanced TDM

3 new intersections exceed threshold



Mode Share achieved w/ plan recommendations

0 new intersections exceed threshold



Percentage of trips by car (SOV and HOV)

○ Residential

● Employee

Mobility Strategy: Parking Demand Example

Near-term actions:

- Implement low parking maximums, **no minimums**

Parking demand at 37% employee auto mode share	
	Max
Retail	.9 per 1,000-sf
Office	1.1 per 1,000-sf
R&D	.8 per 1,000-sf
Industrial	.5 per 1,000-sf
Residential (based on current demand)	0.75 per dwelling unit

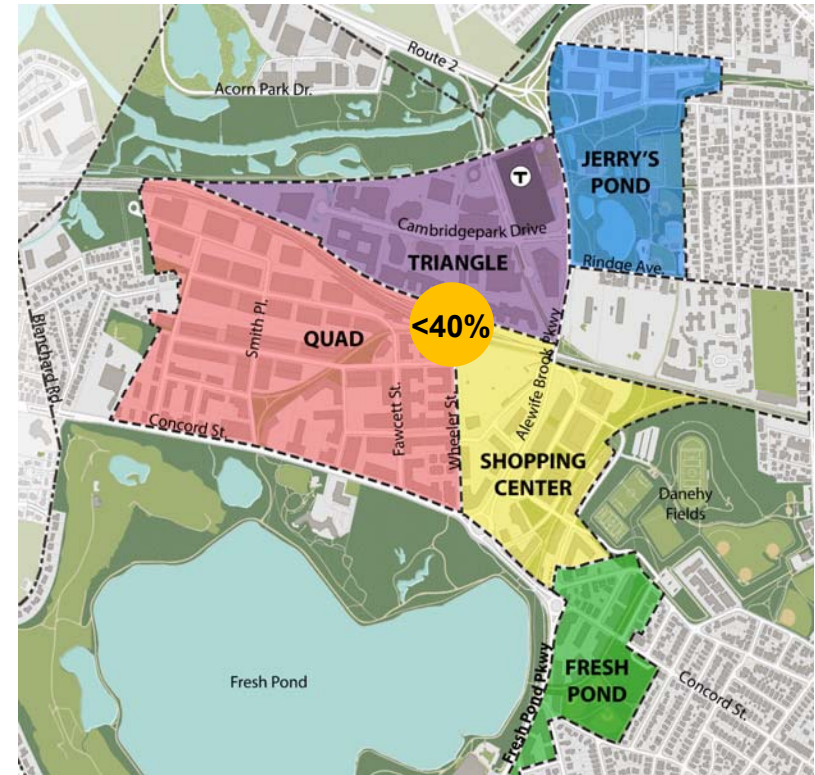
Existing zoning		
	Min	Max
Retail	1.11 per 1,000-sf	1.76 per 1,000-sf
Office	0.9 per 1,000-sf	1.75 per 1,000-sf
R&D	0.8 per 1,000-sf	1.75 per 1,000-sf
Industrial	n/a	
Residential	1 per dwelling unit	none

Mobility Strategy: Transportation Demand Management

Near term actions:

- Require all new development to have an individual mode share target with auto mode share equal to or less than the district auto mode share target.
- Require new commercial building owners to provide enhanced TDM, including charging market-rate parking to end users*

**PTDM monitoring shows paid parking is significantly more effective in lowering SOV rate than just offering a transit subsidy.*



Percentage of trips by car
(SOV and HOV)



Residential



Employee

Mobility Strategy: Transportation infrastructure

Near-term actions:

- Charge new commercial development fee to fund transportation improvements in district (\$5/sf)

Medium-term actions as development proceeds:

- Bike/pedestrian bridge to connect Quad to Triangle/Alewife MBTA Station
- Planned streets and multi-use paths
- Implement recommendations from Citywide Bicycle Plan to improve bicycle infrastructure within and to Alewife

Long-term actions as development proceeds:

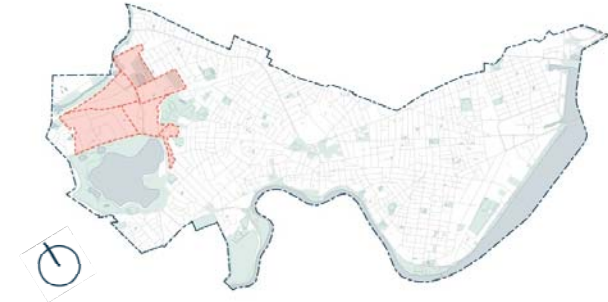
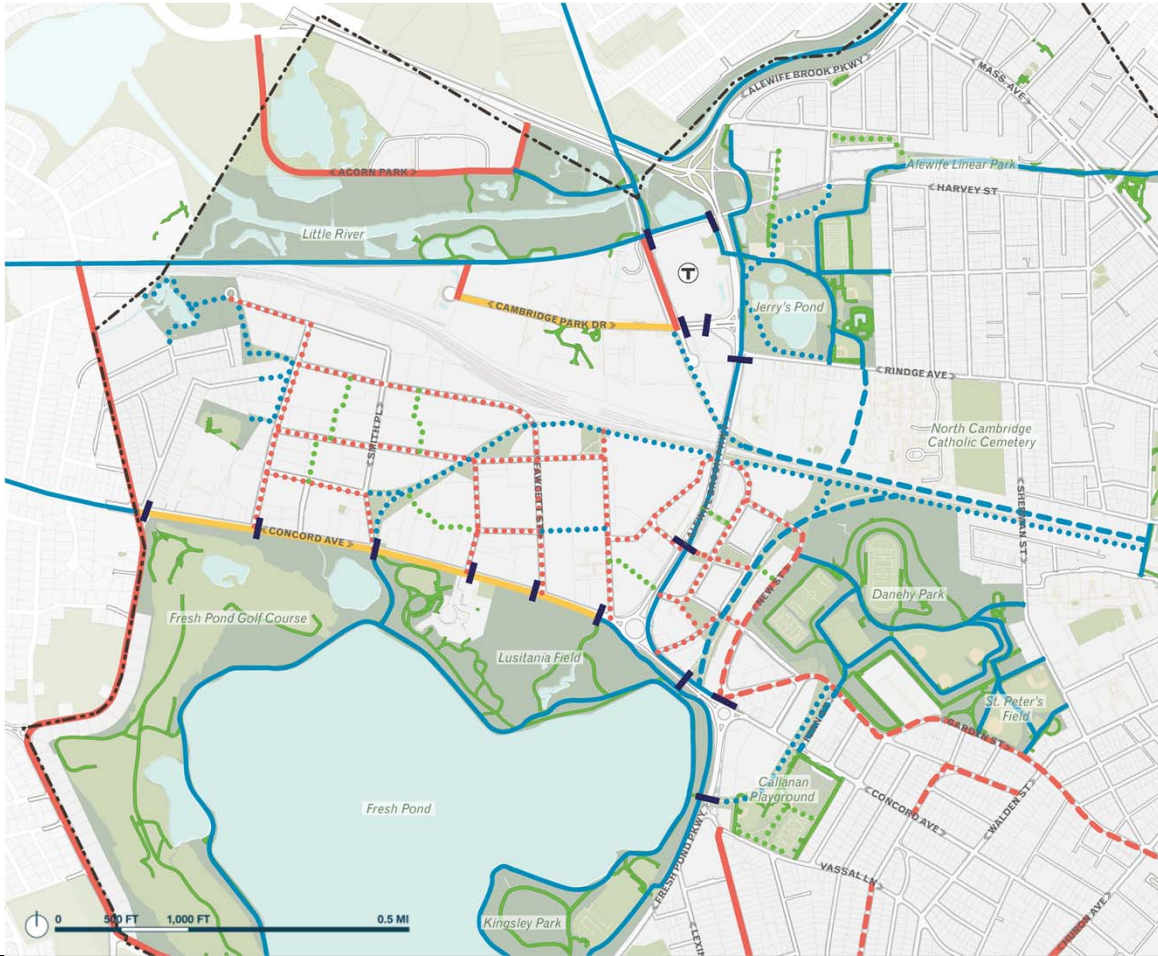
- Support the state to develop a new Alewife commuter rail station when ridership demand justifies a new station
- Evaluate a second bike/walk bridge across Alewife Brook between Discovery Park and Cambridgepark Drive

Bike/ped bridge

- City committed to bike/ped bridge connecting Quad to Triangle
- Current plan is to start construction in next 6-7 years but is contingent on development happening
- Design is a 3-yr process
- Assuming even pace of development, bridge would be constructed at approximately 40% buildout.
- Assuming no reduction in employee mode share, the first new intersection to exceed the critical sums threshold occurs sometime after 40% buildout.



Planned connections



- | Existing | Proposed | Planned | |
|----------|----------|---------|-----------------------------|
| | | | Off-street Pedestrian Paths |
| | | | Off-street Multi-use Paths |
| | | | On-street Bike Connections |
| | | | Separated Bike Paths |
| | | | Crosswalks |

Mobility Strategy: Improved bus service

Near-term actions:

- Work with the MBTA to implement recommendations of bus signal priority feasibility study for buses exiting Alewife station so that they can make a left onto Cambridgepark Drive and make a left from Steel Place into Alewife Station
- Work with MassDot to create bus/shuttle-only lanes on Alewife Station Access Road into Alewife Station from Route 2 and out of Alewife Station under Alewife Brook Parkway back to Route 2.
- Add signal priority on Concord Avenue
- Advocate for increased bus frequency on Concord Ave

Mobility Strategy: Shuttles to Alewife

Near-term actions:

- Work with Alewife TMA to:
 - study how to improve headways and routing, and implement recommendations
 - provide shuttle access to Alewife residents for free or for a small membership fee
 - study impact of extending the 128 Business Council shuttles to Quad
 - study impact of new suburban park & ride routes for Alewife TMA
 - expand corporate offerings (discounted Hubway memberships, priority carpool parking locations, pooled TNC discounts, etc.)

Medium-term actions

- Pilot an Alewife TMA route from Belmont Center commuter rail station to the Quad to supplement MBTA service

AlewifeTMA



Mobility Strategy: Additional actions

Near-term actions:

- Add Hubway stations within 2.5 min walk to buildings in pace with development.
- Install wayfinding signage that includes walk/bike travel time to key destinations and centralized parking locations

Discussion

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