Fiscal Management and Control Board

MBTA Ridership: History & Projections

November 18, 2015
RECENT HISTORY
• Commuter Rail numbers are unreliable – new ridership estimates from pass & ticket sales
• Overall transit ridership increased in the early 2000s, was low during the Recession, and has recently been increasing
• 2000-2007 subway and bus ridership estimated from revenue; after 2007, based on AFC transactions
• Recent increases due largely to rapid transit ridership increases
• Current ridership levels are capacity constrained on some modes

Rapid Transit and Bus
Annual Ridership

Commuter Rail and Ferry Boat
Annual Ridership

FORECASTING RIDERSHIP
• Forecasts based on long-term past ridership with varying assumptions about the future
• Forecasts made with Regional Travel Demand Model
• Forecasts based on ridership, population and usage patterns
Annual MBTA Total Unlinked Trips (in thousands) 1991-2011 and Forecast

Annual MBTA Total Unlinked Trips (in thousands) 1991-2011 and Forecast

Low estimate (420 million annual unlinked trips) – assumes longest time horizon; treats 2006-2011 increase as part of the general trend. This estimate is the “baseline” based only on past data.

Moderate estimate (450 million annual unlinked trips) – uses past data with additional assumptions of economic factors (moderate employment and income growth), demographic factors (increasing numbers of seniors and immigrants) and relatively small responses to expected fare increases.

High estimate (500 million annual unlinked trips) – treats 2006-2011 increase as indicative of a new rapid growth in ridership, and assumes that the next ten years are like the last five years, with a higher growth rate driven by rising gasoline prices, relatively flat transit fares, and growth in employment.

Benefits:
• Long range not as susceptible to random variation
• Provides a range of estimates
• Easy to compute

Drawbacks:
• Long range susceptible to methodology changes
• Estimates do not indicate the modes where ridership demand is likely to go

Annual MBTA Total Unlinked Trips (in thousands) 1991-2011 and Forecast

Updated with data from years 2012, 2013, and 2014. MBTA ridership continues to rise within predicted levels.

Assumptions:
- Growth in overall population (MAPC projections of resident and employment populations)
- In addition to assumed growth in overall population, the characteristics and locations of the additional households lead to a predicted increase in 0-vehicle households
- Assumed growth in employment centers and TOD in general will put more destinations in reach of transit
- Changes in transit service supply (Green Line extension and Silver Line to Chelsea in no-build scenario)

Most increases (by volume) are to occur in rapid transit and bus services

Only weekday trips are considered; no implications are made about weekend/holiday service

Data Sources

- Ridership:
  - National Transit Database 2000-2013
  - Internal estimates 2014

- Population
  - Census and intercensal estimates from U.S. Census
  - 2020, 2030, and 2040 projections from MAPC

- CTPS Projections
  - Boston MPO 2040 long-range transportation plan

MBTA 14 Core Communities

Transit Usage Rate

Number of unlinked rapid transit and bus trips per resident per year
MBTA Rapid Transit and Bus Ridership 2000-2014

MBTA Rapid Transit and Bus Ridership 2000-2014

MBTA Rapid Transit and Bus Usage 2000-2014

- Usage ≠ market share
- Mode shift away from transit can decrease usage
  - increase in active modes
  - appearance of Uber/Lyft/Hubway
- Overall decrease in trips can also decrease usage
  - gentrification
  - TOD
  - work from home

Current usage shows recovery from the recession
Ridership increases are currently driven by population increases and employment/economic conditions

MBTA Rapid Transit & Bus Ridership Projections

Usage has varied a lot over the last 15 years, from a low of 240 to a high of 280.

Low estimate: another recession causes usage to drop back to 240 annual trips/resident

Medium estimate: usage remains at current levels of approximately 260

High estimate: usage increases to 280 due to increased TOD, decreased car ownership, etc

Population projections are the same for all forecasts.

• Ridership vs. Demand
  – All the presented projections are demand-based; capacity needs to increase to meet this demand
  – Current ridership numbers in all projections are assumed to be representative of actual demand; in reality, ridership is probably undercounting demand due to current capacity constraints

• Most growth expected in rapid transit and bus services
• Realistic lower bound: 14% ridership growth by 2040
• Realistic upper bound: 28% ridership growth by 2040
Considerations and Next Steps

- Commuter Rail
- Fare Policy
- Fare Changes
- Employment
- Development
- Technology
- Capacity
- Focus 4T

Draft for Discussion & Policy Purposes Only
Long-Term Recommendations

• Evaluate/update prior projections
• Perform best-practice review and establish a methodology to ensure consistent ongoing forecasting
• Establish regular internal forecasts to inform SGR, revenue, planning, and other efforts
• Construct a scalable forecasting methodology that works at different levels of interest (regional, modal, local)