Agenda – Central Square Transportation Part 1
July 11, 2012

• Transportation/Land Use Policy & Practice
• Planning for Growth – Transportation
• Public Transportation
• Transportation Demand Management
• Build-Out/Critical Sums Analysis

• Next meeting (Transportation Part 2):
  • Parking
  • Pedestrian, bicycle and roadway improvements
Transportation/Land Use Policy & Practice

- Responsible growth
  - Vehicle Trip Reduction Ordinance, Growth Policy
  - PTDM Program
  - Climate Action Plan
- Multi-modal approach
  - Ped/Bike Plan
  - Public Transportation/EZ Ride

**Policy # 22, Growth Policy Document**
Undertake reasonable measures to improve the functioning of the city’s street network, without increasing through capacity, to reduce congestion and noise and facilitate bus and other non-automobile circulation.

**Policy # 23, Growth Policy Document**
Encourage all reasonable forms of nonautomotive travel including, for example, making improvements to the city’s infrastructure to support bicycling and walking.
Auto Ownership is declining

Cambridge households without a vehicle increased from 28% to 32% from 2000-2008

Source, American Community Survey

50% of Cambridge households within ¼ mile of an MBTA station have no car

Source, City of Cambridge CDD and TPT Departments,

10% decrease in permits issued between 2000 and 2009.
Bicycle growth is strong

Cambridge Bicycle Counts 2002-2010

Numbers represent combined AM and PM peak hour cyclist counts at 15 locations on a fall weekday under similar weather conditions.

Percent values represent the percent increase in cyclists compared to 2002.
Cambridge Rates Highly

America’s Most Walkable City

Source: Prevention Magazine, 2008

Percentages of Workers who Walk and Bike to Work in Select US Cities

- **Minneapolis, Minnesota**: 4% Walk, 3% Bike
- **San Francisco, California**: 7% Walk, 2% Bike
- **Boston, Massachusetts**: 9% Walk, 1% Bike
- **New York, New York**: 9% Walk, 1% Bike
- **Berkeley, California**: 10% Walk, 6% Bike
- **Cambridge, Massachusetts**: 13% Walk, 4% Bike
Mode Shifts from Single Occupancy Vehicles Continues

1990 - 2010

- Driving rates continue to decrease
- Bike/Walk share continues to increase
- Public transit use for Cambridge workers continues to increase
Average Daily Traffic Volumes/Cambridgeport

Source: City of Cambridge traffic counts
Development vs. Traffic Growth

- Added almost 4 million square feet in Greater Kendall from 2000-2010
- 37.6% growth in built square footage
- Daily Traffic Volumes remained consistent or been reduced
Planning for Growth - Transportation

• Continued application of Cambridge’s sustainable, multi-modal, and vehicle reduction policies
• Review connectivity gaps
• Integrate activities through complimentary land uses
• Prioritize regional investments

Plan Framework: four perspectives

• Celebrate and maintain the mix of old and new, venerable and funky businesses maintain affordability for small, local businesses and non profits
• Generate added diversity through varied housing choices maintain and create middle income, family housing
• Enrich the Square’s public realm as a place that invites community interaction
• Enrich Neighborhood walkability and livability
Central Square Mode Share(s) by Land Use

**Office and R&D**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Current</th>
<th>Enhanced TDM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto</td>
<td>51%</td>
<td>41%</td>
</tr>
<tr>
<td>Transit</td>
<td>42%</td>
<td>38%</td>
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<tr>
<td>Bike</td>
<td>6%</td>
<td>10%</td>
</tr>
<tr>
<td>Walk</td>
<td>5%</td>
<td>7%</td>
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</table>

**Residential**

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<tr>
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<th>Current</th>
<th>Enhanced TDM</th>
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</thead>
<tbody>
<tr>
<td>Auto</td>
<td>28%</td>
<td>28%</td>
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<tr>
<td>Transit</td>
<td>44%</td>
<td>39%</td>
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<tr>
<td>Bike</td>
<td>8%</td>
<td>10%</td>
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<tr>
<td>Walk</td>
<td>10%</td>
<td>7%</td>
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</table>

**Retail**

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<tbody>
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<td>Auto</td>
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<td>23%</td>
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<tr>
<td>Transit</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>Bike</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Walk</td>
<td>36%</td>
<td>38%</td>
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</tbody>
</table>
## Overall Growth: Land Use (K2C2 Scenario)

### Land Use Growth (2030 buildout)

<table>
<thead>
<tr>
<th>Category</th>
<th>Central Area 6</th>
<th>Transition/ South of Main Area 1</th>
<th>Kendall Area 2-5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>664,800</td>
<td>687,200</td>
<td>1,464,700</td>
<td>2,816,700</td>
</tr>
<tr>
<td>R&amp;D/Office</td>
<td>75,000</td>
<td>1,455,300</td>
<td>4,169,500</td>
<td>5,699,800</td>
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<tr>
<td>Retail</td>
<td>61,400</td>
<td>55,600</td>
<td>247,000</td>
<td>364,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>801,200</strong></td>
<td><strong>2,197,900</strong></td>
<td><strong>5,881,200</strong></td>
<td><strong>8,880,500</strong></td>
</tr>
</tbody>
</table>
New Development in 2030 – Daily Trips
Enhanced TDM

- AUTO
- TRANSIT
- WALK
- BIKE
- OTHER

Kendall
Transition
Central

urban design/planning study for the central and kendall square area
Existing Conditions: Public Transportation

Red Line

8 MBTA Bus Routes
Direct Connections to
• Harvard
• Back Bay
• Sullivan Square
• Kenmore
• Longwood
• Boston Medical Center
• Union Square
• Allston
• Brookline
• Watertown/Waltham

Shuttles
• MASCO – Harvard Sq - LMA
• EZ Ride – North Station
  - Cambridgeport
Existing Conditions: Red Line

Overall Red Line Ridership: 192,513 daily
Daily Boardings at Central: 14,531 (7.5% of Red Line total)

Source: MBTA Ridership Statistics, 2010

Central is the 3\textsuperscript{rd} busiest Red Line station (boardings)
(1\textsuperscript{st} South Station, 2\textsuperscript{nd} Harvard)

Frequency: 4.5 minutes Peak
6.5 minutes Mid-Day

Source: CTPS MBTA Blue Book 2010 ed13
Central - Rider Profile

Why are riders coming to Central?

- Work: 51%
- Shopping/Errands/Entertainment: 20%
- Home: 17%
- Other: 7%
- Work Related: 5%

Avg. walking time: 7.1 min

How far will people walk to Central?

- 0-5 min: 20%
- 6-10 min: 40%
- 11-15 min: 20%
- 16-20 min: 5%
- 20 min+: 0%

What do riders do when they exit at Central?

- 82.2% of people walk
- 14.2% get on an MBTA bus
- 1.5% take a shuttle or a bus
- 2.1% other

Where are Central Riders Boarding the System?

- 74% taking the T to Central start their subway trip on the Red Line
- 1/3 of all Central riders board from Alewife direction

Source: CTPS 2008-2009 Red Line and Mattapan Trolley Passenger Survey
Average Train Load – AM peak to Ashmont/Braintree

**Legend**
- Ridership by Stop
- Seated + Standing Capacity
- Seated Capacity

**Note:** The inclusion of “Big Red” standing only cars would increase total capacity (seated + standing) by up to 10% per car.

*Source: Boston Globe, 2008 “MBTA to experiment with nearly seatless subway cars”*
Transit Growth – Issues

MBTA Ridership hitting Record Highs

Red Line Ridership forecasted to almost double by 2030

Source: Urban Ring RDEIR, 2008

Red Line limited by vehicle availability

- Replacements needed for 74 cars (1/3 of fleet)
- Breakdowns expected if new car procurement is delayed

(Hub and Spoke, Stephanie Pollack, Northeastern University)
Existing Conditions: Bus

Number of Buses Servicing Station - Weekday AM Peak

Source: MBTA Ridership and Service Statistics, 2010
## Cambridge TDM Measures & Participation*

<table>
<thead>
<tr>
<th>Measure</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Rideshare matching</td>
<td></td>
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<tr>
<td>Secure bike storage</td>
<td></td>
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<tr>
<td>Transit Subsidy</td>
<td></td>
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<tr>
<td>Free Shuttle</td>
<td></td>
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<tr>
<td>Emergency Ride Home</td>
<td></td>
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<tr>
<td>Lockers</td>
<td></td>
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<tr>
<td>Charles River TMA Membership</td>
<td></td>
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<tr>
<td>Showers</td>
<td></td>
</tr>
<tr>
<td>MBTA passes sold on-site</td>
<td></td>
</tr>
<tr>
<td>Trans info new employee packet/training</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOV Parking Spaces</td>
<td></td>
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<tr>
<td>Info on Website</td>
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<tr>
<td>Newsletter</td>
<td></td>
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<tr>
<td>Annual Trans Fair</td>
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<tr>
<td>EZRIDE contribution</td>
<td></td>
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<tr>
<td>Flexible Work Hours</td>
<td></td>
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<tr>
<td>Employees Charged for Parking(#)</td>
<td></td>
</tr>
<tr>
<td>Carpool incentive</td>
<td></td>
</tr>
<tr>
<td>Allow telecommuting</td>
<td></td>
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<tr>
<td>Bike incentives</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Parking Cash-out (#)</td>
<td></td>
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<tr>
<td>Vanpool incentives</td>
<td></td>
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<tr>
<td>Transit accessibility advertised in materials</td>
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<tr>
<td>On-Site amenities</td>
<td></td>
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<tr>
<td>Car-Share Vehicle</td>
<td></td>
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<tr>
<td>Toll Free # for shuttle</td>
<td></td>
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<tr>
<td>Commuter Check</td>
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*Among Businesses/Office Building Owners with PTDM Plans or Special Permits

- Cambridge’s PTDM program is a national best practice
- Cambridge businesses & residences participate in many TDM measures
- High participation rates in nearly half of all available programs
- Low participation rates in some of the most effective TDM measures (cost more to support)