

April 2021

The Economic Benefits of Regional Rail Investment in Metro Hartford-Springfield

THE GAP

Introduction

This study presents a business case for two proposed rail improvements in the Connecticut Valley region: the completion of the bi-state Hartford Line and implementation of the East-West Rail project in Massachusetts. These improvements, which intersect at the traditional regional crossroads of Springfield Union Station, would connect to other current and future rail improvements in New England. The analysis presented here examines the economic potential of the Hartford-Springfield region and the ability of enhanced passenger rail service to help achieve that potential.

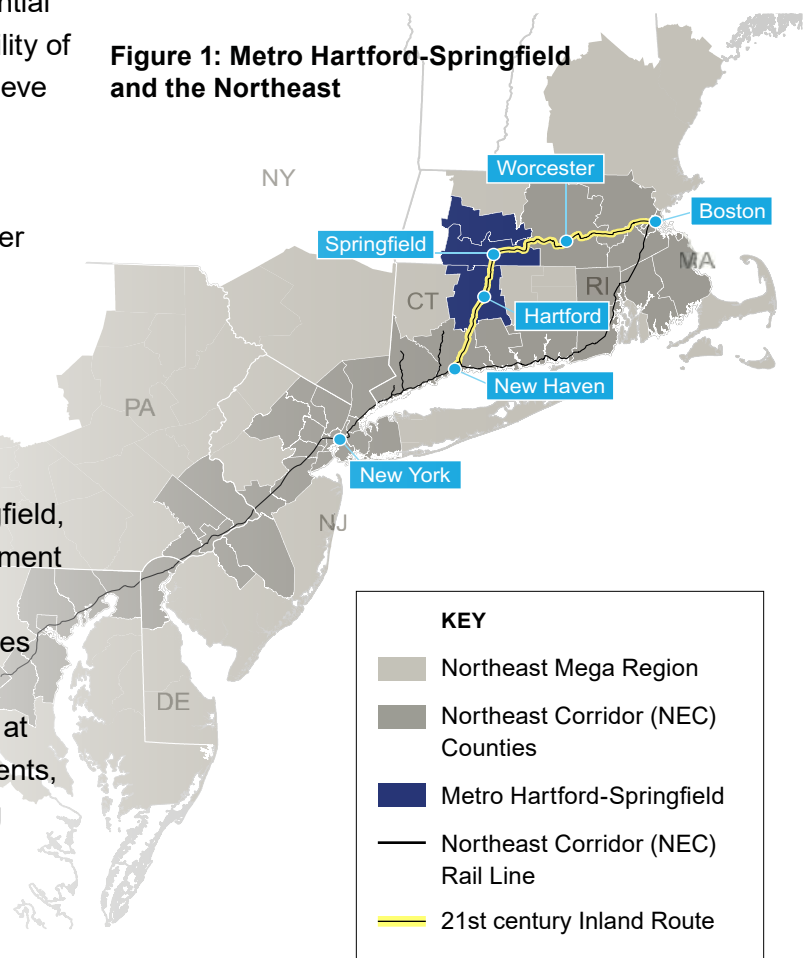
This report presents the study's background and key findings in a narrative format. A longer and more detailed analysis, including the documentation of all assumptions, methods, and results, is available in the accompanying Technical Appendix.

The Hartford Line, a regional rail service connecting New Haven, Hartford, and Springfield, opened in 2018, following a significant investment in the corridor's rail infrastructure and rolling stock.¹ The work remaining to be done includes electrification, additional rolling stock, a replacement of the Connecticut River Bridge at Windsor Locks, double-tracking of key segments, five new or relocated stations, and upgrading the downtown Hartford rail viaduct. These

improvements, estimated to cost up to \$3 billion, would boost speed, reliability, and access.

The East-West Rail project in Massachusetts would connect Springfield to Worcester and Boston, and potentially westward to Pittsfield. These services nominally exist today, but with only one train in each direction (Amtrak's Lakeshore Limited), unreliable performance, and uncompetitively slow speeds—about an hour

Figure 1: Metro Hartford-Springfield and the Northeast



The analysis presented here examines the economic potential of the Hartford-Springfield region and the ability of enhanced passenger rail service to help achieve that potential.

longer than driving in mid-day conditions. While several alternatives remain in play, an investment in the \$4 billion range would cut nearly an hour off the Springfield-Boston trip, enable at least 10 round trips per day, and provide comfort and reliability. In Boston, the train would stop not only at South Station, with its instant connections to the Red and Silver Lines and much of downtown accessible on foot, but at the key destinations of Back Bay, the Longwood Medical Area (Lansdowne Station), and the future multimodal hub at West Station.²

Together, the East-West Line and the completed Hartford Line would reconstitute a 21st century version of the old Inland Route—regular train service from Boston to New York *via* Worcester, Springfield, Hartford, and New Haven—which the region has lacked for decades. It would create a regional network of great versatility and economic potential, combining intercity service all along the corridor with high-frequency, transit-like service in the Hartford-Springfield core.³ The key findings of this study may be summarized as follows.

Decades of Disinvestment

1. **A distinct and consequential region.**

Metro Hartford-Springfield is a distinct and consequential economic region, with a population of 1.6 million, a GDP of \$120 billion, 20 colleges and universities, two historic downtowns, and New England's second largest airport. As a metro area, it would rank among the 40 largest in the US. Nearby Worcester and New Haven have combined metro populations of 1.8 million. Yet the Hartford-Springfield economy is isolated and lagging.

2. **A gap in the rail/transit network.** Metro Hartford-Springfield lost most of its intercity rail service, starting in the 1970s. Compared

to the Northeast Corridor and other US metro areas, Hartford-Springfield has undergone a prolonged period of low rail use and low overall rail/transit use--both in general and among those who work in information, finance, and professional services jobs. These are the jobs that are particularly attracted to rail/transit connectivity elsewhere in the Northeast.

3. **A structural shortfall.** Since 1990, annual job growth in Metro Hartford-Springfield has lagged far behind that of the Northeast Corridor as a whole, representing about **130,000 jobs not created**. Job growth has been particularly weak in the key sectors of information, finance, and professional services, accompanied by aging housing stock, slow housing construction, and slow population and wage growth. In short, Metro Hartford-Springfield has fallen structurally behind the rest of the Northeast Corridor.

The Economic Opportunity

4. **Missing growth sector jobs.** Conservatively, some 20,000 to 40,000 jobs in information, finance, and professional services are “missing” from Metro Hartford-Springfield due to the lack of regional and intercity rail connectivity. With rail connectivity restored, these jobs, which have fueled growth elsewhere in the Northeast, can be attracted over time.

5. **Transit-oriented development.** Between New Haven and Worcester, the Inland Route rail improvements would serve 16 existing and future stations. Recent and planned development in these station areas suggests a strong market of interconnected residential communities, employment centers, and public destinations. A capacity analysis reveals an aggregate station area potential of about 20

million square feet of commercial development and 30,000 housing units

6. **Economic benefits far in excess of costs.**

Together, these two outcomes—the gradual attraction of 20,000-40,000 “missing” professional service jobs and the construction of station-area development—account for an estimated **\$47 to \$84 billion** in directly generated regional GDP over 30 years, including \$27 to \$48 billion in wages. An additional \$15 to \$21 billion of indirect and induced GDP is estimated as well

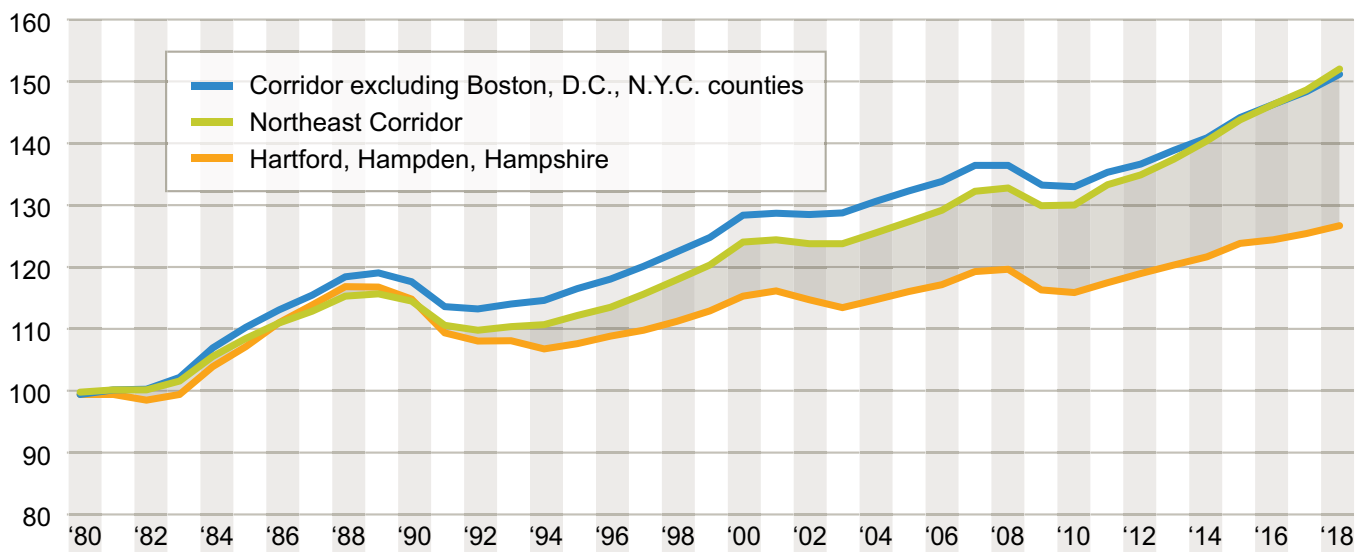
The compactness of Southern New England creates a natural market for regional and intercity rail. Two emerging trends—a decarbonizing

economy in response to climate change, and a gravitation to smaller, well-connected cities in response to COVID-19—would reinforce and amplify the outcomes projected in this report.⁴

Context: A Region Structurally Behind

This study defines Metro Hartford-Springfield as a region of three contiguous counties: Hartford County in Connecticut, and Hampden and Hampshire Counties in Massachusetts.⁵ As shown in Figure 1, Metro Hartford-Springfield is part of the Northeast Corridor (NEC) served by Amtrak and several regional rail providers, as well as the larger northeast mega-region stretching from

Figure 2: Total Jobs Index (1980 = 100), Percent Growth Over Baseline



Source: Bureau of Economic Analysis, 2020

Figure 3: Growth Comparison (Compound Annual growth Rate, 2010-2019)

Region	GRP	Population	Jobs	Wages
Metro Hartford-Springfield	2.9%	0.04%	0.83%	2.08%
Northeast Corridor	4.0%	0.38%	1.43%	2.34%
Northeast Megaregion	3.8%	0.42%	1.29%	2.29%

Source: EMSI, 2020

metropolitan Boston to metropolitan Washington DC with over 50 million residents. A core finding is that, when compared to the rest of the Northeast Corridor, Metro Hartford-Springfield has fallen significantly behind in economic performance.

- Compared to job growth in the Northeast Corridor as a whole (1.1% annually) since 1990, Metro Hartford-Springfield has followed a slower growth trajectory (0.6% annual job growth); representing about **130,000 jobs not created** across Metro Hartford-Springfield since 1990. This gap is illustrated in Figure 2.
- In contrast with peer metro regions (NEC and nationally), and despite established strength in insurance and related service industries, Metro Hartford-Springfield is defined by weak job creation across information, finance, and professional services (including insurance, in which employment has actually declined).
- Constrained employment growth goes hand-in-hand with an abundance of older housing stock compared to NEC averages and significantly slower pace of new residential construction since 2010. The lack of new housing construction, as well as constraints created by “missing middle” housing, create a drag on workforce availability and is one reason other cities have embraced transit

The absence of robust, well-used rail service constitutes a major gap in the region’s transportation network.

oriented development as a strategy for new infill housing.

- As shown in Figure 3, the net result is low growth, not only in jobs but in Gross Regional Product, population, and wages—a structurally lagging regional economy compared to the larger Northeast.

Connectivity: Transit, Regional Rail, Intercity Rail

Is the gap in economic performance and trajectory related to rail service? A majority of key NEC regional markets benefit economically from a combination of traditional public transit (buses and, in major metropolitan centers, rapid transit); commuter rail (or as it is increasingly called, regional rail) in the Boston, New York, Philadelphia, Baltimore, and Washington metropolitan areas; and intercity rail linking key NEC cities. For brevity and consistency, the combination of local bus or rapid transit, commuter or regional rail, and intercity rail is referred to in this study as “rail/transit”.

The Metro Hartford-Springfield region suffered a degradation of passenger rail service in the 1970s and 1980s, coincident with its regional economic decline. Metro Hartford-Springfield was hurt, like other parts of the Northeast Corridor, by long-term decline and disinvestment in general and by the recession of 1988-90 in particular, and then by the Great Recession of 2008. An asset that might have helped the region recover and diversify (and that did help other NEC cities recover) was missing—rail connectivity.

Hartford and Springfield stand out as mid-sized cities with regional rail service only at the “starter” level and minimal, low-performance intercity service. The Hartford Line opened in 2018; its strong start, although overshadowed by the

Figure 4: Comparative Rail/Transit Use

Industry Sector	Metro Hartford-Springfield		NEC		Transit Ridership Shares		
	Growth Since 2000	Growth Since 2010	Growth Since 2000	Growth Since 2010	Metro H-S 	US Average	NEC 
Ag, Const, Mfg, Wholesale, Transportation, Utilities	-0.8%	0.4%	-0.4%	0.3%	1.6%	2.7%	15.6%
Information, Finance, Professional Services	0.1%	0.0%	0.7%	1.1%	2.7%	7.7%	29.4%
Education and Healthcare	1.4%	0.6%	1.7%	0.9%	2.6%	4.7%	20.6%
Retail Trade	0.1%	-0.3%	0.4%	-0.1%	4.2%	4.5%	21.5%
Other Services	0.3%	0.3%	0.6%	0.3%	2.0%	4.9%	22.9%
Arts, Entertainment	1.4%	0.3%	2.2%	1.4%	6.9%	7.0%	29.3%
Local, State, Federal Government	-0.4%	-0.2%	0.4%	-0.2%	1.3%	5.1%	22.0%

Source: US Census ACS, 2019; EMSI

pandemic, provides an encouraging preview of this market's potential.

The absence of robust, well-used rail service constitutes a major gap in the region's transportation network. Connections are missing—not only to Boston and New York but to the regional hub cities of Massachusetts and Connecticut and to the local transit systems operated by the Connecticut Department of Transportation (CTDOT) and the Pioneer Valley Transit Authority (PVTA). Local bus ridership generated by regional rail connections is minimal in these two systems.

- US Census journey to work data highlight the challenge. Between 2000 and 2016, while a growing share of NEC workers were using rail/transit (an increase from about 20% to 23%), Metro Hartford-Springfield worker transit use remained limited to available CTDOT and PVTA bus service and decreased from 3.1% to 2.8% over the same period. Even if we exclude New York City (with its uniquely high rail/transit mode share), rail/transit ridership across the NEC remains significantly higher (above 12%) than in the Hartford-Springfield region.⁶

- Information, finance, and professional services constitute key growth sectors in the Northeast Corridor and mega-region. Two clear comparisons are evident in Figure 4. First, as noted previously, job growth in these sectors, while robust in the Northeast Corridor as a whole, has been minimal in Metro Hartford-Springfield. Equally important is the difference in how these workers commute to their jobs. In the NEC, 30% of workers in these sectors rely on rail/transit, and the US average is 7.7%. But in the Hartford-Springfield region, only 2.7% of workers in information, finance, and professional services rely on rail/transit. Put simply, these sectors are fueling job growth in the Northeast Corridor, are attracted to markets with strong rail/transit systems, and display high rail/transit mode shares. In Metro Hartford-Springfield, these same sectors are not growing, and their existing workforces use rail/transit at strikingly low levels.
- While economic underperformance in the Hartford-Springfield region has a number of causes, our analysis found that missing regional rail access has led to a jobs gap in the key growth sectors of Information,

finance, and professional services. This gap is estimated at between **20,000 and 40,000 positions** that should have located (or stayed) in the Metro Hartford-Springfield region since 1990 but didn't, due to limited regional rail access. This finding rests on a statistical analysis of US counties and metro areas, focused on the relationship between the creation of jobs in the relevant sectors and levels of regional rail/transit use, including whether regional or commuter rail is present.⁷

When white-collar industry is concentrated in places with good regional rail service, this creates an opportunity for higher-paid “choice riders” as well as transit-dependent workers in those same industries to commute by train. This is a locational incentive that Hartford-Springfield currently lacks.

The study also reveals glaring equity impacts associated with limited regional rail/transit connectivity. While more than 33% of NEC residents under the federal poverty line commute

via rail/transit, only 12% of low-income Hartford-Springfield area commuters utilize rail/transit. Lower income residents are less able to access regional opportunity afforded to other NEC residents, linked to faster commutes and higher wages. There is a regional employment market of more than 2.5 million jobs within 50 miles of Hartford and Springfield, but for area residents, rail access to those jobs remains very limited.

Rail/transit not only helps workers get to jobs; it makes their lives more affordable in general. Data from the BLS Consumer Expenditure Survey confirm that households with access to rail/transit can reduce their aggregate transportation spending, freeing up dollars for housing, food, and entertainment.

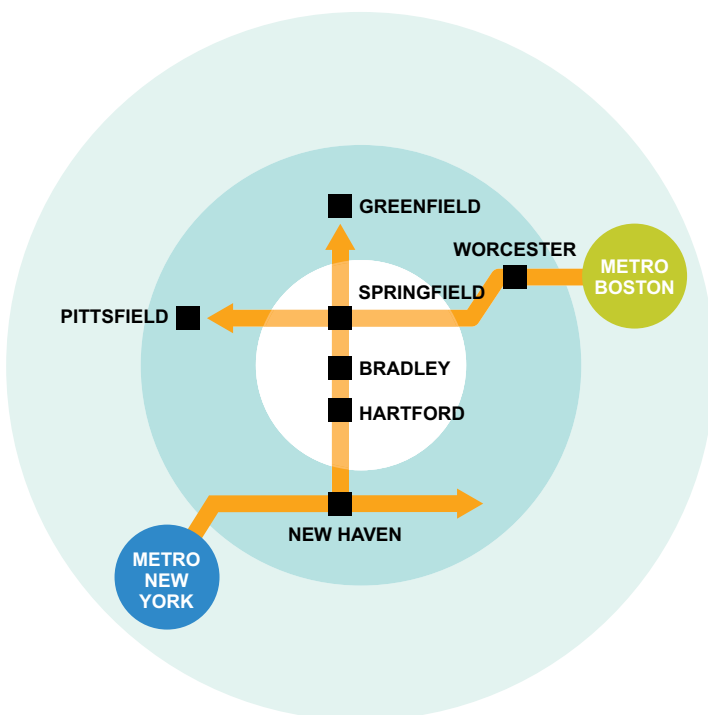
The Regional Market: A Series of Concentric Circles

From the perspective of Metro Hartford-Springfield, the rail market to be served by the proposed Hartford Line and East-West improvements can be seen as three concentric circles:

- The “bull’s-eye” of Hartford, Springfield, and their shared resource, Bradley International Airport;
- Worcester and New Haven—major regional centers “one ring out” on the historic Inland Route;
- Metropolitan Boston and New York.

Hartford-Bradley-Springfield. Together, the two cities and their immediate hinterland represent a **distinct and consequential** economic location in the Northeast Corridor. Metro Hartford-Springfield’s economic attributes include a combined population of 1.6 million, a combined Gross Domestic Product of \$120

Figure 5: A Market of Concentric Circles



billion, 20 colleges and universities, two historic downtowns 25 miles apart on I-91, and New England's second-largest international airport. Its flat job growth notwithstanding, Metro Hartford-Springfield would rank among the top 40 US Metropolitan Statistical Areas in total employment.

In 2019, on the eve of the pandemic, Bradley International Airport handled seven million passengers, and its owner/operator, the Connecticut Airport Authority, was planning for ten million. Bradley is located halfway between Springfield and Hartford, barely 12 miles from each downtown. While Bradley's master plan encourages increased use of transit and rail by passengers and airport workers, transit/rail also has a key role to play with respect to airport-related economic development. The potential for industrial and commercial growth at Bradley, and downtown transit-oriented development (TOD) in Windsor Locks, its "front door" and rail gateway, is discussed below.

Metro Hartford-Springfield is roughly equidistant from New York and Boston—close enough at 80-120 miles to lie in both spheres of influence, but distant enough to need frequent, reliable passenger connectivity that does not rely exclusively on automobiles, given current and

future congestion. Some workers may choose to commute from Metro Hartford-Springfield to the two great metropolitan areas, especially if their post-pandemic work environment is a hybrid one in which physical trips to the workplace are no longer daily. Metro Hartford-Springfield has an opportunity to emerge not merely as a bedroom community but as an economic place in its own right, generating rail trips as both an origin and a destination.

An enhanced Hartford Line providing more frequent, more reliable all-day regional service would connect Metro Hartford-Springfield's labor markets, businesses, and innovators to each other. With the two Union Stations and intermediate stops at Windsor, Windsor Locks/Bradley, and Enfield, high-performance regional rail would act as a bi-directional transit spine, helping to unify this compact regional market.

New Haven and Worcester. With frequent, high-performance service along a modernized Inland Route, Worcester—New England's second largest city—would become more accessible not only to Springfield, but to Hartford, New Haven, and New York City as well. New Haven would be close not only to Hartford, but to Springfield. There are significant TOD opportunities, existing and planned,

The economic benefits of high-performance rail service include labor market connectivity; business connections for innovation and other synergies; and the enhancement of tourism, entertainment, cultural, and other non-work destination activities.

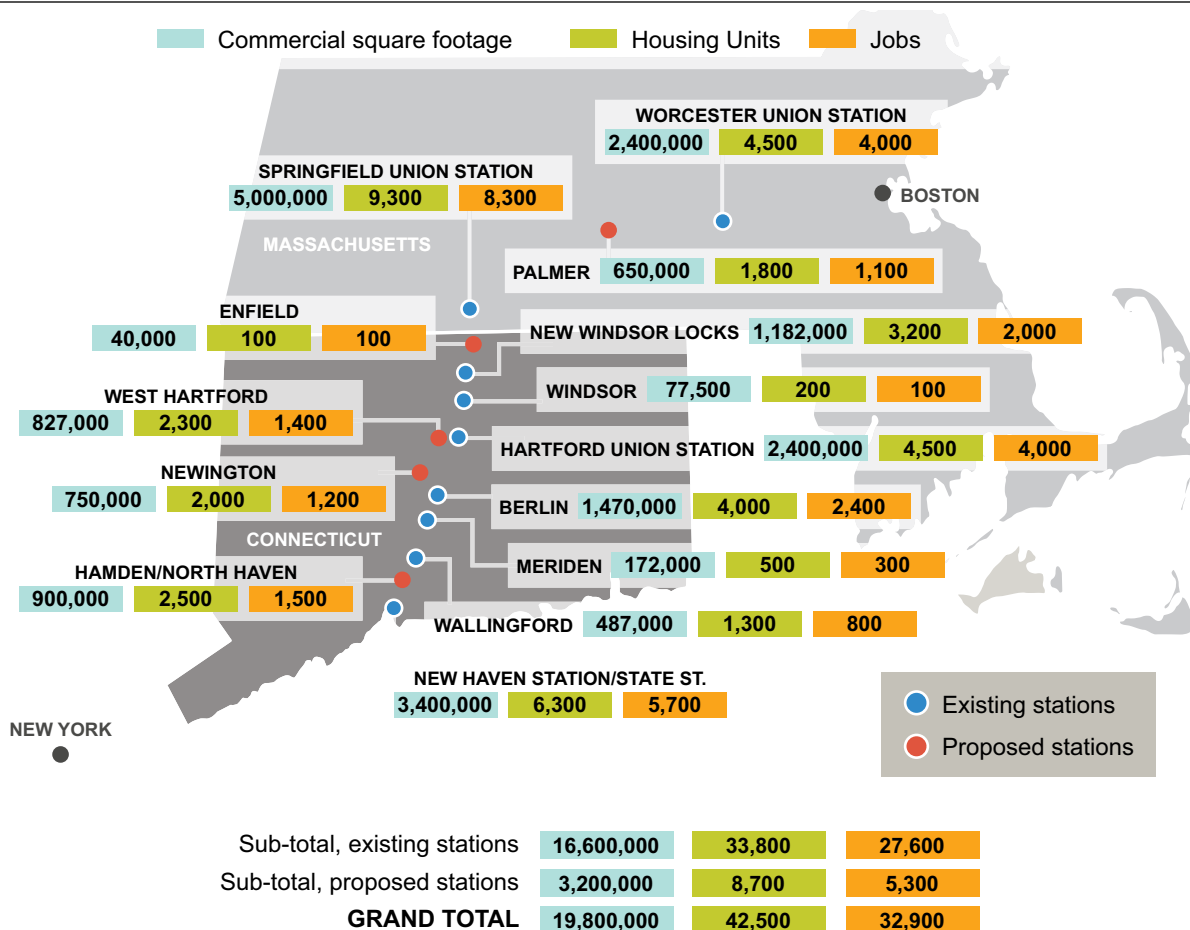
in the Worcester, Springfield, Hartford, and New Haven station areas, with easily envisioned synergies among them.

The markets “one ring out” from the Hartford-Bradley-Springfield core also include the Pioneer Valley north of Springfield, where pilot rail service currently reaches Holyoke, Northampton, and Greenfield.⁸ These communities—and their several institutions of higher learning—are integral to the “Knowledge Corridor” branding that Connecticut and Massachusetts have sought to associate with the Hartford Line. The proposed Hartford Line improvements would lay the foundation for improved infrastructure and service extending past Springfield.

The economic benefits of high-performance rail service include labor market connectivity; business connections for innovation and other synergies; and the enhancement of tourism, entertainment, cultural, and other non-work destination activities. What fuels these benefits is not simply mitigation of future highway congestion, but the need to **decarbonize the economy**, which will place a premium on regional proximity and compactness. Moreover, one of the commonly anticipated post-COVID adjustments is a **gravitation to smaller, well-connected cities**.

If you can commute easily between Hartford and Springfield, or live in Windsor Locks and work in Worcester, or live in Holyoke and work in Hartford

Figure 6: Station Area TOD Capacity, One-Mile Radius



Source: AECOM Analysis, based on CoStar, Urban Footprint, MassINC Transformative TOD Analysis

or New Haven; or if you can run a business in Springfield and routinely make day trips to New York or Stamford or Boston; or if your business at Bradley International Airport can attract workers from Wallingford and Palmer—all by train, without the expense of car ownership or the future roadway congestion that will come with growth—that’s a competitive advantage for the region.

Development Nurtured by Passenger Rail

For regional and intercity rail, the traditionally defined station areas are the tip of the iceberg. Development linked to passenger rail has a catchment area much larger than a quarter- or half-mile “walkshed”; people drive to regional rail stations or get there by bus, by bicycle, by employer shuttle or district shuttle. Moreover, the economic impact of connectivity inside and outside the region is felt beyond individual development projects or even development districts.

The station area TOD opportunity lies in both jobs and housing, destinations and origins, particularly with the labor market connectivity achievable through frequent rail service.

That said, station area development is critical. The station area TOD opportunity lies in both jobs and housing, destinations and origins, particularly with the labor market connectivity achievable through frequent rail service. The Hartford-Springfield region has an aging housing stock and sluggish residential construction, relative to the NEC as a whole; this is both a cause and a symptom of weak employment growth. Residential TOD has a key role to play.

In assessing the TOD potential of a station area, four factors come into play: connectivity, physical capacity, market fundamentals, and jurisdictional support. The quantitative analysis undertaken for this study and summarized in Figure 6 is a station-by-station estimate of buildout capacity within a one-mile radius, based on land availability but adjusted to reflect market fundamentals (existing population and employment density, rent levels, recent development activity) and our understanding of station-specific connectivity and jurisdictional support. It relies on data providers including CoStar and Urban Footprint, as well as past studies, including a MassINC 2018 effort focused on the promise and potential of transformative TOD in Massachusetts’ Gateway Cities, which include Springfield and Worcester.⁹

The projection of a robust future TOD capacity is consistent with real-world planning and development in the affected station areas. The next few pages provide a brief summary of the TOD “story” in the four major Inland Route cities. Worcester, Springfield, Hartford, and New Haven are legacy rail cities, each with a historic Union Station around which regional and intercity mobility and station area land use were organized. Rather than the one-mile radius used for our statistical capacity analysis, these narratives,

each with a map showing recent developments and key future opportunities, focus on the half-mile closest to the station.

Worcester

Worcester has gained frequent regional rail service to Boston, with 16 round trips each weekday (pre-COVID) plus the daily Amtrak Lakeshore Limited in each direction. The Worcester Line is the second busiest in the MBTA commuter rail system, with about 9,300 people making the round trip each weekday—a significant increase in ridership since 2012. About 1,300 people board daily in Worcester, including some “reverse” commuters for whom Worcester is a work destination.¹⁰ The MBTA has made track and service improvements and is planning a third track project to improve frequency and reliability by eliminating freight conflicts. Like Springfield, Hartford, and New Haven, Worcester is an “eds and meds” city, with 12 colleges and universities in the area, including the University of Massachusetts Medical Campus and its associated biotech research park, and several hospitals.

Worcester Union Station is on the eastern edge of downtown and is a regional hub for rail, the Worcester Regional Transit Authority bus network, and intercity bus carriers. The station’s potential TOD area is effectively cut in half by I-290, with established residential and institutional neighborhoods and an intermodal freight yard to its east. But the districts to the west, north, and south of Union Station have attracted significant reinvestment. The DCU Center (Worcester’s hockey, basketball, and concert venue) preceded the restoration of rail service but has become an important rail destination. St. Vincent’s Hospital, opened in 2000, is the station’s major institutional neighbor.

In recent years, a wave of reinvestment has occurred within the station’s walkshed, including two transformative, district-scale, public-private initiatives. Worcester Commons, a failed downtown shopping mall, is being redeveloped as the multi-building, mixed-use City Square. And the Canal District, an old industrial area south of the station, is reemerging as a mixed-use neighborhood anchored by Polar Park, the new home of the Boston Red Sox’ top minor-league affiliate. Both efforts have been supported by the state’s TOD-focused MassWorks infrastructure grant program, and City Square relied on Massachusetts’s version of tax increment financing¹¹. There have been several loft-style apartment developments, including adaptive reuse and new construction. One loft building—the Edge at Union Station—offers off-campus apartments for Worcester’s nine colleges. Downtown has also seen development of hotels, a multiuse center for Quinsigamond Community College (“20 Franklin”), and an in-town market.¹²

In its 2018 study of the potential for transformative TOD in Massachusetts’ Gateway Cities, MassINC included Worcester as one of four intensive case studies. Through an analysis of vacant and underutilized property, MassINC estimated that with an aggressive public strategy and optimal buildout, Union Station’s half-mile walkshed could accommodate nearly 24,000 net new residents (a nine-fold increase at that time) and nearly 7,000 net new jobs (a one-third increase), achieving a model TOD balance of 50% population, 50% jobs.¹³

Springfield

The revitalization of Downtown Springfield is a work in progress. A cornerstone achievement is the restoration of Union Station itself. Located on Main Street at the northern end of downtown, the

Figure 7: Worcester Union Station Area TOD

Source: AECOM; for specific projects, see listing following endnotes.

station reopened in 2017—a \$100 million public-private investment that includes the corporate headquarters of Peter Pan Bus Lines, the offices of a major local architectural firm, and retail for passengers and the general public. The bus terminal is the hub not only for Peter Pan, but for the Pioneer Valley Transit Authority's bus transit system. The gap in the regional mobility network was embodied by the decades-long abandonment of Union Station. Its renewal, with coordinated support of the city, state, PVTa, and

Congressional delegation, is not only a catalyst project for downtown, but an opportunity for robust rail-to-transit connections in the regional labor market.

A revived Union Station has already led to the conversion of two historic buildings to residential lofts and the proposed conversion of a third immediately east of the station, and two loft developments along nearby Chestnut Street. The new headquarters for Way Finders, a regional

Figure 8: Springfield Union Station Area TOD

Source: AECOM; for specific projects, see listing following endnotes.

housing agency and the planned restoration of the historic Paramount Theatre and Massasoit Hotel are in properties across Main Street from the station complex.

A half-mile south of Union Station, the \$950 million MGM Springfield Casino opened in 2018. Designed to generate foot traffic on Main Street, the casino is diagonally across the street from MassMutual Center, Springfield's hockey, basketball, concert, and convention venue. Although the casino attracted 10,000 visitors per day before COVID-19, the desired catalytic effect

(in the face of the pandemic) has yet to occur. The City is advancing a coordinated strategy for the "impact district" encompassing the Mass Mutual Center, MGM Springfield, historic Court Square, and the streets and blocks woven through them.¹⁴ The casino, in addition to its on-site hotel, is planning a boutique hotel in the adjoining historic building at State and Main Streets. Residential loft development has begun, and additional such projects are being promoted by the City, including the adaptive reuse of the historic Court Square hotel.

Springfield's four downtown parks have been renovated, enhancing a pedestrian network that connects Union Station to other parts of downtown. This includes the restoration of Pyncheon Plaza, the pedestrian link between the MGM/MassMutual Center district and Springfield's cultural hub, the Museums Quadrangle.

Springfield's other regional destinations—the Basketball Hall of Fame and several colleges and universities—are beyond the Union Station walkshed but still in the core of Greater Springfield, accessible by train and local last-mile connections.

In its 2018 Transformative TOD study, MassINC estimated that the Springfield Union Station area could accommodate 13,000 net new residents (more than quadrupling its population) and nearly 3,000 net new jobs (a 20% increase), achieving a 50-50 balance of population and employment.¹⁵ MassINC attributes nearly half of this station-area buildout capacity to “higher occupancy”—reinvestment in parcels that, while not vacant, have significantly underutilized building stock or extensive surface parking. This condition is especially evident in the blocks between the station and I-291 (labeled the “Station Foreground” in Figure 8) and the “TDI District” (where the state's Transformative Development Initiative for Springfield is focused).¹⁶

Hartford

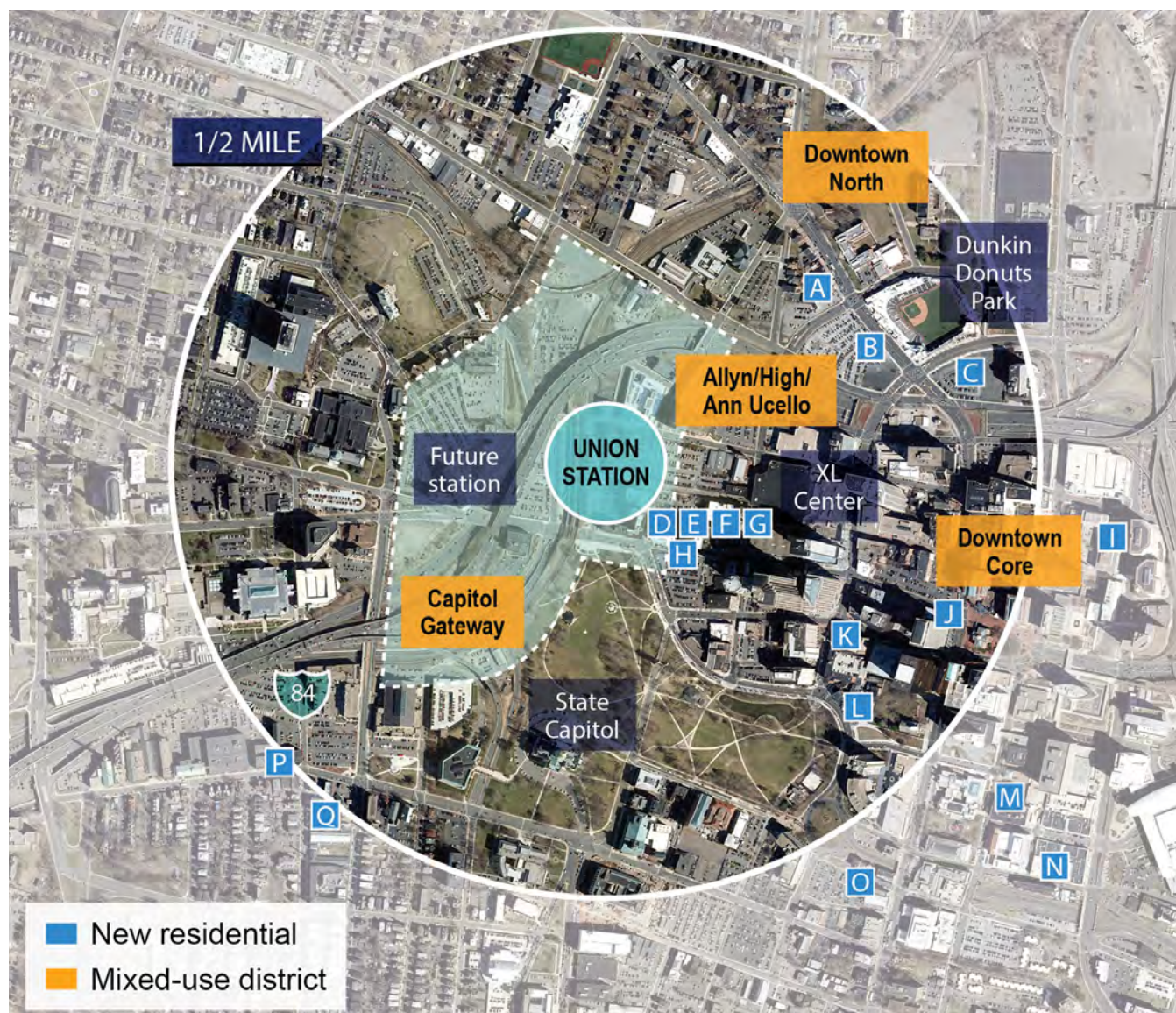
Union Station is on the western edge of Downtown Hartford. Its half-mile walkshed contains the State Capitol, office buildings, the historic downtown core, a critical mass of civic and cultural institutions, and Bushnell Park, Hartford's central open space. Both the XL Center (Hartford's hockey, basketball, and concert venue) and Dunkin Donuts Park (its minor league baseball field) are within short

walking distance; a new neighborhood, Downtown North, is developing around the ballpark. The Convention Center complex and the University of Connecticut Hartford Campus, one of nine colleges and universities in Metro Hartford, are in the downtown, just outside Union Station's half-mile radius.

Three major revitalization strategies—all consistent with the principle of dense, walkable TOD—are being pursued. One is to introduce a significant amount of multifamily housing to enliven the downtown and create a greater balance between jobs and housing. The Capital Region Development Authority (CRDA), in partnership with the City of Hartford and other agencies, has spearheaded an initiative to create 2,000 downtown units through new construction and adaptive reuse. Since 2013, that initial goal has been met; the 17 residential projects shown in Figure 9 represent nearly 1,800 units completed, under construction, or financed.¹⁷ Most of these developments fall within a half-mile of Union Station, and several are in the station's immediate foreground in the blocks framed by Asylum, Allyn, High, and Ann Ucello Streets.

A second strategy is iQuilt, a public-private partnership to enhance and interconnect Downtown Hartford's parks, cultural institutions, and streetscape. Consisting of both physical investments and institutional communication and programming, iQuilt includes short, medium, and long-term elements.

The third strategy is to reknit the larger downtown, which is split by the aging, deteriorating I-84 viaduct and the adjoining railroad tracks—a barrier to walkable, transit-oriented investment. A decade-long planning effort concluded that the viaduct should be replaced, either partly or fully underground, in the next two decades. Either alternative would require realigning the railroad

Figure 9: Hartford Union Station Area TOD

Source: AECOM; for specific projects, see listing following endnotes.

tracks a short distance to the west and creating a new Union Station. The opportunity, illustrated in the city-state Capital Gateway Concept Plan, includes restoring the truncated street grid, creating several large development parcels, and extending the station's TOD footprint west, north, and south.¹⁸

New Haven

New Haven has two train stations in the urban core, barely a half-mile apart. Union Station, isolated from the urban fabric for decades,

now finds itself at the intersection of a half dozen major city-building initiatives. One is the remaking of the station itself. In 2020, the state and City agreed to collaborate on a TOD-driven partnership for Union Station and its adjacent properties, including mixed-use development, new retail, an enhanced multimodal rail/bus hub, and a commuter park-and-ride solution consistent with that vision.¹⁹ Directly across the street, the City hopes to realize a privately developed, mixed-income residential community of several hundred units on the site of the demolished Church Street South apartments.

Further west, but still in the walkshed of Union Station, is Parkside Crossing, a multi-phase, mixed-income development of 600 units.

Union Station is also adjacent to Downtown Crossing, the state initiative to convert the expressway portion of Route 34 into an urban boulevard, restore the interrupted street grid,

and unlock 10 acres of developable land at the convergence of downtown, Yale-New Haven Hospital, and the Hill neighborhood. Reclaiming this land will create dense, walkable new development in the station walkshed. Immediately east of the Downtown Crossing alignment is the site of the demolished New Haven Coliseum,

Figure 10: New Haven Station Area TOD



Source: AECOM; for specific projects, see listing following endnotes.

now a 4.5-acre parking lot, where “275 South Orange”—a dense, mixed-use, transit-oriented development including 500 apartments—is planned.

Across the railyard from Union Station is Long Wharf, where plans call for continued industrial use as well as new commercial, residential, and tourism opportunities. With improved pedestrian connections and an effective all-day shuttle, this emerging district would become part of the Union Station district.²⁰

State Street, by contrast, is a walk-in station sandwiched between the historic downtown core and the Wooster Square neighborhood. It serves the existing transit-supportive land use fabric as well as new infill development, including two apartment projects, immediately adjacent, with over 500 units. State Street is also within walking distance of Downtown Crossing and just a quarter-mile from the planned Coliseum site redevelopment.²¹ Together, the combined station areas include multifamily developments that are recently completed, under construction, or in the pipeline totaling nearly 2,000 units.²²

Other Corridor Communities

This TOD narrative is rounded out with a look at four of the smaller corridor communities: Windsor Locks (in its own right and as the “last-mile” gateway to Bradley International Airport), Meriden, West Hartford, and Palmer.

Bradley International Airport and Windsor Locks. The state-enabled Bradley Airport Development Zone, located in the towns of Windsor Locks, Windsor, Suffield, and East Granby, contains 2000 acres of developable land, with an estimated net new buildout capacity of 20 million square feet of industrial and commercial space—nearly double the existing inventory.

(Most of this land lies outside the one-mile radius covered by this study’s TOD capacity analysis, reinforcing that for regional rail, even a mile is a conservative gauge of a station’s potential zone of influence.) The non-profit Bradley Development League, a consortium of the four towns and leading businesses, markets these opportunities; since 2010, state law has offered corporate excise and local property tax incentives to manufacturing, research and development, information services, and other airport-related businesses that invest in the Development Zone.²³

Windsor Locks is Bradley’s front door. The Town has undertaken a downtown TOD initiative, organized around the state’s commitment to replace and relocate the Hartford Line station to a strategic Main Street riverfront site. A TOD study prepared for the Town in 2013 identified a market for several hundred units of multi-family housing and up to 88,000 square feet of new commercial space. In 2020, the Town began seeking a development partner for a mixed-use site alongside the new station.²⁴

The Town and the Connecticut Airport Authority are planning a robust shuttle service to connect the new Windsor Locks Station to the Bradley terminals. A broader “district shuttle”, solving the first-mile/last-mile connection between the station and the Airport Development Zone, would make Bradley’s long-term economic development rail-accessible to the Hartford-Springfield core as well as other Inland Route and Knowledge Corridor markets.

Meriden. Meriden, a city of 60,000 located halfway between Hartford and New Haven, is a historic center of manufacturing and industrial design. It is an existing stop on the Hartford Line and an example of the potential for TOD in smaller rail communities. The City of Meriden, with state support, embarked on a multi-faceted TOD

strategy over the last decade, including an on-going real estate market analysis, TOD-friendly zoning, and the solicitation of developers for key city-owned sites.

Two catalytic public investments were undertaken: Meriden's new train station and, directly across the street, the conversion of a 14-acre brownfield property into a central park known as Meriden Green. Each of these projects included private residential development, and several additional multifamily projects have been developed in the immediate vicinity of the station. In all, nearly 400 units have been developed, along with ground-level retail and public amenities organized around the Green and the train station. The TOD capacity analysis undertaken for this study suggests that Meriden's station area could accommodate several hundred units more, as well as a modest increment of commercial space.

West Hartford. West Hartford is one of the five proposed new stations on the Hartford Line, along with Newington, Enfield, North Haven, and Hampden. West Hartford has three stops on the existing CTfastrak bus rapid transit line (BRT); the one at the strategic intersection of Flatbush Avenue and New Park Avenue is the location of the future rail station. This station area straddles the boundary between West Hartford and Hartford; part of the station site and much of the potential development are on the Hartford side.

The City of Hartford, the Town of West Hartford, and CRCOG have been planning for transformative TOD, with an eye toward the expansive areas of low-density industrial, retail, and auto-oriented uses in the immediate station area.²⁵ This pattern is replicated around other existing and proposed suburban stations, particularly those between Hartford and New Haven.

The TOD capacity analysis prepared for this study suggests that West Hartford and the future station just to its south in Newington could accommodate substantial mixed-use development, at a scale appropriate to their town center contexts. The West Hartford housing authority has already advanced two multifamily projects in the combined Hartford Line/BRT corridor; the larger, at 616 New Park Avenue, adjoins a CTfastrak station and is within walking distance of the future train station.²⁶

Palmer. Palmer, Massachusetts, is the only proposed station stop on the East-West Rail line between Springfield and Worcester. A historic industrial community known as "the Town of Seven Railroads", Palmer is still a rail crossroads, where the CSX and Central Vermont intersect in Depot Village. Both lines are busy freight carriers, and Amtrak's Lakeshore Limited passes through (but does not stop) on the CSX track. Union Station, an H. H. Richardson original building, lives on as a restaurant and landmark.

While Depot Village is largely built out at the scale of a small town center, there is ample underutilized land available for TOD. Palmer's Community Plan identifies Depot Village, as well as an expanse of undeveloped woodland along Route 32 just north of the village, as strategic development sites.²⁷ The Town commissioned a TOD study in 2017, and the University of Massachusetts Center for Economic Development has undertaken a separate study, citing both the TOD potential and regional mobility needs as justifications for a passenger station.²⁸

Palmer's location in the regional mobility network amplifies its TOD potential, from a commercial/industrial as well as a residential standpoint. Depot Village adjoins the only Massachusetts Turnpike exit in a 24-mile stretch, and three regional highways—Routes 20, 32, and 181—

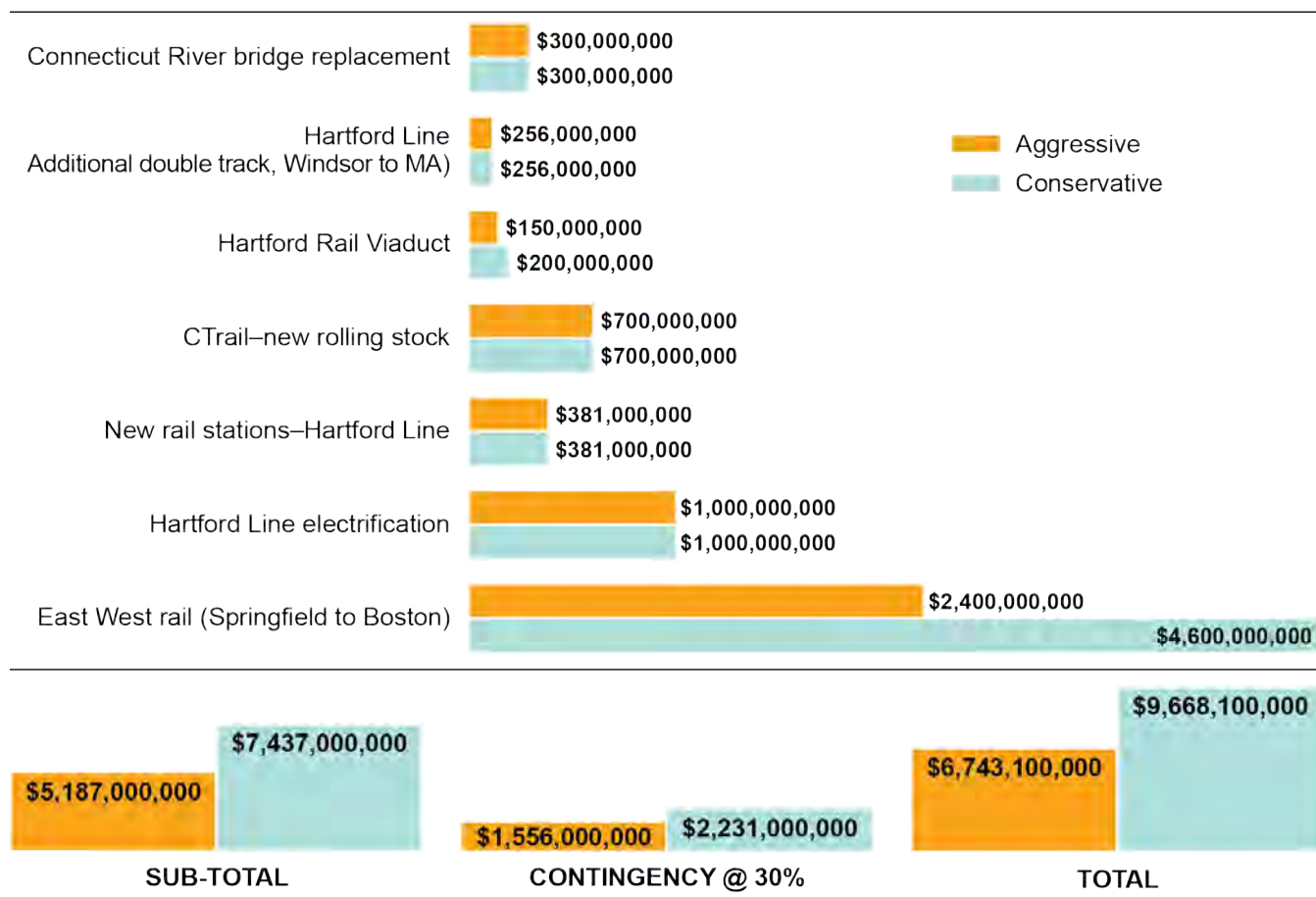
intersect here. Palmer is the gateway to a 21-town area that includes the University of Massachusetts at Amherst. Developable land is inexpensive by regional standards, and public policy favors passenger rail service and an economic development strategy associated with it.

Economic Impacts, Benefits, and Costs

Economic and fiscal impacts can be described as the sum of economic activity within a defined geographic region resulting from an initial change in the economy. In concept, initial changes spur subsequent indirect and induced activities.

Households, businesses, and governments are connected in a complex web of interdependent relationships based on producing, selling, purchasing, and taxing goods and services. An initial change in one of these creates ripple effects through the others. Initial impacts tend to create revenues at other firms and employment for residents and associated income, as well as tax revenues to state and local governments referred to as fiscal impacts. Figure 11 summarizes anticipated direct costs associated with planned rail improvements. While costs are presented in 2020 dollars, the effort presumes that required construction would unfold over a five- to ten-year future period.

Figure 11: Estimated Construction Costs for Regional Rail Improvements



Source: AECOM Analysis; CTDOT; MassDOT

In the context of these estimated costs, Figure 12 summarizes anticipated direct benefits associated with the proposed rail infrastructure investment, specifically:

- Attraction of new jobs in the information, finance, and professional services sectors across the Metro Hartford-Springfield region. Reflective of a five- to ten-year rail construction period, the projected creation of 20,000 to 40,000 new jobs will be incremental, achieved over a 30 year future period. While jobs are shown for Year 30, wage and output benefits are presented as 30-year cumulative totals.
- Construction of future transit oriented residential and commercial development, based on the cumulative, station-by-station TOD capacity estimate shown previously. The economic impact of this projected construction reflects detailed assumptions regarding floor area ratios and construction costs, as outlined in the main report. While costs are presented in 2020 dollars, unit absorption is expected over a 30 year forecast period. Construction period jobs are presented as full-time equivalents.

In terms of direct benefits (in 2020 dollars), while proposed infrastructure costs (\$6.7 to \$9.7 billion) are consequential, anticipated economic benefits are dramatic, with:

- **between \$47 billion and \$84 billion** in regional Gross Domestic Product (GDP) linked to new jobs in professional services as well as jobs supported by TOD construction investment; and
- fiscal benefits payable to local and state government in Connecticut and Massachusetts estimated at between \$3.8 billion and \$5.4 billion over 30 years (assuming present value at current tax rates).

In addition to direct benefits, we have also estimated (in Figure 13) the broader indirect and induced economic benefits, using input/output multipliers from EMSI.²⁹ Indirect impacts have been estimated for TOD development and regional jobs in information, finance, and professional services, across Connecticut and Massachusetts. By Year 30, the annual GDP attributable to this indirect and induced economic activity is estimated to be in the range of **\$15 billion to \$21 billion**.

The proposed rail improvements would bring 20,000 to 40,000 professional services jobs, extensive transit-oriented development, and \$47 to \$84 billion in new regional GDP over 30 years.

Figure 12: Estimated Direct Benefits Due to Regional Rail Improvements, Current \$US 2020

	Direct Benefits, Present Value	Conservative	Aggressive
Direct Economic Benefits, New Regional Jobs, Linked to Transit Improvements	New Regional Jobs, 30 Years	20,000	40,000
	Cumulative New Wages, 30 Years	\$20,094,000,000	\$40,187,000,000
	Cumulative New Regional GDP, 30 Years	\$35,428,000,000	\$70,856,000,000
Transit Oriented Development New Construction Investment, Present Value	TOD Construction Jobs (Full-Time Equivalent)	97,000	115,000
	Cumulative Construction Wages	\$6,799,000,000	\$7,463,000,000
	Cumulative Construction Investment	\$11,332,000,000	\$13,422,000,000
Fiscal Implications	Cumulative Property Taxes, 30 Years	\$2,770,000,000	\$3,290,000,000
	Cumulative Income Taxes, 30 Years	\$1,055,000,000	\$2,110,000,000
	Total Fiscal Benefits	\$3,825,000,000	\$5,400,000,000
Total Benefits, Cumulative, 30 Years	New Professional Services Jobs	20,000	40,000
	New Construction Jobs	97,000	115,000
	New Regional GDP	\$46,760,000,000	\$84,278,000,000
	New Fiscal Benefits	\$3,825,000,000	\$5,400,000,000

Source: AECOM Analysis

Figure 13: Estimated Indirect / Induced Benefits Due to Regional Rail Improvements, Current USD

	Indirect and Induced Benefits	Conservative	Aggressive
Indirect / Induced Economic Benefits, New Regional Jobs, Linked to Transit Improvements	Jobs, Year 30	32,000	63,000
	Total Wages, Year 30, Present Value	\$1,621,000,000	\$3,242,000,000
	Regional GDP, Year 3, Present Value	\$3,521,000,000	\$7,041,000,000
Transit Oriented Development New Construction Investment, Present Value	Jobs, Year 30	133,000	158,000
	Total Wages, Year 30, Present Value	\$5,268,000,000	\$6,240,000,000
	Regional GDP, Year 3, Present Value	\$11,628,000,000	\$13,772,000,000
Total Benefits, Year 30	Jobs, Year 30	165,000	221,000
	Total Wages, Year 30, Present Value	\$6,889,000,000	\$9,482,000,000
	Regional GDP, Year 30, Present Value	\$15,149,000,000	\$20,813,000,000

Source: AECOM Analysis, EMSI

Endnotes

1. The Hartford Line currently provides 16 weekday round trips between New Haven and Hartford, 11 of which continue to Springfield. The 16 trips are a total, comprising eight operated by the Connecticut Department of Transportation and eight by Amtrak, at identical prices and with interchangeable ticketing. The bi-state Hartford Line enabled more frequent, reliable, and speedy service; Amtrak agreed to add two trips to its schedule and to honor the Hartford Line regional rail tickets.
2. Alternatives 4 and 4/5 have preliminary estimated costs of \$3.9 and \$4.6 billion, respectively; they would reduce the Springfield-Boston trip time, with intermediate stops, to an hour 40 minutes and an hour 30 minutes. See the MassDOT East-West Rail Feasibility Study (January 2021), [East-West Passenger Rail Study - Final Report - Chapter 1 - Executive Summary \(mass.gov\)](#).
3. See the Inland Route analysis in the 2016 Northern New England Intercity Rail Initiative (NNERI) study, [NNEIRI Study Summary \(mass.gov\)](#).
4. As noted in the East-West Rail Study Final Report released by MassDOT in January 2021, the existing ridership demand modeling analysis does not (and cannot) capture the potentially transformative effect of intercity and regional rail as part of an integrated regional development agenda. A long-term ridership analysis under such a scenario is beyond the scope of this report as well, but we can begin to frame the regional growth implications of enhanced rail connectivity.
5. As defined by the US Census, the Hartford and Springfield metropolitan areas include parts of seven counties, extending from the Vermont border to Long Island Sound. For purposes of this report, the three core counties (Hartford, Hampden, and Hampshire) better reflect the potential influence of the proposed rail improvements.
6. Data are from the Census' American Communities Survey (ACS) data series and represent a combination of bus, subway, regional rail, and intercity rail.
7. The analysis estimates 22,000 jobs at the conservative end of the scale; that number is rounded down to 20,000.
8. The Valley Flyer runs from New Haven to Greenfield; the Vermonter from New York to St. Albans, VT. Both are operated by Amtrak in partnership with the affected states; as of 2021, they amount to three daily trains in each direction.
9. Massachusetts Institute for a New Commonwealth (MassINC), Daniel Hodge and Ben Forman, The Promise and Potential of Transformative TOD in Gateway Cities; <https://2gaiae1lifzt2tsfgr2vil6c-wpengine.netdna-ssl.com/wp-content/uploads/2018/04/TTOD-Report.pdf>.
10. See <https://www.mass.gov/lists/2018-commuter-rail-counts>; counts are from 2018, the last full pre-COVID year.
11. For MassWorks, see <http://www.mapc.org/wp-content/uploads/2017/09/MWIP-Presentation-2017.pdf>. This program was also used to provide state support for the restoration of Springfield Union Station, described below. The state's tax increment

- program for infrastructure finance is District Improvement Financing (<https://www.massdevelopment.com/what-we-offer/real-estate-services/technical-assistance/district-improvement-financing>).
12. For a full description, see <https://www.worcesterchamber.org/economic-development/projects-underway/>.
 13. MassINC, Daniel Hodge and Ben Forman, The Promise and Potential of Transformative TOD in Gateway Cities; <https://2gaiae1lifzt2tsfgr2vil6c-wpengine.netdna-ssl.com/wp-content/uploads/2018/04/TTOD-Report.pdf>.
 14. https://www.springfield-ma.gov/planning/fileadmin/user_upload/Blueprint_2020.pdf
 15. MassINC, *ibid*.
 16. TDI is a multi-faceted planning and implementation program run by the Massachusetts Development Finance Agency (Mass Development) <https://www.massdevelopment.com/what-we-offer/key-initiatives/tidi/tidi-districts/springfield>.
 17. CRDA's housing initiative and projects are described at https://crdact.net/project_categories/housing/. A few projects located outside the frame of the map bring the total over 2,000.
 18. The I-84 Viaduct Study identified a partially lowered and capped alignment for I-84, resulting in the Capital Gateway Concept Plan (see <http://www.i84hartford.com/documents/pac/PAC-mar-2019/Capital%20Gateway%20Concept%20Plan.pdf> and <https://www.courant.com/business/hc-biz-capital-gateway-hartford-i84-20190418-bsieod54u5evndsys3nywyt6gm-story.html>). In 2020, the state decided to step back from a preferred alternative and place the I-84 viaduct, railroad realignment, and Union Station relocation in the context of the broader Greater Hartford Mobility Study, which will evaluate the tunneling alternative (<http://www.i84hartford.com/index>).
 19. <https://www.wtnh.com/news/connecticut/new-haven/union-station-centennial-brings-65-million-transit-oriented-development-deal/>
 20. https://www.newhavenct.gov/gov/depts/ed/current/long_wharf.htm
 21. The State of Connecticut provides competitive TOD planning and implementation grants to municipalities. New Haven received funding for both of its station areas, including a major planning grant for the Long Wharf district and its connection to Union Station. Other Hartford Line grants have gone to Hartford, West Hartford, Windsor, Windsor Locks, Enfield, and Meriden. See <https://portal.ct.gov/OPM/IGPP-MAIN/Grants/RGTOD-Grant-Program/2015-TOD-Planning-Grant>, <https://www.hartfordbusiness.com/article/ct-tags-11m-for-20-tod-projects>, and https://portal.ct.gov/DECD/Content/Community-Development/03_Funding_Opportunities/Transit-Oriented-Development-Fund.
 22. For recent summaries, see https://www.newhavenct.gov/gov/depts/ed/current_initiatives.htm and https://www.newhavenindependent.org/index.php/archives/entry/new_developments/.
 23. http://www.bradleydevelopment.com/About_Us/; <http://www.bradleydevelopment.com/Customer-Content/WWW/CMS/files/BADZ-Backgrounder-March-2016.pdf>
 24. https://windsorlocksct.org/wp-content/uploads/2020/09/WL-TOD_Vol-1_FINAL.pdf; <https://windsorlocksct.org/wp-content/>

[uploads/2020/09/Windsor_Locks_Station_Area_rrc-guide-rfq-template_rev_5-22.pdf](#)

25. <https://crocog.org/wp-content/uploads/2016/07/FinalFlatbush12.21.15.pdf>; <https://crocog.org/wp-content/uploads/2016/07/RidingtowardtheFuture.pdf>
26. <https://www.hartfordbusiness.com/article/w-hfd-plans-transit-oriented-development-on-new-park-ave>
27. The existing Community Plan is at: https://www.townofpalmer.com/vertical/sites/%7B034F9CAE-5196-4551-90C2-FBFD76374BDB%7D/uploads/Palmer_final_cdplan.pdf; it is being updated.
28. TOD Study: <https://trainsinthevalley.org/wp-content/uploads/2018/02/palmer-tod-draft-plan-presentation-2017-09-26.pdf>; UMass “The Case for Palmer”: https://www.townofpalmer.com/vertical/sites/%7B034F9CAE-5196-4551-90C2-FBFD76374BDB%7D/uploads/Palmer_East-West_Rail_Study_Final_June_4_2019_.pdf.
29. EMSI is a private data provider, whose data and methods are similar to those of IMPLAN.

Listing of Residential and Hotel Projects in TOD Maps

Project letters or numbers correspond to the sites identified in the TOD Maps (Figures 7-10).

Projects are recently completed, under construction, or planned and advancing.

WORCESTER

Residential

- A. 2 Main Street (adaptive reuse of old courthouse)
- B. 145 Front at City Square
- C. The Edge at Union Station (Osgood-Bradley Building, 8 Grafton Street; off-campus apartments for nine colleges)
- D. Harding Green (Harding and Green Streets; includes public market)
- E. Junction Shop Lofts (64 Beacon Street)
- F. Canal District/Polar Park apartments (planned)

Hotel

1. Homewood Suites
2. Home2 Suites (planned)
3. AC by Marriott
4. Canal District/Polar Park hotel (planned)

SPRINGFIELD

Residential

- A. Silverbrick Lofts (27 Lyman Street)
- B. Silverbrick Lofts (15 Taylor Street)
- C. Lyman warehouse development (Lyman and Chestnut Streets, proposed)
- D. Overland Lofts (151 Chestnut Street)

E. Silverbrick Square (122 Chestnut Street)

F. Court Square Hotel (Court Square)

G. New Park Street Lofts (15 Park Street)

Hotel

1. Paramount Hotel restoration (proposed)

2. 101 State Street (proposed)

HARTFORD

Residential

A. 1279-1283 Main Street Apartments

B. Downtown North (Main and Pleasant Streets)

C. Downtown North (Main and Trumbull Streets)

D. 179 Allyn Street (historic reuse)

E. 28 High Street (historic reuse)

F. Hartford Carriage House (111 Allyn Street, historic reuse)

G. The Grand Apartments (201 Ann Ucello Street)

H. Teachers Village (370 Asylum Street)

I. Spectra Boutique Apartments (Constitution Plaza)

J. Spectra on Pearl (101 and 111 Pearl Street)

K. 777 Main Street

L. 36 Lewis Street

M. Front Street Lofts (Front and Prospect Streets)

N. 81 Arch Street

O. 40 Elm Street

P. Capitol Lofts (390 Capitol Avenue, major adaptive reuse)

Q. 246-252 Lawrence Street

NEW HAVEN

Residential

A. The Audubon (Audubon, Orange, and Grove Streets; three phases)

B. The Corner Block (842-848 Chapel Street)

C. Olive and Chapel Streets

D. 87 Union Street/44 Olive Street

E. 275 South Orange (redevelopment of former Coliseum site)

F. Parkside Crossing (Gold, Lafayette, and Congress Streets)

G. Church Street South (planned redevelopment of cleared public housing site)

Hotel

1. Hilton Gardens (80 Elm, planned)

2. Graduate New Haven

3. The Blake

4. The Cambria