Hub and Spoke
CORE TRANSIT CONGESTION AND THE FUTURE OF TRANSIT AND DEVELOPMENT IN GREATER BOSTON

Author: Stephanie Pollack, Associate Director, Dukakis Center for Urban & Regional Policy at Northeastern University

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Study Questions

• How fast is the MBTA’s ridership growing?
• How will real estate development trends affect future MBTA ridership?
• How much additional ridership should the MBTA plan to accommodate over the next decade?
• Which MBTA rapid transit lines are congested?
• Where are the congestion “hot spots” in the Boston/Cambridge?
• How should the Massachusetts Department of Transportation and the MBTA address the problems of constrained capacity and core transit congestion?
The MBTA’s “hub and spoke” system generally moves riders into the core of the system in Cambridge and Boston.
How fast is the MBTA’s ridership growing?

**FIGURE 3**
FORECAST MBTA RIDERSHIP GROWTH IN 2021
How will real estate development trends affect future MBTA ridership?

The three key real estate market trends driving greater transit ridership are:

- New construction of residential, commercial, mixed-use and institutional transit-oriented development;
- More intensive use of existing commercial space in urban core neighborhoods; and
- Promotion of transit to users of both new and existing development in transit-served locations.
A New Wave of TOD in Metro Boston

30 Haven St., Reading
Fan Pier
Jackson Square
SouthField
A Transit-Oriented Region
The TOD Pipeline

Recently completed:
10 million sq ft commercial
11,200 housing units

Under construction:
4.7 million sq ft commercial
3,500 housing units

Planning / permitting:
29 million sq ft commercial
29,200 housing units
TOD Potential

76,000 housing units
133,000 jobs

Major component of projected regional growth
31% of housing demand
56% of job growth

TOD in the Pipeline and Additional Potential

Potential for add’l 43,400 units
35 million sq. ft in the development pipeline

Potential for add’l 32,700 units in the pipeline

Housing Units
Employment
How much additional ridership should the MBTA plan to accommodate over the next decade?
Which MBTA rapid transit lines are congested?

PROPOSED MBTA CONGESTION ASSESSMENT AND MANAGEMENT SYSTEM

A service is **congested** if peak hour ridership volumes are (or are forecast to be) consistently at 80%-100% of the Service Policy standard. In order to avoid future capacity constraints and violations of the Service Policy, steps should be taken to relieve congestion.

A service is **highly congested** if peak hour ridership volumes consistently exceed (or are forecast to exceed) the Service Policy standard but are below “crush capacity”. A congestion relief plan should be put in place to bring vehicle loads below the Service Policy standard.

A service is **over capacity** if peak hour ridership volumes consistently exceed (or are forecast to exceed) crush capacity. A congestion relief and capacity expansion plan should be put in place immediately and should include both shorter-term measures to reduce vehicle loads and longer-term measures to expand capacity to meet projected ridership demand without experiencing violations of Service Policy standards.
Orange Line congestion
Green Line congestion
Red Line congestion
Where are the congestion “hot spots” in the Boston/Cambridge core?

“Because of the ‘hub and spoke’ nature of the MBTA transit system . . . transit congestion in the core can affect future transit-oriented development throughout the system.”
Keys to Achieving the Potential

Station area plans and zoning that facilitate sustainable, equitable, and high-performing TOD

Context-sensitive state policies and funding incentives targeted to station areas with greatest potential for development and mode shift

Capital investments to ensure that the transit system is equipped to support new development.

*You can’t have the “D” without the T!*
How should MassDOT and the MBTA address the problems of constrained capacity and core transit congestion?

- Ensuring sufficient capacity to meet ridership demand without unacceptable levels of congestion will require both
  - Better planning
  - More investment

- MassDOT and the MBTA should create a core congestion assessment and management system
  - Develop Congestion Relief Plans when lines or stations are “congested” or “highly congested”
  - Implement shorter-term congestion relief measures and Capacity Expansion Plans when lines or stations are “over capacity”
Transit Congestion Relief

• “State of Good Repair” is really two different kinds of capital requirements
  – System maintenance
  – Increasing capacity and relieving congestion

• MassDOT and the MBTA need to put a price tag on the investments needed for congestion relief and core capacity

• The Commonwealth needs to find the resources to ensure that the MBTA can continue to serve a growing ridership, anchor transit-oriented development in cities and towns throughout greater Boston and support a prosperous regional economy

“Congestion relief has long been a priority for highway spending — it is past time to recognize that addressing congestion is equally important for the transit system.”
Outcomes and Impacts:

• Recast the mass transit debate to include “core capacity” rather binary discussion of “state of good repair” vs. “service expansion”
• Merged data on mass transit capacity with ridership growth driven by evolving urban context and TOD development pipeline
• Highlighted the relatively short timeframe of impact
• Big splash on cover of Boston Globe and local TV news
• Held briefings on Beacon Hill with sub-committees to educate legislators on findings in advance of key vote on mass transit budget shortfall