NEWTON - NEEDHAM LIGHT RAIL

AN OPPORTUNITY FOR NEWTON AND NEEDHAM

City of Newton Planning and Development

Envisioning Needham Street

June 1, 2011
New Newton-Needham Green Line Rail Extension

Three new stations:
- Needham Street
- Newton Upper Falls
- New England Business Center at Charles/Wexford Streets

Line extends to:
- New England Business Center
- Needham Heights
- Needham Center
- Needham Junction
Just past the Newton Highlands station, the “D” branch of the Green Line would split toward Riverside or toward Needham.
The two Green Line branches diverge just south of Rte. 9 at the NSTAR substation behind National Lumber.
The Needham Street Station would be located between Chandler Place and the Public Works facility off Elliot Street, adjacent to the Avalon Bay Apartments.
New Green Line in Newton:

The new branch would continue parallel to Needham Street, about one mile to the Newton Upper Falls Depot.
The historic Newton Upper Falls depot is a convenient location for a station, adjacent to a village center and potential new growth.
The 215 acres comprising the New England Business Center has been rezoned to accommodate 2.5 million square feet of additional development.
The Needham Heights station is the current terminus of the South Station to Needham Commuter rail. Light rail could terminate at Wexford St in the NEBC, Needham Heights, Needham Center or Needham Junction.
The Problems of the Needham Street Highland Avenue Corridor:

Congested and polluted
Hostile to pedestrians
Poor access to businesses
Multiple safety concerns
Unattractive aesthetics
The Opportunities of Needham Street

Avalon Bay Apartments: Concentrated source of housing in Newton

The Northland site: A 22-acre site from Oak Street to Tower Road
Integrating with the village at Newton Upper Falls
Opportunities on Needham Street

New development at Newton Upper Falls
New growth in Needham: Charles River Landing

- 350 residential units
- 601 parking spaces
- 149 surface spaces
- 5 1/2 story garage
Cabot Place

8.2 acre development
First Ave and B Street
390,000 sq ft office
1500 parking spaces
107 surface parking

Opportunities along the Highland Avenue Corridor
Green Line
People Mover

Shuttle bus from Charles/Wexford connecting with sites in Needham Industrial Park and Kendrick Street
Green Line People Mover

Servicing an expanding economy and workforce in the Needham Business Center

Sheraton Hotel
247 rooms
114 employees
Full service, often at capacity
Cutler Park

Wetland preserve = 700 acres

Largest fresh water marsh on the middle Charles

Attracts over 100 species of birds

Hiking, canoeing, fishing

A new “Emerald Necklace” along the Charles River between Echo Bridge and Cutler Park
Bay Colony Rail Trail
Needham to Medfield

Needham: 2.2 miles
From Needham Junction to Charles River

Dover: 3.7 miles
Passes through Dover Center

Medfield: 1.2 miles
To Mill Pond Harding Street

Rail-banking:
Federal statutes preserve public right of way
Allow future conversion back to rail use

Bay Colony Rail Trail
Needham to Medfield
Planning and Complete Streets Subcommittee
Improving transit, bicycle, and pedestrian connections

Bicycle path existing next to light rail corridor: example for Needham Street

Pedestrian – bicycle bridge: example at Eliot MBTA station
MBTA Pedestrian-Rail-Bicycle Bridge over Route 9 at Eliot Station

Pedestrian-Bicycle bridge over Route 9 at Eliot Station

Similar structure can be built across the Charles River and Route 128 along Newton-Needham line
Pedestrian - Bicycle - Rail

Bridge across Route 128 will be about 200 ft long

Bridge can be designed to accommodate pedestrians, bicycles and rail (similar to Eliot Station Bridge, Newton)

Enables connection from NEBC station to businesses in Needham on west side of Rt 128

Cost: $5 million
“The gravel is brought from Needham, near the line in Newton, a quarter of a mile from the Upper Falls Depot, and nine miles distant from Boston.

One hundred and forty-five dirt cars, with eighty men, including engineers, brakemen and all, are employed, night and day in loading and transporting the gravel over the road. The trains consist of thirty-five cars each, and make, in the day time, sixteen trips, and in the night nine or ten, or twenty-five in twenty-four hours.”

From Ballou’s Pictorial
May 21, 1859

As quoted in: “The Makers of the Mold”
By Ken Newcomb, 1997
Freight train between Needham Heights and Newton Upper Falls - March, 2004
Rail line at Avalon Bay Apts Needham Street
Rail line at Newton Upper Falls Depot
Is there a demand for rail transit?

An overview of the Program for Mass Transportation (PMT) and the prioritization of transit projects
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PMT prioritization process - performance measures

- Utilization
- Mobility
- Cost Effectiveness
- Air Quality
- Service Quality
- Economic and Land Use benefits
- Environmental Justice
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Ridership and Cost Analysis: Utilization

- PMT (2009)
  - Change in ridership 6,900 - 9,400 (unlinked trips)
  - Change in ridership 1,000 - 1,400 (linked trips)
  - Divert from auto mode = 900-1200

- PMT underestimates new employment or population growth in corridor
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Performance Measures: Mobility

- Mobility is constrained by traffic congestion
- Auto traffic: Route 9 = 50,000 per day
  Route 128 = 150,000 per day
  Needham St = 30,000 per day
  Highland Ave = 36,000 per day
- Faster trip for transit riders (30 minutes to Copley)
- Reduce traffic congestion (5000 trips per day)
40 cars on the road

40 people seated

40 people out and about

40 people in a bus
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Performance Measures: Cost Effectiveness

- Low costs: Utilize existing rail-bed
  - No property takings
  - Only 1-2 miles of construction

- Maximum benefit: Large ridership increases
  - Excellent fare box recovery
  - Favorable cost/trip ratio
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Performance Measures: Economic/Land Use Benefits

- Potential for large scale growth
  - Needham: 2.5 million sq.ft. of new commercial space envisioned (New England Business Center)
  - Newton: Moderate to high density development (Avalon Bay and Northland site, as examples)

- Growth currently constrained by congestion on inadequate infrastructure in densely populated area
ECONOMIC FEASIBILITY

Benefits to Newton’s budget

- Currently, Needham Street contains about 2.5 million square feet of commercial real estate, representing 15% of Newton’s tax revenues.

- New development can add about 2 million square feet of additional commercial space (such that this area would represent 25% of Newton’s tax base).
CPAC (2004)

At build-out, can add 2.15 million sqft commercial floor area in mixed use zones.

TOD is a way to add new commercial development while avoiding adverse traffic effects.
ECONOMIC FEASIBILITY

Benefits to Needham’s budget

- Currently, the 215 acre NEBC contains about 5 million square feet of commercial real estate, representing 12% of Needham’s tax revenues.

- Under current zoning, new development can add about 2.5 million square feet of additional commercial space, so that this area would represent approximately 20% of Needham’s tax revenues.
Changes that are desired in the Needham Street corridor depend on implementation of rail-based transit improvements.
RAIL-BASED TRANSIT EXTENSION

Benefits of extending light rail

- Will allow for zone to take characteristics of transit-oriented development

- Will allow for additional growth potential and economically beneficial new development

- Will have a transformative effect on making the corridor a new pedestrian-oriented “village” that integrates with the rest of Newton

- Will allow for Needham Street itself to assume the characteristics of a “complete street”
Note: Current right-of-way approximately 40 feet. New configuration assumes property owners will provide easement of about 7' on each side of roadway for pedestrian improvements.
NEWTON - NEEDHAM RAIL EXTENSION

- Fight the “inevitability hypothesis”
- Funding will be available for projects that bring public benefit and economic growth
- We can implement changes in land use and transportation based on desired principles