

A Better Newburyport/Rockport Line

Rapid, Reliable Transit For Chelsea, Lynn, and the North Shore

Introduction

This report analyzes potential infrastructure and service improvements for the MBTA's Newburyport/Rockport Line, proposing upgrades and changes along its corridor. The FMCB's resolution in November 2019 and recent advocacy around improving service on the Newburyport/Rockport Line have increased interest in running frequent electrified rail service on the line. Many of the municipalities on the inner route are environmental justice (EJ) communities, with residents forced to decide between infrequent, costly rail service or affordable but slow bus service. The stations along the trunk should get all-day high-frequency service, electrification, fare integration, and additional infill stations. These changes would provide similar frequency and station spacing as the Red Line branch to Braintree.

We wish to acknowledge the following TransitMatters members who contributed to this report:

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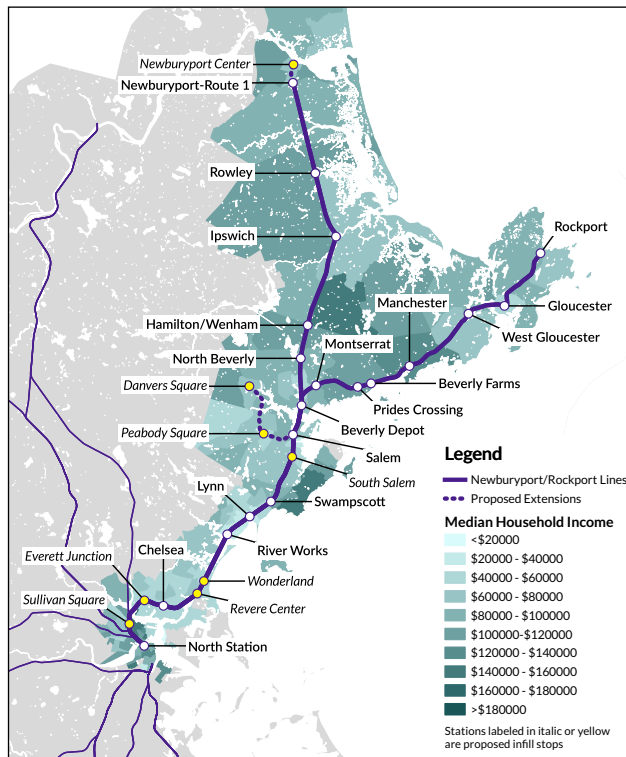
Current Situation

The Newburyport/Rockport Line, sometimes referred to as the “Eastern Route” or “Eastern Line”, is currently the third busiest line on the commuter rail, behind the Providence and Worcester Lines, and the busiest line on the north side of the MBTA Commuter Rail system. As of 2018, over 10,000 weekday passengers ride the line in each direction, on 67 trains per day.¹ Salem is the busiest Commuter Rail station outside Downtown Boston, with 2,300 boardings every weekday. Beverly is also among the busiest, with 1,600 weekday boardings. While ridership has of course decreased during the COVID-19 pandemic, the historically strong demand and needs of dense communities along the trunk line suggest a swift recovery of ridership.



Lynn’s station at Central Square serves a dense, walkable downtown with several bus connections.

MEDIAN INCOME IN TOWNS AND CITIES SERVED BY CURRENT AND PROPOSED BRANCHES OF THE LINE

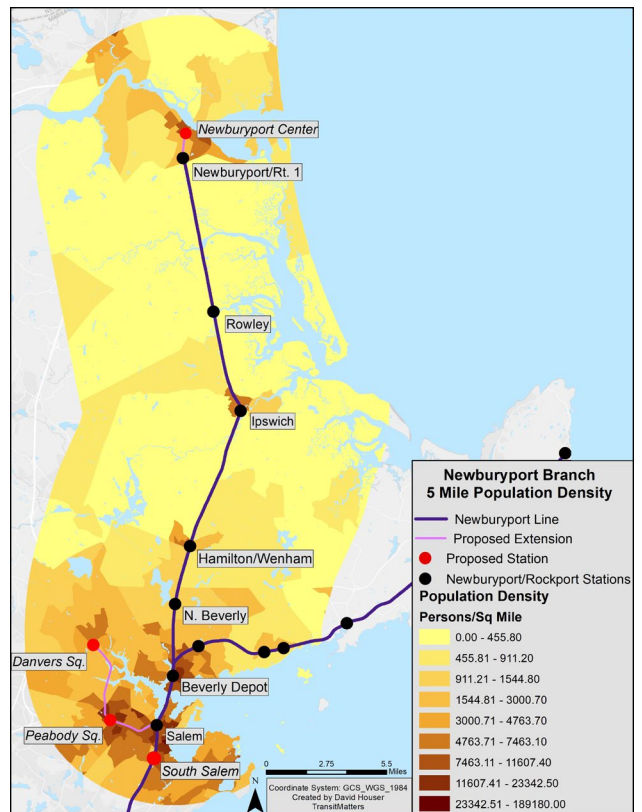
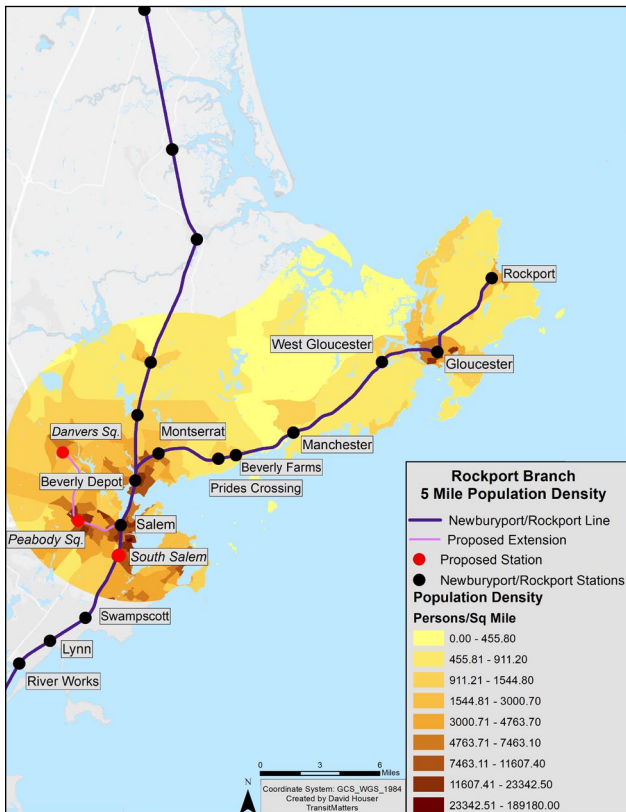
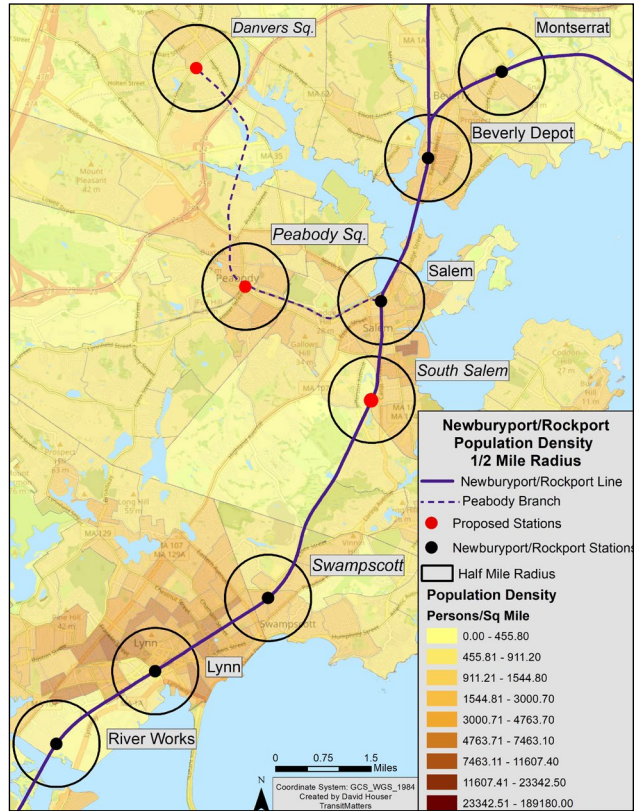
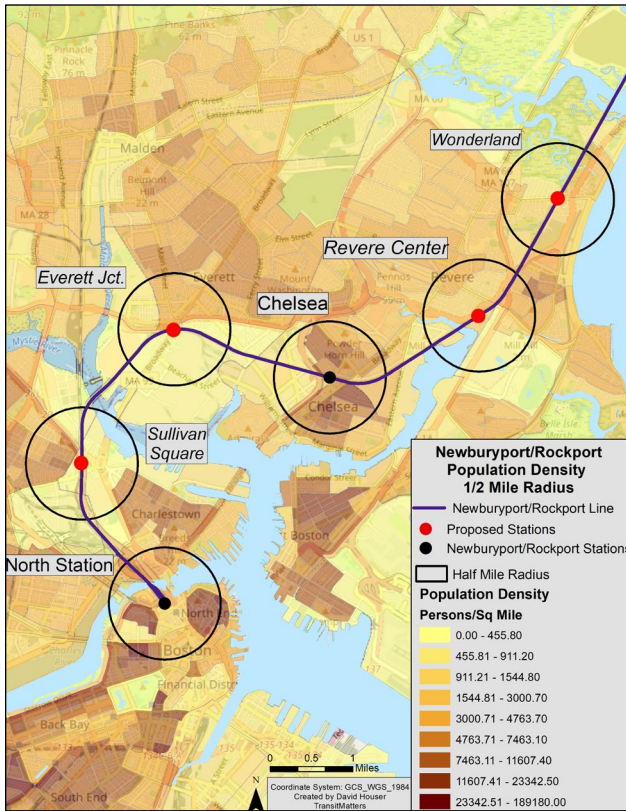


The line serves two kinds of communities: dense, walkable inner suburbs on the trunk segment from Chelsea up to Beverly (including two Gateway Cities, Lynn and Salem), and lower-density, wealthier suburban towns farther out, with the exception of Gloucester and Newburyport. Excluding River Works, the stations between Chelsea and Beverly have populations of between 4,000 and 8,000 within half a mile of each station. Of these residents, 300-600 living near each station already work close to a different station along the Newburyport/Rockport line, or near the Green or Orange lines that connect at North Station.²

1 Except where otherwise noted, all ridership data is sourced from the Central Transportation Planning Staff’s (CTPS) 2018 Commuter Rail Ridership Counts, the most recently available data. The findings are discussed in detail in the following MassDOT presentation: “Commuter Rail Ridership Counts,” January 28, 2019. <https://www.scribd.com/document/398648878/2019-01-28-Fmcb-Commuter-Rail-Ridership-Original-1>

2 Analysis performed via Longitudinal Employer Household Dynamics OnTheMap database.

POPULATION DENSITY SURROUNDING CURRENT AND PROPOSED STATIONS ALONG THE LINE



The line also serves several major employment centers, including Lynn, Salem, Newburyport, Beverly, and Chelsea. MassGeneral for Children in Salem employs over 5,000 people, while GE Aviation in Lynn employs around 4,000. There are also several colleges on the line, including Salem State University and Endicott College, which generate travel from both students and staff. Reverse-peak service to these areas is so infrequent today that people cannot use commuter rail to reach these destinations, but if service is better, then people will ride it in large numbers.

These densely populated communities also provide potential for future transit-oriented development (TOD). Lynn and Salem’s stations are both in walkable downtown areas. In Lynn, the downtown area surrounding the train station is zoned for buildings up to ten stories tall, and one large apartment building is already being built across the street from the station, which will provide housing for about 400 people and also have space for shops and restaurants.³

There is currently significant unmet demand for increased transit capacity in Chelsea. For the 111 bus, a key bus route that runs through Chelsea, 21% of weekday passenger minutes are spent in conditions that the MBTA considers uncomfortable.



Frequent overcrowding on the 111 bus, as well as other key bus routes, can be solved with improved rail service to Chelsea and other underserved communities.

“With a much more robust rail system, [we’ll be able to] make those connections both north and south that will really grow our economy and make Lynn, as it has been in the past, a gateway to the North Shore, a regional focal point for transportation and more importantly, for economic development.”

—Tom McGee, Mayor of Lynn (2019)⁴

³ Simon Rios, “Developers Have Discovered Lynn. What Comes Next?” WBUR, October 9, 2019. <https://www.wbur.org/bostonmix/2019/10/09/lynn-housing-development>

⁴ Gayla Cawley, “Lynn Mayor Thomas M. McGee Becomes Co-Chair of Commuter Rail Communities Coalition.” Lynn Daily Item, March 19, 2019. <https://www.itemlive.com/2019/03/13/mcgee-named-co-chair-of-commuter-rail-communities-coalition/>

Line Characteristics

The Newburyport and Rockport branches share a trunk line, the Eastern Route Main Line, from Boston's North Station to a point just east of Beverly Depot in Beverly, MA, 18.65 miles from North Station. The branch to Rockport is 16.65 miles long, for a total of 35.3 route miles from North Station, taking 72 minutes today; the branch to Newburyport is 17.55 miles long, for a total of 36.2 miles from Boston, taking 64 minutes today.

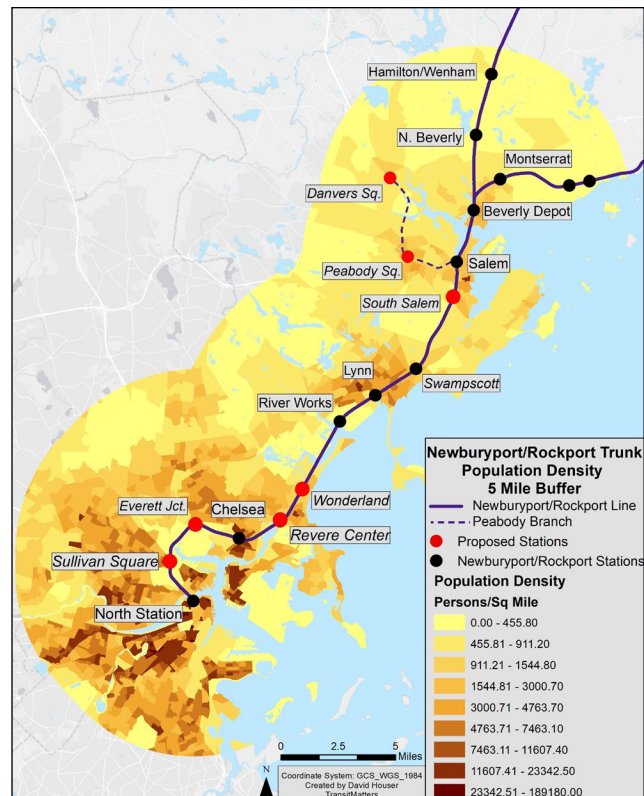
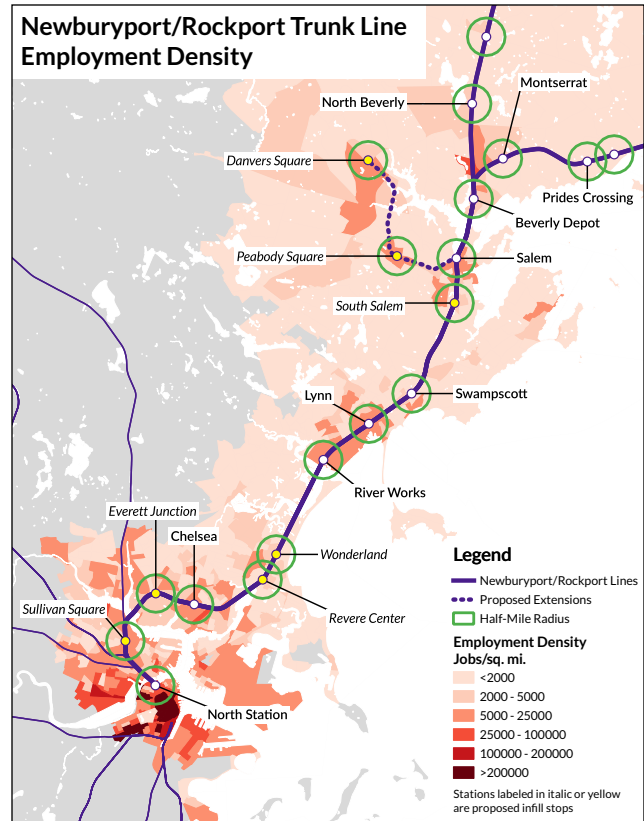
Jobs

There are 40,713 jobs within half a mile of Newburyport/Rockport line stations not including North Station, representing 14% growth between 2011 and 2017. This is faster than the pace of job growth in Boston proper (7%), and not much lower than that of tech-booming Cambridge (20%), indicating the growing importance of the Newburyport/Rockport line in regional job growth.

Interim Enhanced Diesel Service

Frequencies on the line are low relative to the density and existing ridership, which makes the line less useful south of Salem. We believe that high frequency should be a priority for Beverly-Boston, and advocate for running 30-minute service midday as the line is being modernized.

The MBTA's Fall 2020 schedule added more midday trips on the line, accounting for the near total loss of traditional rush-hour ridership amidst the COVID-19 pandemic. This includes nearly half-hourly service from Lynn. However, service is not quite clockface, which creates some friction. Operating half-hourly in a clockface manner between Beverly Depot and North Station - and hourly to each branch - could be accomplished with six trainsets, three for each branch.



Frequent, faster service on the EJ corridor unlocks access to a number of job centers and dense communities.

Required Infrastructure Investment

High-Level Platforms

Raising all platforms to provide level boarding is a priority. Depending on crowding, level boarding can cut dwell time by a minute per station. Universal high platforms also save money on EMUs, as including doors with stairs covered by removable barriers (called traps) adds costs to procurement and makes the trains slightly heavier. Excluding North Station, only four stations have full length high level platforms: Lynn, Salem, Rowley, and Newburyport; a fifth, Chelsea, is slated to have full-highs installed in 2021. New stations at River Works and Swampscott are in the early stages of planning.

Design must be pragmatic to ensure cost efficiency; form follows function. For example, it is obligatory to have shelter from the elements along the length of the platform, but this can be done with cheap corrugated tin; high-frequency regional rail stations in Stockholm use that, in a country famous for the quality of its public services.

It is essential to begin the process of designing full-high platforms for the line as soon as possible, particularly at Beverly, where rush hour trains are often delayed for several minutes. Normally this is about \$20 million per station, but at Beverly Depot, vertical circulation (stairs or pedestrian underpass) is required, raising costs to about \$30 million.

On the branches, nine out of ten stations have mini-high platforms. The tenth, Pride's Crossing, has only a low platform on one side (and is only served by peak trains in the peak direction). In total, the cost of full level boarding at these ten stations should be \$200 million; further savings are possible if some of these are reduced to single track, based on the schedule.



High-level platforms at stations like Salem (pictured) allow passengers to board and exit trains faster, speeding up overall trip times.



Beverly Depot is one of many stations on the line without high-level platforms, despite its substantial ridership.

Electrification

In keeping with the FMCB’s resolutions in 2019, the Commonwealth should immediately electrify the Newburyport/Rockport Line. Electrifying the line to Beverly would cost \$40-110 million; based on recent best-practice electrification projects, wiring the full line is \$120-400 million, based on comparable projects around the developed world.⁵

The stop spacing is 3.7 miles on the trunk line, 2.4 miles on the Rockport branch, and 3.5 miles on the Newburyport branch. Stops are already frequent on the trunk - the city of Beverly hosts four different stops - and with EMU deployment, several infill stations are warranted, discussed below. Higher speeds and more reliable service will boost already high ridership from Beverly and Salem, and greatly increase use from Swampscott, Lynn, and Chelsea.

The frequencies we call for argue heavily in favor of electrification, as electric multiple units (EMUs) are cheaper to operate than diesel locomotives and faster, thanks to their better acceleration qualities. Beyond Beverly Depot, ridership falls, but the branching makes it easy to combine lower frequency on each branch with higher frequency on the trunk, meaning electrification is still warranted.

If there is only budget to electrify as far as Beverly in the near term, then the branch lines will need to be served by short-turning diesel trains at Beverly Depot. It is not possible to run diesel trains as expresses between Beverly and Boston without severely harming reliability for Beverly-Boston local service. Dual-mode multiple units do exist, but they are expensive to purchase and maintain: the cost premium over standard EMUs is high enough that it rivals the cost of simply electrifying the branch lines. Electrifying both branch lines as soon as possible is ultimately the most economical and efficient solution.



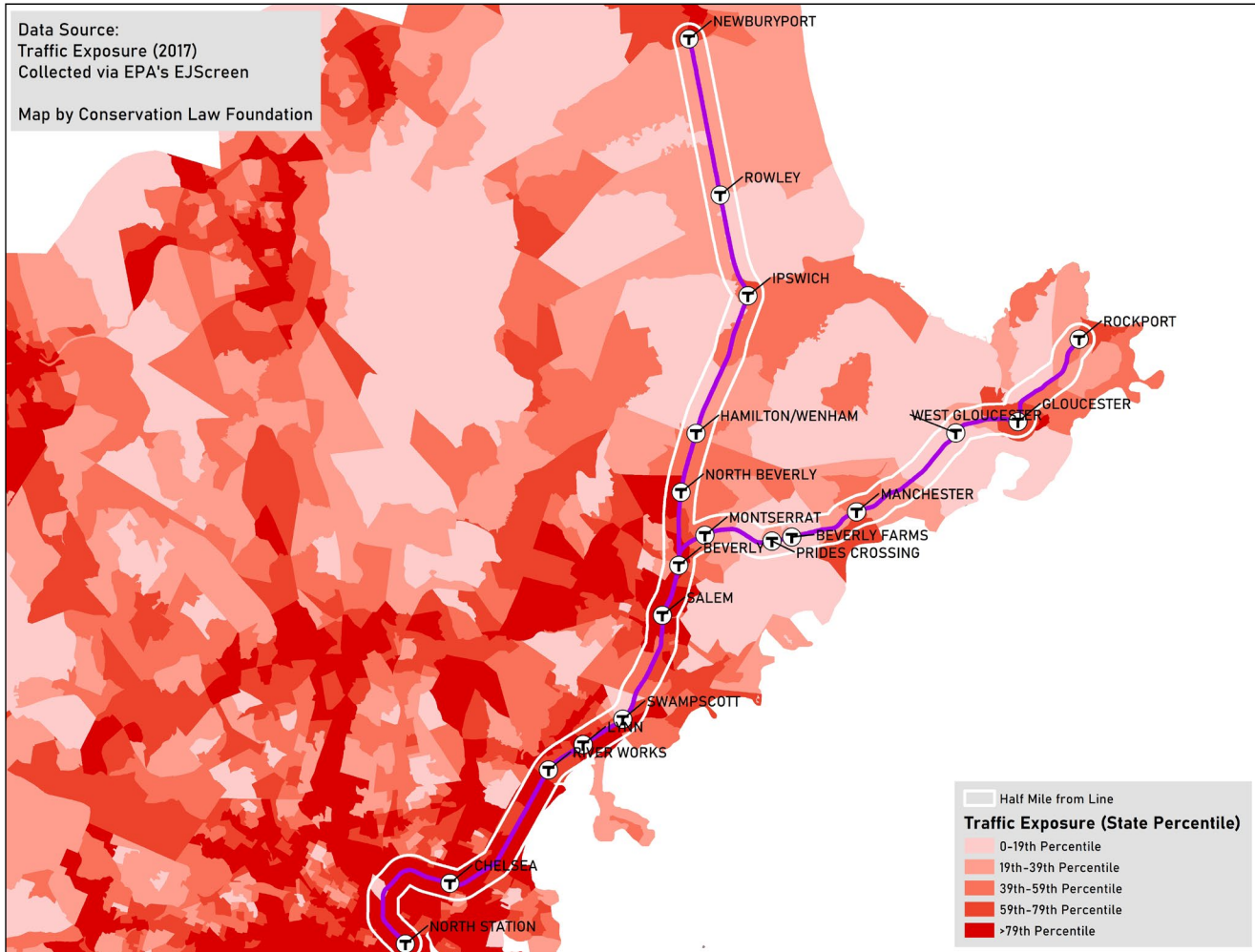
Electrification enables the use of modern trains, like those used on London’s Elizabeth Line (shown above), for faster and more reliable service.

“For the nearly quarter of a million residents living in these cities, the smell of diesel exhaust, the clacking of trains, and the sounds of brakes and horns are all that they experience of the existing rail service.”

—Sen. Brendan Crighton, Rep. Daniel Cahill, Rep. Peter Capano, Rep. Lori Ehrlich, and Rep. Donald Wong of Lynn, Marblehead, and Saugus (2019)⁶

⁵ The TransitMatters white paper, in development at the time of this printing, *Regional Rail Electrification: Costs, Challenges, and Benefits* will explore electrification costs in further detail.

⁶ Crighton, Brendan, et al. “The Case for ‘Environmental Justice Corridor’ Train Service.” *CommonWealth Magazine*, 18 Oct. 2019, <https://commonwealthmagazine.org/transportation/the-case-for-environmental-justice-corridor-train-service/>



Automobile traffic is high in communities like Chelsea, harming air quality. Electrified Regional Rail both removes pollution produced by the existing diesel rail service, and provides an alternative to driving that reduces traffic emissions throughout cities along the line.

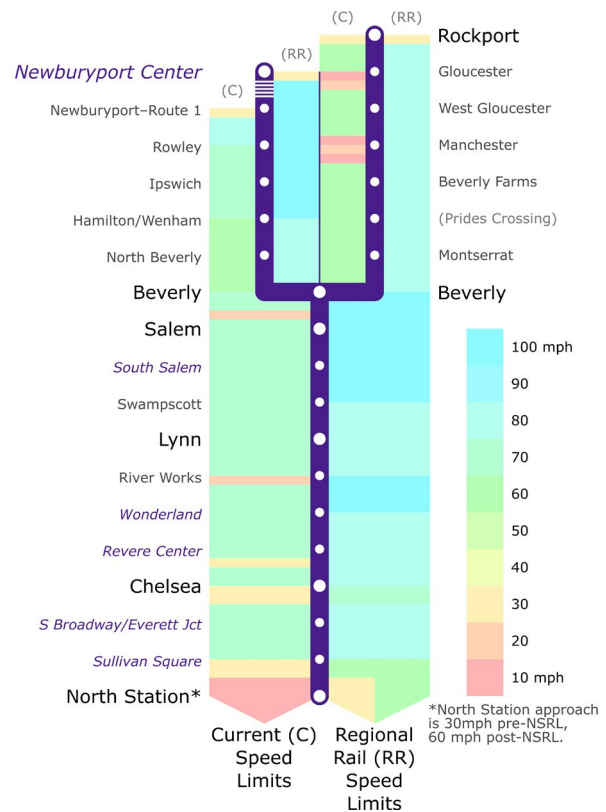
Speed

Trip times are essentially unchanged from the steam locomotive era of the 1940s and 1950s. Much of the line's low speed is due to a plethora of unjustified speed restrictions. At some places, an accident more than 50 years ago led to a slow zone; these slow zones do not improve safety in any way and are pure safety theater, and should be jettisoned. At one grade crossing, there is a complete stop requirement because there was once a noisy whistle, no longer necessary as there is modern crossing protection.

Another example of safety theater is the drawbridges, of which there are five on the Rockport branch and three on the Newburyport branch. They have a 20 miles per hour speed limit, but bridge safety is more about train weight than speed⁷, as the dynamical axle load of a modern EMU at 125 mph is lower than that of an American diesel locomotive at rest.

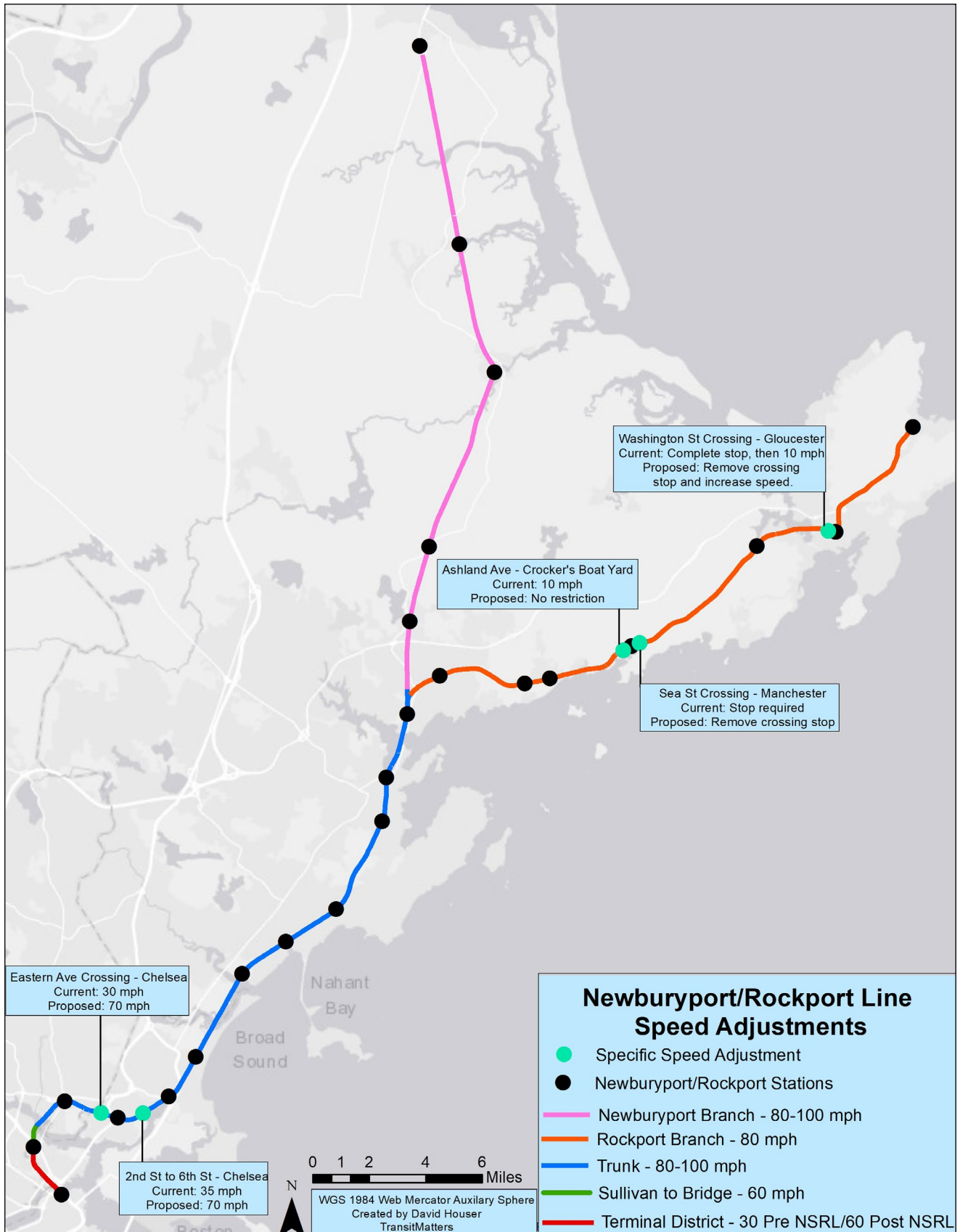
In general, the track geometry can support speeds far in excess of the current limits.⁸ Currently, the highest speed limit on nearly the entire line is 70 mph, but most of it is straight enough for 100 mph, while the curvier Rockport branch could still support 80 mph. Tracks may need to be banked more, but this is a routine track maintenance treatment, done by modern track geometry machines at a cost of a few million dollars for the entire line. On the North Station approach, the maximum speed should be 30 mph. With NSRL, the slow approach mandated by the stub end terminal would be eliminated, and trains could enter North Station at double this speed, reducing the below travel times by one minute.

CURRENT AND PROPOSED SPEED LIMITS ON THE LINE'S TRUNK AND EXISTING BRANCHES



7 While this type of practice is common on American railroads, it is generally unhelpful; in one episode from the 1970s, the Milwaukee Railroad kept operating trains on a burned-out bridge at 10 mph, but the bridge still collapsed under the heavy weight of copper ore trains; see narrative description at http://www.mrcd.org/portland_trains.html.

8 See *Regional Rail Proof of Concept: How Modern Operating Practice Adds Capacity to the Commuter Rail Network (2019)* for discussion of how to handle the stub end terminals in downtown Boston.



Double-Tracking the Bottlenecks

The trunk of the Eastern Route is mostly double-track, but a mile in Salem, including the station and tunnel under downtown, is single-track. Double-tracking the tunnel would be expensive; the most recent assessment projected a cost of \$198 million. Thankfully, it is possible to boost capacity without expanding the tunnel. Here we detail a plan for how to schedule high levels of service with minimal existing infrastructure.

The maxim we follow, based on rail planning in Switzerland, calls for integration between infrastructure, rolling stock, and the timetable: we work out the desired schedule and propose only what is needed to meet it. High punctuality levels follow, since the places where delays happen are prioritized for improvement.

Our proposed schedule permits trains to meet at South Salem - see below on infill stations. Trains in opposite directions are timed to pass each other at South Salem, where there are already two tracks, and to alternate through the tunnel, so that no doubling is needed there. With the frequency we propose, this is robust to delays of up to 2 minutes, and to some extent even 5 minutes, which is rare with electrification and high platforms. All of this assumes the extensive infill we propose - if it is not built then the timetabling becomes simpler.

To the north, the Beverly drawbridge may pose a constraint for operating clockface headways. During the summer boating season, the bridge tends to open as often as 20 times per day. It may be necessary to negotiate with maritime authorities to limit openings, as Amtrak and New Jersey Transit did at Portal Bridge near New York City.



Despite a single-tracked tunnel through Salem, the line can still achieve high-frequency service by improving infrastructure at other key locations.

On the branches, meets occur 15 minutes north of South Salem. The Rockport branch is double-track from Beverly Junction until east of the Gloucester Drawbridge, including the meet site at Manchester. The Newburyport branch is single-track from north of North Beverly to south of Newburyport station. Thus, a few miles of double track are required for meets in Ipswich, including through Ipswich station, which would cost \$30 million based on Franklin Line double tracking.⁹ Otherwise, the single-track portions of the branches could remain so, as both termini are double-track.

⁹ <https://www.mbta.com/projects/franklin-line-double-track>

Fare Structure

Today, the fare structure follows the unfortunate paradigm that commuter rail primarily serves commuters from the suburbs to downtown. The means two things:

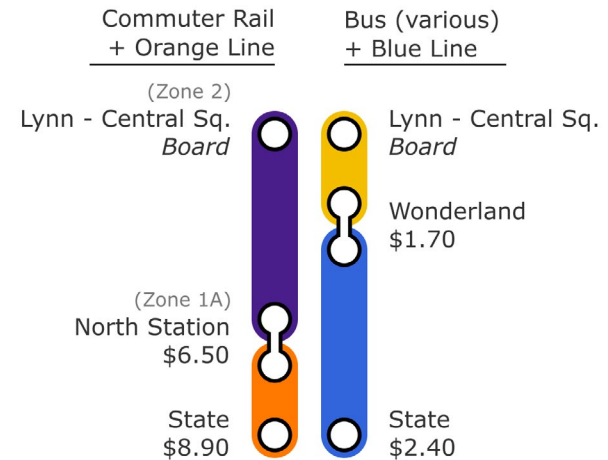
1. Commuter rail charges a premium fare beyond zone 1A, which only includes Chelsea. People beyond have to pay \$6.75 to ride commuter rail to Downtown Boston, but if they ride slow buses they only pay \$2.40. A six-month pilot began in July 2020 adding Lynn to zone 1A, and must be made permanent.
2. There are no free transfers. Even from Chelsea, commuter rail riders who connect to a bus or subway service at North Station have to pay a second fare.

Best industry practice is to integrate the fares, so that neither of the above problems exists. Fares must depend solely on where one travels: all trains and buses must have equal fares within a prescribed area, such as a flat fare within the Route 128 ring, and transfers must be free. The reason this has not been done in the Boston area is that historically, transportation planning was unequal, segregating middle-class commuter rail from working-class buses.

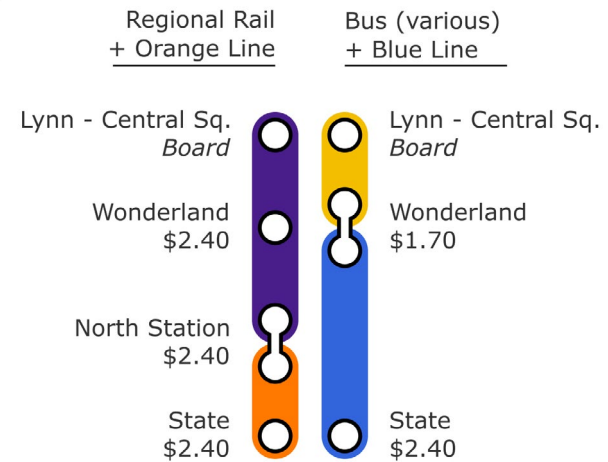
Free transfers are particularly critical for inner areas of the Newburyport/Rockport line, for a number of reasons:

1. This line segment runs in an urban area in an ideal setting for bus transfers, with riders likely to transfer from buses.
2. At the city center end, the line only serves North Station, and so requires further connections to buses or the subway to reach Back Bay, the Seaport, Kendall Square, and most of Downtown Boston.
3. The residents of Chelsea and Lynn have low average incomes, making them more sensitive to differences in fares between modes of transportation.

A MassINC report finds that housing and transportation costs account for over 45% of Lynn residents' annual expenses. Reduced fares are thus an important means of reducing financial burdens.¹⁰



Under the current fare system, the same journey from downtown Lynn to downtown Boston costs nearly four times as much using commuter rail versus by bus and subway lines.



Under the proposed fare system, traveling the same distance costs the same, regardless of mode used.

¹⁰ Corley, Tracy A, et al. "From Transactional to Transformative: The Case for Equity in Gateway City Transit-Oriented Development." MassInc, May 18, 2020. <https://massinc.org/research/equity-report/>

Station Access

Modern station design doesn't need to emphasize park-and-rides and automobiles. Quality attention to bus connections can be enhanced with bus shelter, good wayfinding, and timed connections. Good pedestrian and bicycle access does not need to be costly.

Station access along the line will benefit from a series of local infrastructure projects focusing on pedestrian and bike access in these towns. Salem has improved pedestrian access and protected bicycle lanes along Essex Street with a grant from the Shared Streets & Spaces Program. Dedicated bike lanes in Chelsea have been funded by the same program and the City of Beverly is submitting an application to reconstruct the 1.3 mile Bridge Street. These improvements will further boost pedestrian and bike access to MBTA commuter rail stations along the line.

Station walkability and bikeability can yield large increases in potential ridership. A recently developed tool¹¹ by MIT researchers illustrates this potential: the number of potential riders in walksheds or bikeshed can double if local pedestrian and bicycle accommodations are improved.



Lynn station includes a busway that allows for passengers to easily transfer between rail and local bus routes.

Nearly all stations have retail, services, and/or employment centers in walking distance. This is true even in the suburbs, owing to the placement of stations in or near historic town centers, though the far outer Newburyport branch, Montserrat, and Prides Crossing have few; only West Gloucester has none. Extending the Newburyport branch to the historic core would reach substantial retail and job locations. This suggests significant potential to capture trips beyond those ending at Boston's downtown, not only within the trunk line, but in the branches as well.

¹¹ <http://boston.transit-access.com>

TRANSIT CONNECTIONS, PARKING, AND AMENITIES NEAR STATIONS

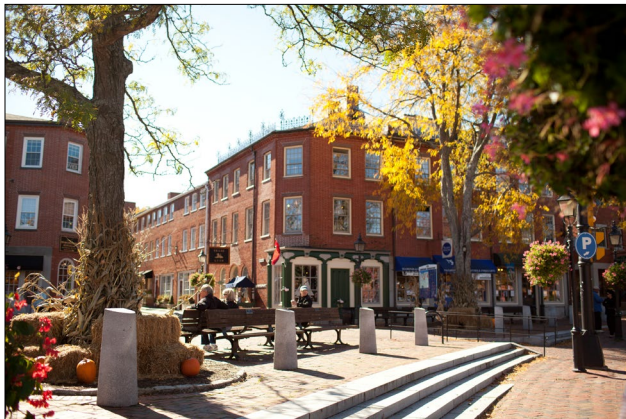


Local Walkability

Several stations are located near key local services and regional attractions. Lynn Central Square is located in the heart of downtown Lynn, within walking distance not just to many apartments and retail but also the following institutions:

- » **Arts:** LynnArts and the Lynn Memorial Auditorium
- » **Education:** Lynn Vocational Technical Institute and the North Shore Community College
- » **Civic buildings:** the Lynn Public Library, the District Court, and the YMCA.

However, the station has wayfinding issues, with poor or confusing signage leading visitors in the wrong directions out of the station. Downtown Salem is also very accessible from its station, with amenities such as its waterfront, the Peabody Essex Museum, and several historic buildings.



Newburyport's downtown and waterfront would be served by extending the existing line to the north.

Farther out, there is less development near each station, but there are still destinations to visit for non-9-to-5 commuter ridership:

- » **Manchester-by-the-Sea** has Singing Beach.
- » **Gloucester** is close to its waterfront activities and the Cape Ann Museum.
- » The popular tourist spots of **Rockport** are close to the station.
- » **Ipswich** is not walkable to the beach, but there is a seasonal bus connection, which should be run year-round with timed connections to the train.
- » Downtown **Newburyport** has a waterfront area and a main street; we propose reactivating rail service to downtown, in lieu of today's operations, which stop a mile short.



Rockport's beach and Main Street are a short walk from the rail station.

Infill Stations

The urban characteristic of the inner section of the line argues in favor of a stop spacing similar to that on the Fairmount Line. This requires electrification, because it boosts acceleration and allows trains to make many stops without unduly slowing down. It also requires fare integration, as passengers in Chelsea, Revere, and Salem would otherwise stay on slower but cheaper buses.

Sullivan Square (East Somerville)

Sullivan Square connects to the Orange Line, permitting faster trips to Wellington and Malden than going via North Station. It also has two key bus routes, one of which serves Kendall Square, and is near dense urban development in East Somerville. There are 6,041 jobs within half a mile.

Everett - South Broadway/Everett Junction

A stop near South Broadway and Sweetser Circle would intersect with multiple high-ridership buses and a proposed BRT corridor covering buses 104, 105, 109, and 110. This site is close to Encore Casino, the Gateway Center mall, and a proposed pedestrian bridge to Assembly Square; there are 3,621 jobs within half a mile.

Wonderland - Revere Street

A Wonderland stop would connect to several bus routes and serve planned and potential development. Either one of these stations could be constructed in Phase One. The density of people and traffic is such that two separate stations are justifiable, one to the south at Winthrop Avenue or VFW Parkway and one to the north at Revere Street or near Wonderland. Revere Street would be closer to dense housing than the Blue Line. There are also 1,060 jobs within half a mile.

Revere Center - Winthrop Avenue (Revere Beach Parkway) & Route 1A

Revere has heavy demand for north-south transit service on the buses and the Blue Line, which is located near the ocean on an old railroad right-of-way far from where most people live. A station at Winthrop Avenue would provide a better connection to the center of Revere than the Blue Line. There are 1,947 jobs within half a mile of this location.

River Works (Lynn)

This station already exists, but only for the use for workers at the General Electric factory nearby, and is only served by a few trains per day. However, it is slated to open for the general public, contingent upon the opening of an already-permitted development to the east, adding 1,260 apartments and 7,800 square feet of retail in six buildings.¹² This is on top of the existing 4,582 jobs within half a mile.

South Salem - Ocean Avenue and Broadway

South Salem would serve destinations far from the downtown station, including El Punto and Salem State University. There are three possible locations, but Ocean Avenue is the most attractive as it has the most residential development in proximity and would better serve the university. It has 2,386 jobs within half a mile, and would also generate student travel.

With bus or shuttle connections, North Shore Medical Center would be accessible as well; currently, the hospital can be accessed via the 450 bus route, but service is infrequent.

¹² <https://www.bldup.com/projects/lynn-gear-works-redevelopment>

Bus Connections

Trains must operate as part of an integrated transit system alongside buses, rather than as two separate systems. This means the following reforms:

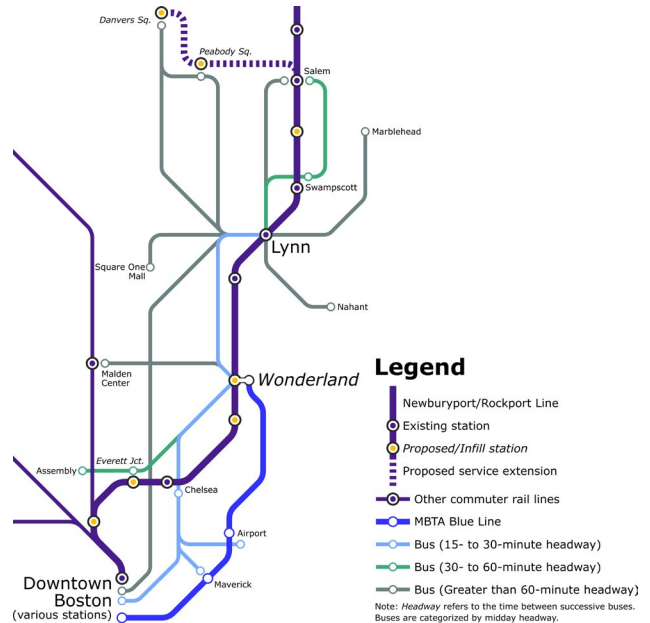
- » **Fare integration:** buses and trains should charge the same fare within a specified zone (such as within 128, or in farther out fare zones for the suburbs), with free transfers.
- » **Renewed focus:** Bus route changes to encourage feeding the train stations, both the existing stations and proposed infill.
- » **Schedules for timed transfers:** The trains should run every 15 minutes all day, not counting Peabody Branch restoration, and so buses should run every 15 or 30 minutes and connect with short transfer windows.

This represents a shift away from the current paradigm. In today's form, commuter rail is only for the middle class, and buses outside of the most central parts of Boston and Cambridge are left for the poor. To transition to Regional Rail, the Commonwealth must break this way of thinking and make sure that people in Lynn can get on a commuter train the same way they would on a bus, depending on what gets them to their destination faster.



The Silver Line 3 BRT route provides service to downtown Boston, Logan Airport, and the Seaport, and connects to the Newburyport/Rockport line in Chelsea.

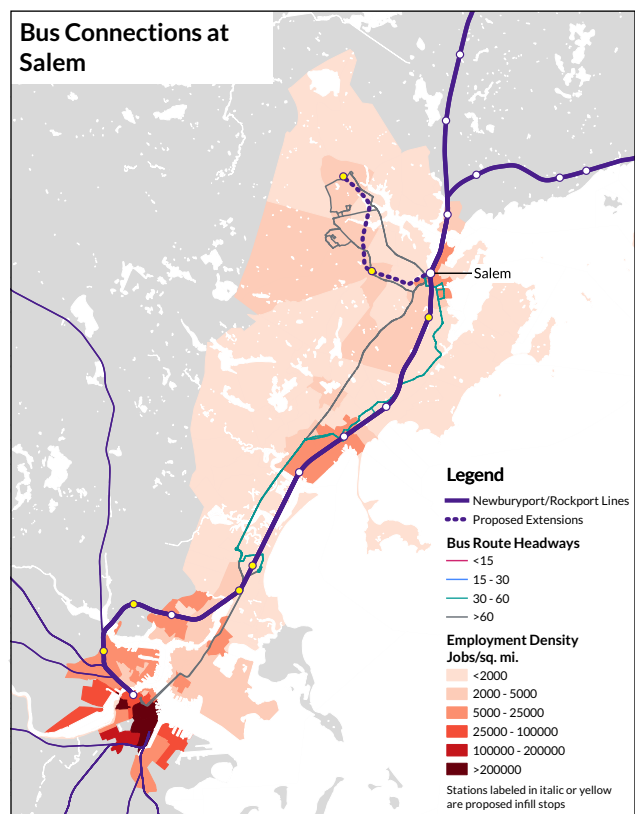
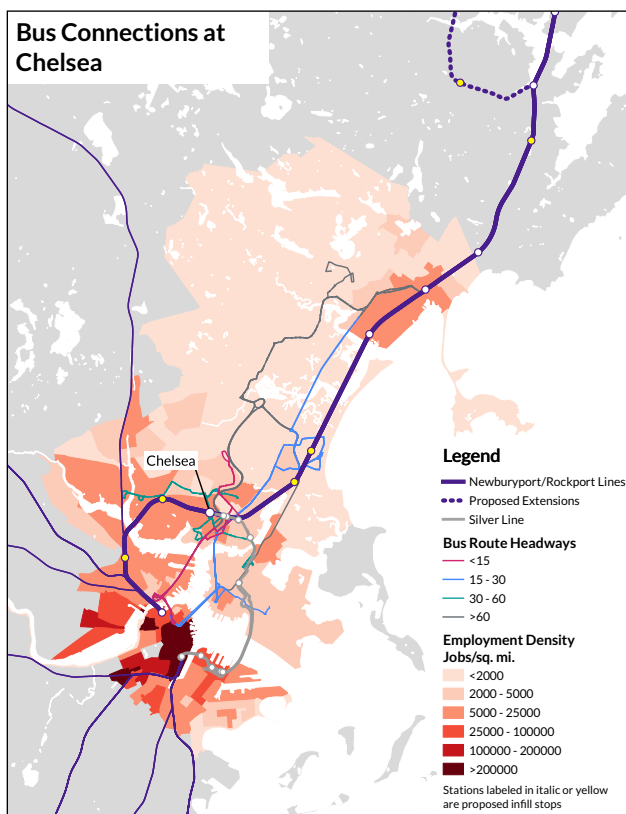
BUS CONNECTIONS AT LYNN STATION AND THE PROPOSED WONDERLAND STATION



Thankfully, the existing and proposed stations on the inner Newburyport/Rockport line already intersect with many bus routes. In particular, Chelsea provides a connection to the Silver Line 3 (SL3) BRT route, and the current station is in close proximity to the 111 bus route, one of the busiest in the system.

The North Shore's main bus hubs are Salem, Lynn, Chelsea, and Wonderland. Our optimized rail timetable allows trains to serve Salem, Lynn, and Chelsea in such time that buses running every 15 minutes could provide fast connections and turn around quickly. In all cases, it matters that trains serve the station in both directions at similar times, 2-4 minutes apart, so buses can be scheduled to connect to trains in both directions.

On the branch lines, there already are some timed connections, at Newburyport and Gloucester. However, these routes have low frequency and few riders. Improving this situation will require the MBTA and regional transit authorities (RTAs) to add buses and drivers on these feeder routes. Although the center of Beverly has generally good access from Beverly Depot, many key local destinations are out of reach, calling for improved shuttle connections. For instance, Beverly Hospital is on the edge of walkability from Montserrat Station.



Service Restoration

One disused branch of the Eastern Line network is a strong candidate for restoration: the 4.6 mile Peabody/Danvers Branch to Danvers Square. We also recommend restoring a mile of the historic Newburyport branch into downtown Newburyport. Both restorations would fit within the above-described schedule of timed meets at South Salem.

Newburyport

The Eastern Line originally served Newburyport's walkable core en route to New Hampshire and Maine, until service was truncated to Ipswich in the late 1970s. Tracks and service were restored north of Ipswich in the late 1990s, but the terminus was again truncated to a park-and-ride off of Route 1 in Newbury, a mile south of Downtown Newburyport. However, the right-of-way is intact through Newburyport as a popular bike/pedestrian trail, which is wide enough to accommodate tracks and an altered trail. The existing station, which already has a full-high platform and hosts the branch's yard, should be kept in service and renamed Newburyport-Route 1 to serve park-and-ride demand and planned development.

Service restoration to Downtown Newburyport fits the proposed timetable, only cutting the turnaround time from 16 to 14 minutes, still enough time for the driver to rest as needed, turn the train, and recover from delays.



Service can be provided to Newburyport's downtown at one of these possible locations, by extending the line alongside an existing path.

Peabody Branch

Peabody has expressed interest in commuter rail service in recent years, and has proposed several developments near potential future stations as part of its housing production plan.¹³ Hundreds of housing units are being proposed for an area within a 10-15 minute walk of the proposed station site in Peabody's historic core. We recommend that an extension serving Peabody and Danvers begin as soon as possible as part of a broader Regional Rail transformation. The 2004 North Shore Transit Improvements (NSTI) study¹⁴ also supported restoring the Peabody branch.

The Peabody Branch would require reactivation of the junction at Salem and track restoration through Peabody Square, across the Waters, Crane, and Porter Rivers into Danvers Square. The NSTI study also examined an alternative route, from Peabody Square to the North Shore Mall. This alternative should be explored as well, particularly if the right of way to Danvers cannot be activated; that section was recently converted to a rail trail and may require right of way expansion.

As the branch to Peabody warrants a rush hour train every 15 minutes, natural interlining lets trains run every 7.5 minutes between Salem and North Station, giving high frequency to the dense trunk line. Peabody trains would serve the same station complex as the current Salem station, but on a new platform; thus, it is still possible to run a train through the single-track mile-long tunnel every 7.5 minutes in both directions and meet at South Salem.



Downtown Peabody could receive new service using a reactivated rail branch through Peabody to Danvers.

In November 2020, the City of Salem selected a developer to add a mixed-use development within the station complex. While we applaud the addition of new housing and amenities near transit, there is a danger that construction of this building could jeopardize access to the Peabody branch from the main line. It is critical to safeguard the route to permit trains to run through unimpeded in the future; the development should go next to the tracks, but not on them.

¹³ A memorandum from the Peabody planning department to the City Council discusses this project: <https://bloximages.chicago2.vip.townnews.com/salemnews.com/content/tncms/assets/v3/editorial/3/0f/30f8afb8-ea16-11e9-8f79-2fe7f96ba1e8/5d9d06013cb51.pdf.pdf>

¹⁴ https://web.archive.org/web/20130116090507/http://mbta.com/about_the_mbta/t_projects/default.asp?id=1012#project

Train Scheduling

Trains should operate between 5 am and 1 am, 7 days a week. Scheduling should be consistent with recurring clock face intervals (e.g., on a 30-minute headway, if a train departs Gloucester at 1:14, the next train in the same direction will be at 1:44, then 2:14, repeating). Frequency should be the same for both inbound and outbound trains.

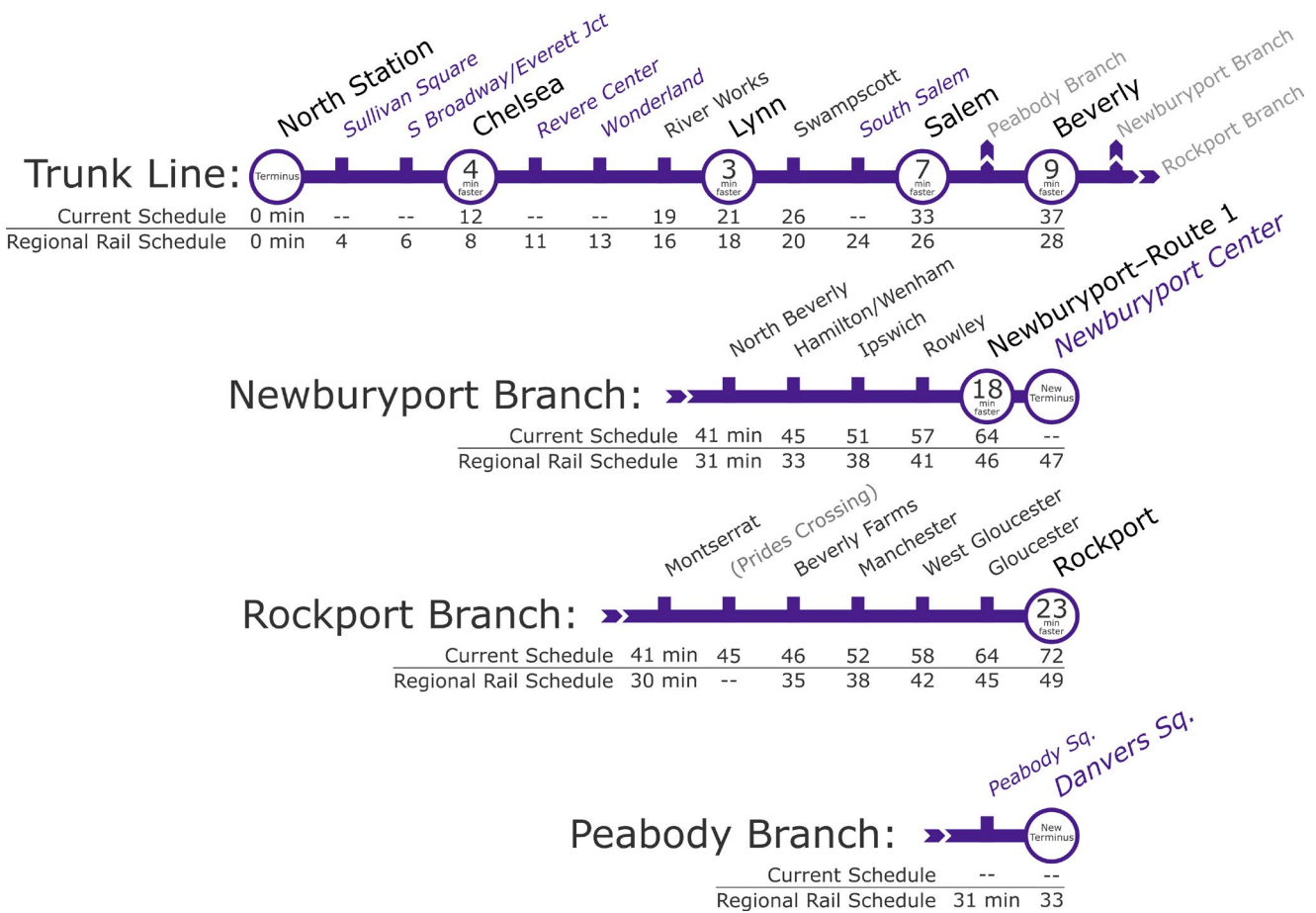
Fleet Requirement

Half-hourly service to each of Newburyport and Rockport requires four train sets per branch, or eight in total. At full buildout, quarter-hourly service to Peabody requires another six train sets, for a total of fourteen (a train every 7.5 minutes) on the shared segment to Salem.

PROPOSED FREQUENCIES FOR EACH BRANCH

Station Segment	Peak	Off-Peak
NORTH STATION - SALEM	7.5 MIN	10 MIN
SALEM - PEABODY/DANVERS	15 MIN	30 MIN
SALEM - NEWBURYPORT	30 MIN	30 MIN
SALEM - ROCKPORT	30 MIN	30 MIN

PROPOSED TRAVEL TIMES WITH IMPROVED REGIONAL RAIL SERVICE



PROPOSED TIMETABLES FOR EACH BRANCH, COMPARED WITH EXISTING SERVICE

NEWBURYPORT		
Station	Proposed	Current
NORTH STATION	0:00	0:00
<i>Sullivan Square</i>	0:04	--
<i>S. Broadway/Everett Jct.</i>	0:06	--
CHELSEA	0:08	0:12
REVERE CENTER	0:11	--
WONDERLAND	0:13	--
RIVER WORKS	0:16	0:19
LYNN - CENTRAL SQ.	0:18	0:21
SWAMPSCOTT	0:20	0:26
<i>South Salem</i>	0:24	--
SALEM	0:26	0:33
BEVERLY DEPOT	0:28	0:37
NORTH BEVERLY	0:31	0:41
HAMILTON/WENHAM	0:33	0:45
IPSWICH	0:38	0:51
ROWLEY	0:41	0:57
NEWBURYPORT-ROUTE 1	0:46	1:04
<i>Newburyport Center</i>	0:47	--

ROCKPORT		
Station	Proposed	Current
NORTH STATION	0:00	0:00
<i>Sullivan Square</i>	0:04	--
<i>S. Broadway/Everett Jct.</i>	0:06	--
CHELSEA	0:08	0:12
REVERE CENTER	0:11	--
WONDERLAND	0:13	--
RIVER WORKS	0:16	0:19
LYNN - CENTRAL SQ.	0:18	0:21
SWAMPSCOTT	0:20	0:26
<i>South Salem</i>	0:24	--
SALEM	0:26	0:33
BEVERLY DEPOT	0:28	0:37
MONTERRAT	0:30	0:41
PRIDES CROSSING	0:33	0:45
BEVERLY FARMS	0:35	0:46
MANCHESTER	0:38	0:52
WEST GLOUCESTER	0:42	0:58
GLOUCESTER	0:45	1:04
ROCKPORT	0:49	1:12

PEABODY/DANVERS		
Station	Proposed	Current
NORTH STATION	0:00	0:00
<i>Equivalent service as the proposed Newburyport and Rockport timetables above, making all stops between North Station and Salem.</i>		
SALEM	0:26	0:33
<i>Peabody Sq.</i>	0:29	--
<i>Danvers Sq.</i>	0:34	--

What is Regional Rail?

MBTA Commuter Rail operates as a mid-20th century service with a mid-20th century business model. It reflects out of date biases about where people and jobs are located, and about how people desire to get from one place to another. Many people no longer work on a strictly 9 am to 5 pm weekday schedule, and many more want convenient and frequent train schedules that respond to the needs of their daily lives.

“The current Commuter Rail paradigm costs way too much money for way too little ridership.”

— MBTA FMCB Chairman Joe Aiello, 11/20/17

Our current approach to Commuter Rail, as a business model, fails to offer its rider/customers the service they want and need. As a result it contributes to the region’s worsening traffic congestion, keeps Gateway Cities isolated during most of the day, and exacerbates income inequality since the inadequate service compels many to drive – for lower income people, the high cost of owning, maintaining and driving an automobile can have a crippling effect on their ability to make ends meet.

Public transit must be frequent all day, not just at rush hour. A Regional Rail system would have trains running at least every half hour all day in the suburbs and at least every fifteen minutes in Boston and other Inner Core communities.

Regional Rail requires both frequent all day service, accessible platforms and smarter equipment to provide the service. That means high-level platforms at stations to simplify and speed up boarding and alighting. It also means electrification of the system, enabling use of Electric Multiple Units to replace the current push/pull diesel fleet. EMUs will be more reliable and less expensive to maintain, will provide riders with speedier trips, and will provide better service without polluting the air around them.

A highly functioning Regional Rail system includes five critical components:

- » **Systemwide electrification** and the purchase of high-performance electric trains.
- » **High platforms**, providing universal access and speeding up boarding for everyone.
- » **Strategic infrastructure investments** to relieve bottlenecks.
- » **Frequent service all day**: every 30 minutes in the suburbs and every 15 minutes in denser neighborhoods.
- » **Free transfers** between regional trains, subways, and buses, and fare equalization with the subway in the subway’s service area.

And one useful component that will complete cross-region mobility:

- » While not critical to implementing a Regional Rail system, **the North-South Rail Link (NSRL)** between North and South Stations, allowing service between any two stations with either a direct trip or a single, seamless transfer, would be a highly useful enhancement providing the flexibility and connectivity to which many riders and potential riders would be drawn.

MORE INFORMATION AND REPORTS AVAILABLE AT:
[HTTP://REGIONALRAIL.NET](http://REGIONALRAIL.NET)

<i>REGIONAL RAIL FOR METROPOLITAN BOSTON</i>	<i>WINTER ‘18</i>
<i>REGIONAL RAIL PROOF OF CONCEPT</i>	<i>FALL ‘19</i>
<i>REGIONAL RAIL PHASE 1</i>	<i>SUMMER ‘20</i>
<i>PROVIDENCE/STOUGHTON LINE</i>	<i>SPRING ‘20</i>
<i>FAIRMOUNT LINE</i>	<i>FALL ‘20</i>
<i>NEWBURYPORT/ROCKPORT LINE</i>	<i>WINTER ‘21</i>

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MBTA REGIONAL RAIL

PROPOSED PHASE 1 IMPROVEMENTS



TRANSITMATTERS

TRANSITMATTERS.ORG



IMPROVEMENTS



INCREASE IN PEAK & OFF-PEAK SERVICE

UNIVERSAL IMPROVEMENT

- 15-minute all-day frequencies on Early Action lines
- 30-minute all-day frequencies everywhere else by 2026
- Increased span of the frequency (frequency is higher all day)
- Frequency will be the same inbound and outbound



ELECTRIFICATION

Adding electric power infrastructure to a line.
→ *Faster service and decrease in CO2 emissions*



UPGRADE TRACK AND SIGNALS

Renewing signalling and infrastructure on a line.
→ *Faster, more frequent, and more reliable service*



REMOVE SPEED RESTRICTIONS/ INCREASE SPEEDS

Eliminate outdated speed restrictions.
→ *Faster, more frequent service*



PASSING TRACK

Adding second tracks to single-track segment.
→ *More frequent, more reliable service*



DOUBLE TRACK SECTIONS

Add segments of double track.
→ *More frequent, more reliable service*



TRIPLE TRACK SECTIONS

Add segments of a third track.
→ *Faster, more frequent, more reliable, more accessible service*



SWITCH UPGRADES

Replacing and upgrading switches.
→ *More frequent service, more reliable service*



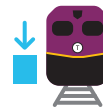
NEW HIGH-LEVEL PLATFORM

Building platforms that line up with most or all of a train.
→ *Faster trips (less time at the station)*



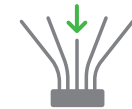
2ND PLATFORM

Add platforms on opposite side of single platform stations.
→ *Faster, more frequent, more accessible, more reliable service*



DEDICATED PLATFORMS

Assign specific terminal platforms to all lines or groups of lines. For example, currently Providence/Stoughton, Franklin, Needham, and Amtrak all share platform groups.
→ *Faster and more reliable service*



IMPROVE ACCESS POINTS AND SAFELY INCREASE SPEEDS NEAR TERMINAL STATIONS

Increase speeds from 10 to 30 mph.
→ *Increased system capacity and faster service, more frequent service*



NEW STATIONS

Building new stations along current lines.
→ *Serving Gateway cities, universities and hospitals, access for low income populations*



NEW ELECTRIC TRAINS

Buying electric multiple unit (EMU) trains.
→ *Faster service, more frequent service, more reliable service, decrease in CO2 emissions*

OUTCOMES

★ A more resilient network

By adding more off-peak service that better aligns with healthcare workers and other essential workers, Regional Rail becomes a service that is more resilient in future pandemics or health emergencies. By moving toward zero-emission vehicles with more open layouts, the MBTA better protects these workers by cutting pollution that makes people more vulnerable to disease and giving riders more space for social distancing.

Faster service

Electric trains enable faster service, which means valuable time saved and more trains throughout the day.

More reliable service

Electric trains are up to 25 times more reliable than our current diesel fleet, this means dependable, reliable service and lower maintenance costs.

Decrease CO2 emissions

More frequent service, even on diesel trains draws commuters out of single-occupancy vehicles; new electric trains emit no pollution in the communities they run through.

More accessible service

Moving to high-level platforms enables all with reduced mobility to access the train—whether you use a wheelchair, have a stroller, or just heavy luggage—it makes life easier.

More frequent service

Frequent all-day service means the train works around your schedule, not the other way around; this also means less crowding as riders have more choice on which train to take.

Better connect gateway cities and environmental justice communities

The current system either passes by these communities or provides inadequate service, Regional Rail means more equitable transit that serves all.



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