

Metro Hartford Future: Accelerating Shared and Sustained Economic Growth

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Draft Situational Assessment
June 2018

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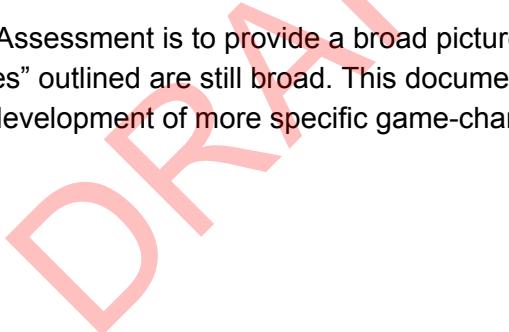
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What is the Situational Assessment?

This document compiles analysis conducted to date to inform the development of a regional economic development strategy for the Metro Hartford region. Through Metro Hartford Future, the region is seeking to identify the top three to five game-changer strategies that, with sustained, collective focus can create shared economic growth. In order to determine what those strategies should be, the following steps have been taken:

- Review of existing plans: Given the region's strong history of planning, it was important to honor the work and recommendations captured by these plans.
- Engagement of regional stakeholders: Through interviews and both a Working Group and Advisory Committee, stakeholders have voiced their opinions on the region's biggest opportunities.
- Data analysis: Regional demographic and economic analysis provides the context for the where we are starting and where we need to get to, as well as informs our understanding of potential strategies.
- Best practice research: For each potential strategy area, best practice research provides examples of how those strategies have been implemented by other communities.

The goal of this Situational Assessment is to provide a broad picture of the region's opportunities. The "strategies" outlined are still broad. This document will be used by stakeholders to inform the development of more specific game-changer strategies that the region should pursue.



Overview of the Metro Hartford Economy

SWOT Analysis

A full SWOT analysis is included in as an attachment and was developed based on data analysis, stakeholder interviews, and best practice research. The strengths, weaknesses, opportunities, and threats identified in this analysis are listed below.

Strengths

- Economy
 - A relatively large, diverse, regional economy.
 - Above-average shares of economic activity in all advanced sectors, including advanced manufacturing.
 - Above average share of foreign exports. In 2016 the value of merchandise exports made in the Hartford MSA was \$10.4 billion, comprising 11.1% of its Gross Metro Product.
 - 86 foreign-owned companies were identified in the Hartford MSA.
 - Lower cost of doing business relative to other large metro regions in New England and Mid Atlantic.
- Talent
 - Stable labor market.
 - Highly educated labor force; which results in higher worker productivity and is a primary site selection factor for attracting companies.
 - Above-average concentration of skilled workers.
 - Relatively lower wage costs by sector and occupation when compared to other large MSAs on the Northeast.
 - A large higher education sector. There are 17 post-secondary institutions that, during the 2016-17 school year had a total full time equivalent enrollment of just over 79,000 students and awarded almost 39,300 certificates and degrees at all levels, 79% of which were Bachelor's degrees or higher.
 - In the Hartford MSA demographic and socioeconomic indicators that address inequality and resiliency are comparable to those for CT and the US. However, within the MSA there are concentrations of low-income residents.
- Place
 - Competitive cost of living when compared with other large metro regions in New England.
 - A lower cost and affordable housing stock.
 - Strategic location in the center of the large market of the Northeast US.
 - The presence of the State Capitol in Hartford.

Weaknesses

- Economy
 - Moderate economic growth. Between 2000 and 2017 total employment in the Hartford MSA was virtually unchanged.
 - Unfavorable economic structure: above-average shares of economic activity in low performing sectors.
 - High business tax rates.
 - High property tax rates and a heavy reliance on the real property tax as a revenue source.
 - The State of Connecticut's challenging fiscal situation will continue to limit its ability to increase the state economic competitiveness through a combination of reducing business taxes and offering economic incentives.
- Talent
 - Analysis of employment by occupation by race showed that Black, Non-white Hispanic, and other Non-Asian minority residents are over-concentrated in low paying occupations and under-represented in high paying ones.

Opportunities

- Economy
 - The cost advantages make it especially attractive for business service, IT support, information processing and analytics, and digital design activities where transportation cost is not an issue.
 - Take advantage of the presence of large corporate headquarters to participate or fund economic development activities and participated in attraction efforts, especially above average share of Fortune 1000 companies.
 - The Region's combination of excellent highway and rail access make it potentially suitable as location for warehousing and distribution facilities, especially those handling high value, complex manufacturing goods.
 - The University of Connecticut is classified Highest Research Activity, indicating that it is a major economic development asset, but who's potential to spur innovation in the MSA has not been fully utilized.
 - The CRCOG Region is well suited to attracting foreign owned companies looking to enter the US market, especially those producing complex, high-value added manufacturing goods that require skilled workers, or offer IT services.
 - Qualified small businesses in manufacturing, working with economic development organizations, should increase efforts to obtain grants from the Federal Government's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.
 - There are some significant clusters like Healthcare that provide over 80,000 jobs that also have some tradability. Selective targets of opportunity with Healthcare should be pursued, especially as they involve providing business and IT services to firms like Aetna and Cigna.

- Talent
 - The large number of graduates from the MSA's college and universities is major opportunity to annual increase the quality of the workforce – if substantial numbers of them remain in the region.
 - A concentration of activity in advanced manufacturing sectors that produce a range of complex, high-value added durable mfg. goods such as machinery, electrical equipment, electronics, tools, aerospace, transportation equipment, etc. Targeted workforce training programs should continue, and be enhanced as necessary to train workers in key occupations required by these companies.
 - The opportunity exists to increase diversity in the workforce through targeted workforce development programs, and the provision of local area transportation services that enables low-income residents to travel to jobs.
 - Economic development policies and job training programs should be directed at reducing the inequities in the labor force where non-Asian minority residents are over concentrated in low paying occupations and under-represented in high paying ones.
- Place
 - The CRCOG region's proximity to, and position between, the New York and Boston metro areas.
 - Quicker rail commuting service between Hartford and New York is scheduled to begin in June of 2018.

Threats

- Economy
 - IHS Markit forecasts that the economic growth rates in both Connecticut and the Hartford MSA over the next 10 years will continue to lag that of US, which will constrain the amount of new development that will occur in the CRCOG region as personal consumption spending, or region demand generated by households, will also grow slowly.
 - New businesses make up just 2% of employment. Thinking about policies to encourage new business creation may be a way to help revive the economy and help bolster economic resilience with new sources of value creation.
 - Continuing fiscal challenges for the State of Connecticut which will limit its ability to spend funds for government programs and services, including economic development, and being able to offer economic incentives.
- Talent
 - The downside of slow wage rate growth is that the amount of income received by residents of MSA will also rise slowly, and wages in some sectors may not be high enough to attract skilled workers.
 - More needs to be done to retain college graduates, including providing internships with local companies while they are in school, and making them aware of openings at local firm as they approach graduation. The corporate

community needs to make a concerted effort to hire qualified graduates. It would also be helpful to make graduates aware of affordable, suitable housing in the Region.

- Sectors where college graduates are likely to be hired are substantially below the Connecticut levels (e.g., Professional and Business Services, Financial Activities), while those in Information are only slightly below. Salaries will likely need to be higher in entry level positions in these two sectors to attract new college graduates.
- The share of total population for persons between the ages of 25 and 44 has steadily declined for years, falling from 33.4% in 1990 to the current level of 23.8%, with an absolute decline of 87,200 persons.
- Place
 - Downtown Hartford lacks the amenities and quality of life that are required to retain college graduates, and more importantly to attract skilled technology workers in their 20s and 30s who increasingly prefer to live in center cities.

Economic Structure

In order to assess the region's economic structure, an array of datasets were consulted. Oftentimes, the best data to use for the analysis is not available at the county level. In these cases, the MSA was used. The Capitol Region Council of Governments (CRCOG) is comprised of 38 cities and towns located in Hartford and Tolland Counties in Connecticut. These two counties, plus Middlesex, comprise the Hartford-West Hartford-East Hartford Metropolitan Statistical Area (MSA). Data for the MSA is generally representative of the CRCOG region (the Capitol Region) since Hartford and Tolland counties accounted for between 85% and 90% of total economic activity and population in the MSA.

2016 Population

Hartford County:	895,699
Tolland County:	151,689
Capitol Region:	974,412
Hartford MSA:	1,211,826

Overall, the region has seen moderate economic growth in the past fifteen years. Between 2000 and 2017 total employment in the Hartford MSA was virtually unchanged, while real Gross Metro Product grew at an average annual rate of 0.6%.

The Region's economic performance from 2007 to 2017 trailed the US economy, but slightly out-performed CT. However, the region's growth in 2017 trailed the state on a few key dimensions: personal income, per capita income, number of households, and GDP per worker. IHS Markit forecasts that the economic growth rates in both Connecticut and the Hartford MSA

over the next 10 years will continue to lag that of US, which will limit the amount of new development that will occur in the CRCOG region.

Economic Position within Connecticut

The table below presents a comparison of the economic performance of the CRCOG region to the State for summary economic and demographic variables. It shows that the Region accounted for about 30 to 35% of total Connecticut employment and gross state product in 2017, although its share of total CT personal income was substantially lower at just 25%. The levels of per capita income, wages, and productivity (e.g., gross regional/county product per worker) are lower than the statewide figures, although this is due primarily to the high level of economic activity in Fairfield County in the southwestern corner of the State. The table also shows that average annual growth rates for most of the major economic and demographic variables between 2000 and 2017 in the two CRCOG counties were slightly above the statewide rates over the same period.

CRCOG - Performance vs. CT for Selected Variables				
Variable	2017 Value	% of CT	Avg. Annual Growth Rate 2000-2017	Above State?
Total Nonfarm employ.	567,800	33.7%	0.1%	Yes
Non-Mfg. employ	512,400	33.5%	0.3%	Yes
Goods-producing employ.	73,700	34.1%	-1.5%	Yes
Priv. Services-providing employ.	412,200	33.3%	0.4%	Yes
State & Local Gov. employ.	76,000	35.4%	0.0%	Yes
Personal Income (Millions)	\$ 61,812.4	24.6%	3.0%	No
Wage Disbursements (Millions)	\$ 37,422.5	33.1%	2.6%	Yes
Average Annual Wage, (Thous.)	\$ 65.9	98.1%	2.5%	Yes
Per Capita Income (Thous.)	\$ 59.0	84.3%	2.7%	No
Gross County Product (Millions)	\$ 80,172.5	30.5%	2.7%	No
Total population	1,046,900	29.2%	0.3%	Yes
Pop. 25 thru 64	721,200	29.0%	0.2%	Yes
Households	402,600	29.4%	0.3%	No
Total Retail Sales (Millions)	\$ 17,713.5	28.8%	2.8%	Yes
GCP per worker (\$ per job)	\$ 141,210	90.6%	2.6%	No

Note: the above data refer to the combined statistics of Hartford and Tolland Counties; growth rates refer to nominal dollars.

The table also shows a relatively large and diverse regional economy. Total employment in 2017 was approximately 567,800 jobs in the two CRCOG counties, compared to 638,600 in the MSA. An IHS analysis of the Shannon-Weaver index of structure diversity yielded a value of .81 for the MSA in 2017, the same as the weighted average figure across all MSAs. The higher the

value, the more diverse a regional economy, and the more closely its distribution of employment by sector matches that of the US economy.

Hartford's role as a state capital is also an asset to the region. The activity generated by state government has been a long-term benefit to the Region's economy. State government activities provide a large and predictable base of employment, wages, and purchases of goods and services.

On the other hand, the State of Connecticut's challenging fiscal situation limits the ability statewide to increase the state economic competitiveness through a combination of reducing business taxes and offering economic incentives, whether in the form of tax credits or abatement, grants, low interest loans and in-kind services.

Regional Position

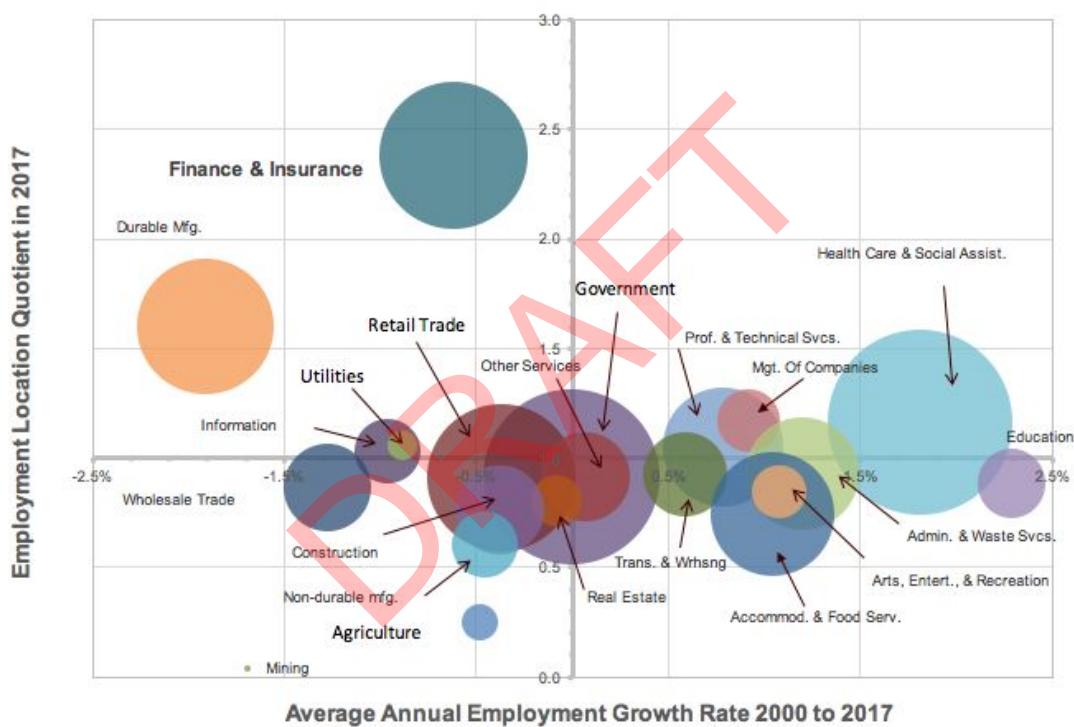
The Capitol region enjoys a strategic location in the center of the large market of the Northeast US. The Boston and New York MSAs are located within drives of 2-hours or less, with New York being within daily commuting distance. The total population in 2015 within a 50-mile radius of downtown Hartford was 4 million persons, with 44.4 million living within a 200-mile radius so a very large market can be served by businesses located in the Region.

The Region should also take advantage of its lower costs of doing businesses, and living, compared to other Northeast metros, specifically Boston and New York. The cost advantages make it especially attractive for business service, IT support, information processing and analytics, and digital design activities where transportation cost is not an issue. The lower cost of office and warehousing space, especially in Hartford, are attractive to these types of service providers, as well as for other types of services such as Architectural and Engineering design services.

Target Sectors

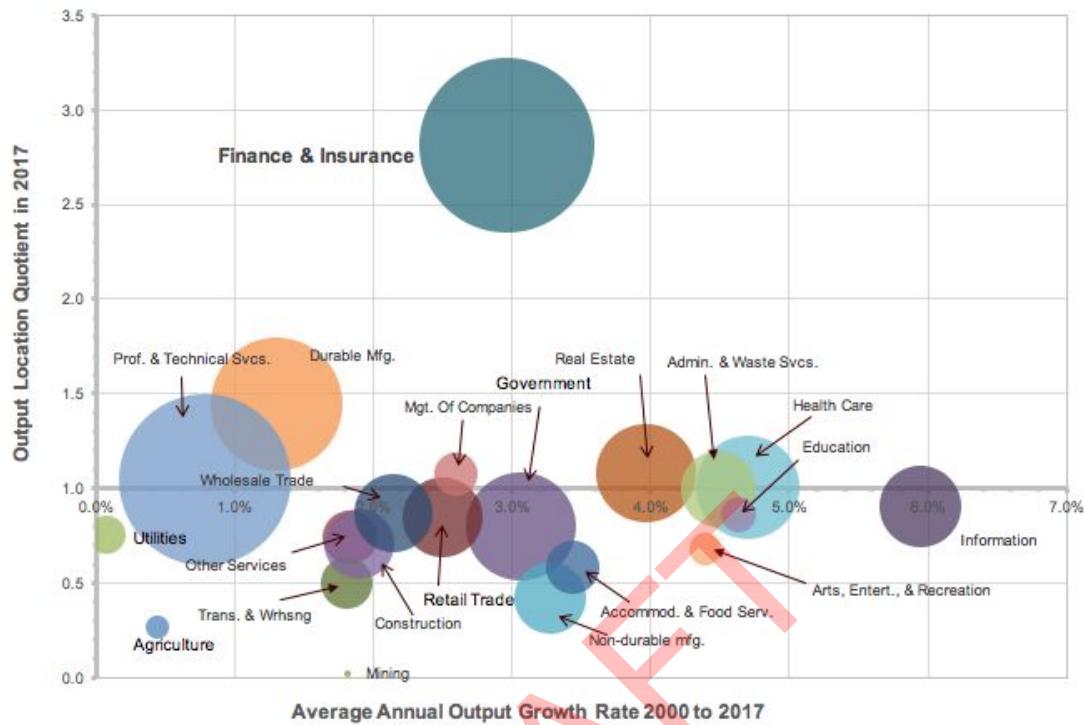
In order to identify target sectors for economic development efforts, a shift-share analysis was performed for the MSA, analyzing performance by 4-digit NAICS sector from 2000 to 2017. Next, sectors were classified into High Performing, Emerging, Legacy and Laggard based on employment growth, size, location quotient, and US growth of each sector. This information is displayed in two different ways in the charts below: first on an employment basis, and then on an output basis.

Historical Change in the Performance and Structure of the Hartford MSA's Economy by Major Sector based on Employment



Source: IHS Economics, 2018. Business Markets Insights data base. Bubble size is sector employment in 2017

Historical Change in the Performance and Structure of the Hartford MSA's Economy by Major Sector based on Output



Source: IHS Economics, 2018. Business Markets Insights database. Bubble size is sector output (millions of \$) in 2017

Defining clusters and sub-clusters as used in the US Cluster Mapping Project (i.e., Porter Clusters), the 4-digit NAICs codes were then mapped to cluster definitions. Traded and local clusters were differentiated, and advanced sectors were identified. Finally, forecasted output growth was assessed in order to compare performance in each sector to the level of growth expected moving forward.

The targeted sectors include:

- **Business Services**
 - Sub-sectors: Data Processing (5182), Architectural & Engineering (5413), Computer Systems Design (5415), Management Consulting (5416), Management of Companies (5511), Employment Services (5613)
 - Large Legacy Legal Services sector (5411)
 - Business services supports and enhances growth in other sectors – Finance, Insurance, Health Care
 - Benefits from region's cost advantages, proximity to large NE US market
- **Insurance and other Financial**
 - Sub-sector: Insurance Services (5241), Other Financial Services (5329)
 - Region still has a competitive advantage for this sector – critical to maintain it

- Insurance services creates demand for a variety of business services, and workers in financial occupations
- **Metal Working and Metal Products (upstream and downstream)**
 - Sub-sectors: Forging and Stamping (3321), Cutlery and Hand Tools (3322), Architectural and Structural Metals (3323), Hardware (3325) Machine Shops (3327), Other Fabricated Metal Products (3329).
 - Large laggard Wholesale trade sectors – hardware, electrical goods, and Misc. Durable goods
- **Printing Services**
 - Subsector: Support Activities – printing (3231)
 - Creates demand for Chemical Products
 - Supports Business Services
- **Production Technology Machinery and Equipment**
 - Subsectors: Industrial machinery (3332), Metalworking Machinery (3335), Electric Lighting Equip. (3351), Other Machinery (3339), Other Electrical Equipment and Computers (3359)
 - Electronic Instruments (3345) Large laggard sector – demand from Aerospace
 - Legacy of Region's aerospace history, major supplier to it
- **Aerospace**
 - Sub-sector: Aerospace products and parts (3364), Legacy sector, still a major presence.
 - Source of demand for machinery and metals products
 - Challenge will be supply of skilled workers
- **Medical Devices**
 - Subsectors: Commercial and service industrial machinery (3333), Medical Devices (3339)
 - Serve large NE US health care sector, health insurance providers.
 - Region has small Pharmaceutical sector (3254), could benefit from other, but located to major pharma clusters in other NE metros
- **Communications Equipment and Services**
 - Sub-sectors: Communications Equip. Mfg. (3342). Cable and Subscription programming (5152)

The clusters identified show that the Region has a concentration of activity in advanced manufacturing sectors that produce a range of complex, high-value added durable mfg. goods such as machinery, electrical equipment, electronics, tools, aerospace, transportation equipment, etc. This cluster exists, and continues to perform well, because of the legacy of producing these types goods due to such companies as Pratt and Whitney. Targeted workforce training programs should continue, and be enhanced as necessary to train workers in key occupations required by these companies.

A Case for Action

The Metro Hartford region is experiencing a demographic and economic point in time not unlike what has been experienced by many regions that today we would consider successful. Their transformation can be looked to as models of what is possible:

- In the 80s, forty percent of downtown Denver's office space was vacant, reflecting the disappearance of 28,000 energy-related jobs due to the withdrawal of federal price supports for western oil shale development.
- By the 1980s and 1990s, Durham, NC had lost its textile and tobacco companies and suffered from blight and downtown vacancy.
- Around 2003 Austin lost approximately 36,000 jobs in 36 months.

The stories of how today's best-in-class cities and regions once suffered could go on for pages. However, it's what brought them back from that point to become the places we know today that is what's important. The following common themes from twelve of the country's most transformed regional cities provide a roadmap for Metro Hartford:

A Bold Vision, Tenacious Leadership, and a Broad Civic Infrastructure

These region's created a compelling vision for a better community - one that was defined by their civic leaders. Public and private leadership championed that vision over the course of years, sometimes decades. And a civic infrastructure was created to develop and implement a plan to achieve that vision.

Plans Must be Visionary, Market-based, and Action-oriented to Guide Regional Transformation

Once their vision was identified and their leadership and partners were mobilized, nearly every community created some sort of plan around that vision. These plans were based in the reality of their region and the planning process allowed for an opportunity to further understand and vet that perceived reality through data. Industry strengths and weaknesses were analyzed, quality of place assets were inventoried, and national economic trends were researched. Based on this assessment, big goals were set. They reflected their long-term vision but were comprised of short-term actions that allowed the community to raise resources to carry them out and to track progress. Industry leaders often played a critical role in the development of these plans. They help public and civic leaders understand the market needs and opportunities and what they could do to help capture those opportunities. Leadership of a civic intermediary and the commitment from the public sector to create an actionable plan around a market-based vision has been key to getting industry to the table. These plans had real metrics associated with them, were regularly updated, and were relentlessly pursued. Both the private and public sector ensured true accountability; the former demanded success for ongoing funding, and the latter required practitioners to report publicly on their results.

Regions Rally around Their City

Because the private sector is often the biggest advocate for a regional approach, in many cases a regional business intermediary (e.g. a chamber or private economic development organization) served as the conduit that allowed for collaboration beyond political boundaries. A lack of housing, effective transportation, and civic amenities in a center city affect a suburban business's ability to grow and attract talent. In the best cases, leaders recognized the integral connections between the three and created coordinated approaches to growth. Successful regions have leveraged growth in the core through increases in population, tax base and, as a result, increased quality of place amenities and infrastructure are funded locally, further increasing quality of place for all residents.

Engage and Strengthen Industry in a Whole New Way

Some communities decided to turn a few strong businesses into many. For example, Nashville civic leaders and the Chamber created the Nashville Healthcare Council to spur the growth of that industry, which now comprises 500 companies and contributes \$30B to the local economy. Other regions focused on creating meaningful avenues for existing business to collaborate and innovate together. This also extends to leveraging talent and university research to build on an existing industry base, as several regional cities attracted new businesses based on specialized R&D or degree programs that complemented their needs. Finally, When alignment existed between existing sectors, supporting infrastructure, and market trends, the opportunity to grow new industries was identified.

Regional Investments Support Quality of Place

These regions sought to attract residents by making investments in recreation amenities in the form of trails, bicycle paths and water access, and arts and culture in the form of theatres, museums, music venues, and downtown entertainment districts. In regional cities where the market drivers were not clear, the local public sector stepped forward to be the first dollar in on large-scale investments in quality of place. By doing this, they signal to the private sector where growth should be occurring, and that they are a willing and active partner in spurring growth. Furthermore, most communities have a Metropolitan Planning Organization, an airport authority, a transit authority, an urban redevelopment authority, and any other number of organizations that have their own plans for the development of traditional infrastructure. Regional cities that have transformed have engaged all of these organizations to make collective decisions about infrastructure improvements based on the needs of the private sector and the opportunity to spur growth.

Private Sector Investment Responds to Talent Base

In transformed regional cities, the economic development community has recognized the importance of talent and is active in facilitating collaboration between higher education and their existing businesses. In several cases new talent programs were developed to allow for a focus on the industry sectors defined in their plans. These transformed regional cities created an entrepreneurial ecosystem that is unique to their culture and economy. They created hubs of entrepreneurship by investing in modern workspaces and forging meaningful partnerships. In

doing so, they are enabling their highly mobile, educated workers to stay and create businesses, and attracting the young and educated from other parts of the country to do the same.

Higher Education Partners are Critical for Regional Transformation

Most regional cities have a college or university to train and educate their youth and workers. However, that the results meet industry needs and that graduates want to stay and work for local industry is not guaranteed. Transformation requires a talented workforce that resides in or is attracted to a regional city and forms a dependable resource for employers. In order to make that happen, higher education and industry must partner to ensure the relevance of the curriculum and to place students in internships and jobs. In addition to providing a steady pipeline of talent, higher education institutions can also provide cultural and infrastructure amenities for the broader community. From theatre and recreational facilities, to neighborhood redevelopment, higher education can play a multifaceted role in regional success. However, in order to do so, those amenities must be integrated with the larger community instead of siloed within a campus. Ultimately, each transformed regional city did especially well at fostering communication and active engagement between their higher education and economic development stakeholders.

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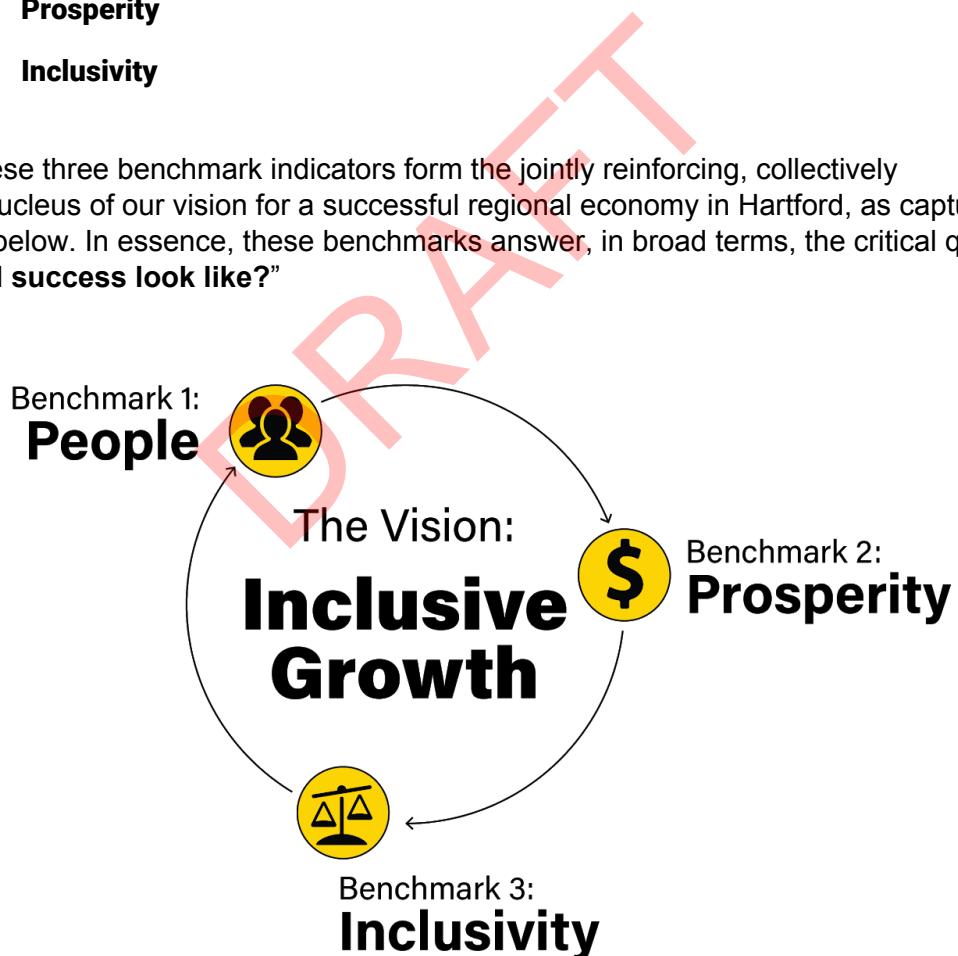
Defining Success: A Laser Focus on Inclusive Growth

As demonstrated above, the country's revitalized regions have maintained a laser focus on growth. Metro Hartford Future will position the Metro Hartford region to do the same, but with an emphasis on inclusive growth—our *vision of success* for the regional economy. In order to create shared understanding among the key stakeholders around that vision of inclusive economic growth, Metro Hartford Future will use three benchmark indicators against which we will vet potential game-changer strategies and ultimately measure our success. While we know that inclusive growth is a complex concept to measure and should ultimately encompass many indicators, we are choosing to focus on three to create a simple, easy-to-measure, and clear guidepost for the region.

Benchmarks for Inclusive Growth:

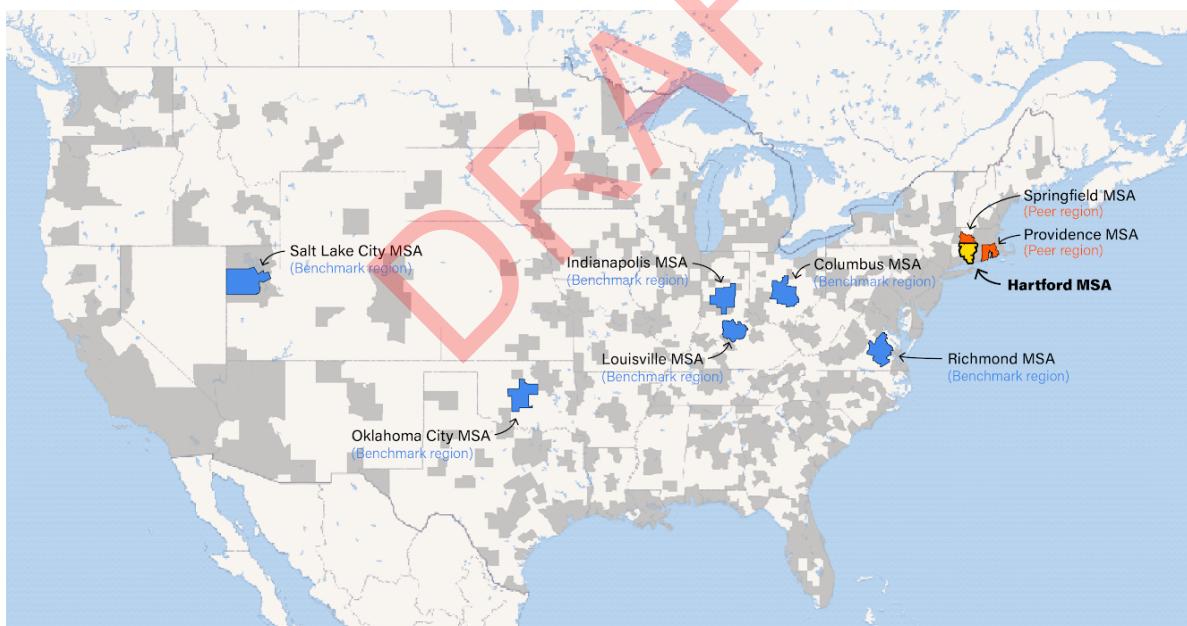
1. **People**
2. **Prosperity**
3. **Inclusivity**

Together, these three benchmark indicators form the jointly reinforcing, collectively meaningful nucleus of our vision for a successful regional economy in Hartford, as captured by the diagram below. In essence, these benchmarks answer, in broad terms, the critical question: “What would success look like?”



How does Metro Hartford Compare?

Having established the key benchmarks for a vision of inclusive growth, it is important to not only understand where Hartford currently stands, but to consider how it compares to other regions. In order to use comparable regions, we will focus on Metropolitan Statistical Areas (MSAs or metro areas). MSAs are formed by grouping adjacent counties that have a strong connection to an urban area or central city/cities. There are 382 metro areas in the US, and collectively they contain the majority of the US population. In addition to considering how Hartford fits in broadly with all other MSAs, the project team has identified a handful of these metro areas to specifically focus on in comparison studies. These metro area are referred to as benchmark regions and peer regions. The six benchmark regions (shown below) were selected because they were identified as having achieved recent economic success that is likely attributable to a variety of local policies. (In other words, they are doing well in ways that are likely not accidental, and which may be instructive to the Hartford region.) The peer regions (Springfield, MA, and Providence, RI) are geographically and economically similar to Hartford.



Benchmark Regions (blue):

- Columbus, OH
- Indianapolis, IN
- Oklahoma City, OK
- Richmond, VA
- Louisville, KY
- Salt Lake City, UT

Peer Regions (orange):

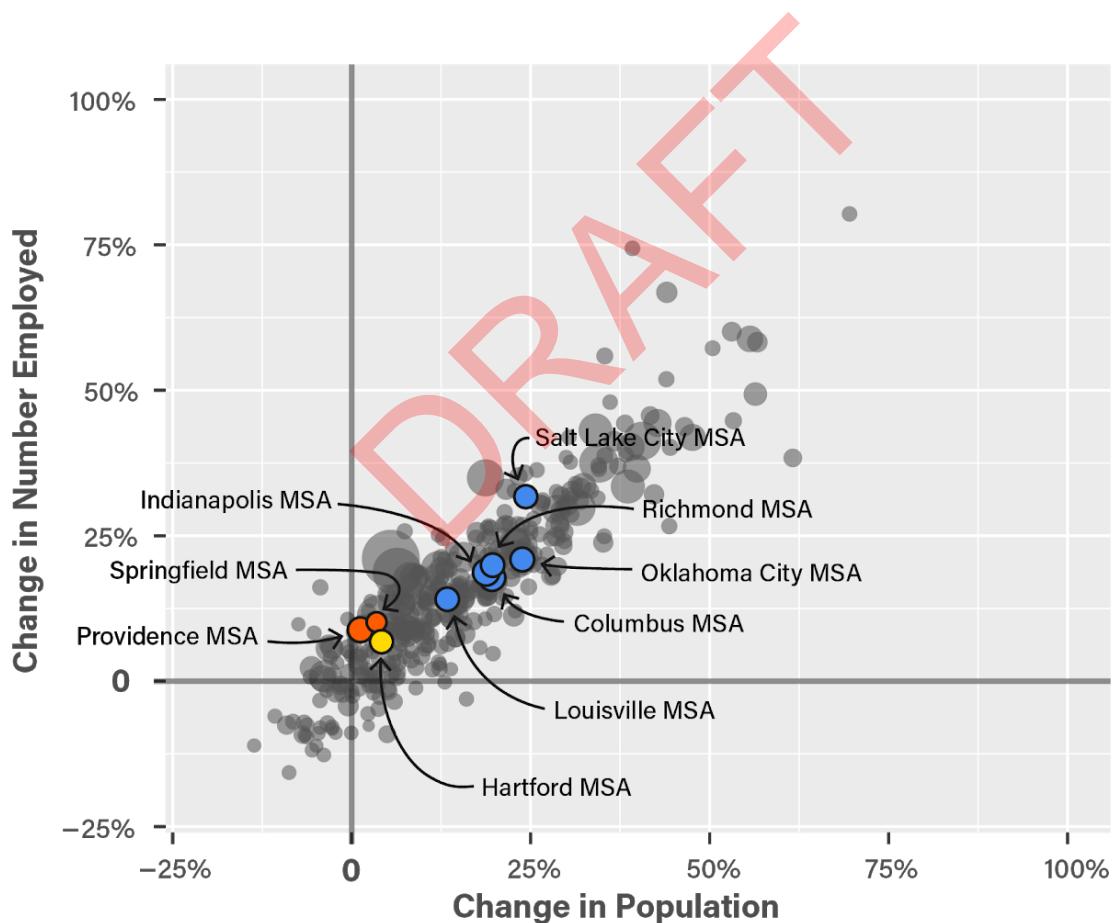
- Providence, RI
- Springfield, MA

Benchmark 1.) People

There is no more vital ingredient in an economy than people. The first benchmark, therefore, refers to regional growth. Hartford has seen little net change in total population or total workforce in the last fifteen years, and lags significantly behind most other MSAs, as well as all of its benchmark regions. It is also notable that those benchmark regions, although generally above average across all MSAs, have not been outliers in their own growth rates. In other words, Hartford does not need to outrun the proverbial pack in order to achieve growth similar to its benchmark regions; instead, it simply needs to catch up.

Figure: Population and Employment Change, 2001-2016

All MSAs shown; sized by population



Source: US Bureau of Economic Analysis

Benchmark 2.) Prosperity

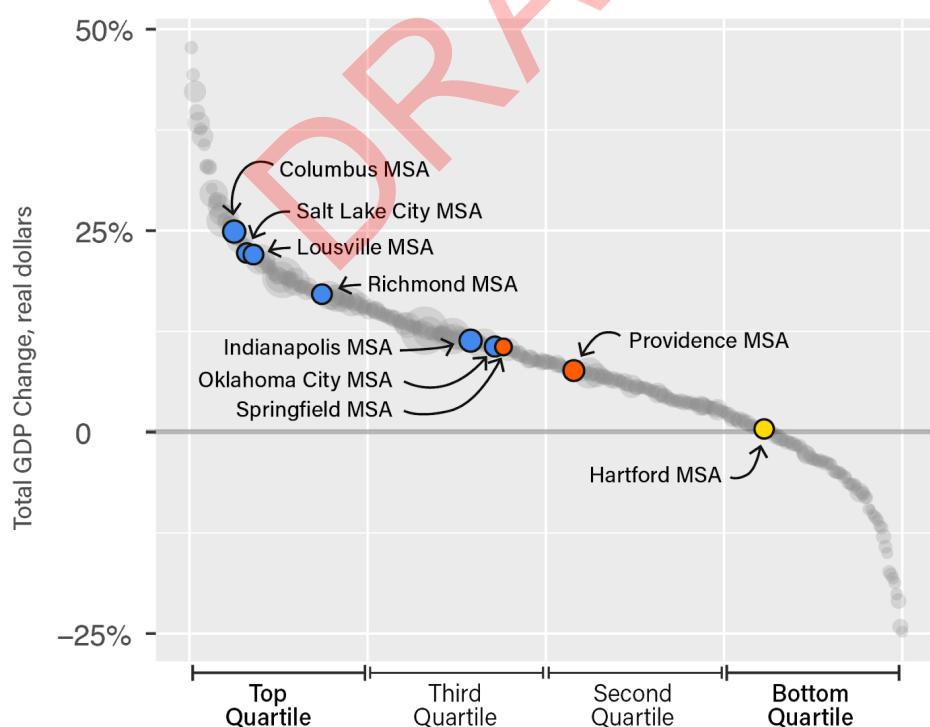
The second benchmark refers to economic output, which at the broadest scale can be captured using Gross Domestic Product (GDP)—also referred to at a regional scale as Gross Regional Product (GRP). Metro economies in the US are diverse, and many fluctuate from national patterns. Hartford's economy reached a low point in the 2008/09 recession, with a more significant year-to-year loss than most other regions in the country. It also remained sluggish (with slight losses) for several years following the recession, a period during which both its benchmark regions and peer regions saw growth.

Hartford's post-recession economic stagnation places the region within the bottom quartile (25%) of metro economies in the US in net growth following the recession (even including the region's 2015 and 2016 gains). And while there are several regions suffering from far more extreme losses over this period, Hartford's gradual decline cannot be explained by the national or regional trend.

Note: despite its post-recession sluggishness, Hartford remains a highly efficient economy, with both high wages and high GDP per capita compared to other regions.

Figure: Post Recession (2010-2016) GDP Change in 2016 Dollars

All MSAs shown



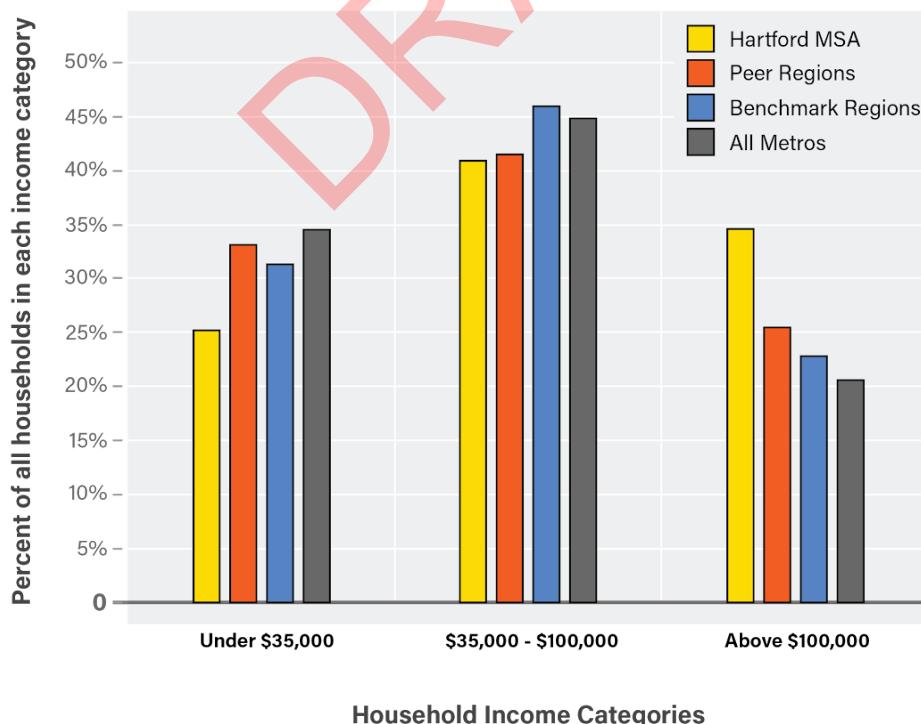
Source: US Bureau of Economic Analysis

Benchmark 3.) Inclusivity

The third benchmark refers to the level of inclusiveness within the region's economy. Inclusivity is more than a socially motivated goal; it is also a vital ingredient in sustainable economic growth. On the surface, there are many ways in which Hartford is already relatively inclusive economy. The region has below average rates of poverty, and high levels of income (including relatively low rates of race and gender income disparity). To some extent, the region's challenge will therefore be improve upon these measure, while generating population and economic growth.

However, there are also components of inclusivity in which Hartford struggles relative to other similar regions. One such measure can be found through the distribution of incomes (a simple measure of which is seen in the chart below). In the Hartford region, there are relatively high concentrations of higher-income households, and relatively low concentrations of lower-income households. (And those facts alone suggest a strong regional economy.) But there are also relatively low numbers of middle-income households. And these middle-income households are a vital ingredient for economic growth. Furthermore, while the gap may not appear dramatic in the figure below, Hartford's lack up population in the middle-income range ranks it among the lowest 10% of MSAs.

Figure: Percent of Households by Income Category



Source: US Census Bureau

Goals

Three goals have been identified, the pursuit of which will help to ensure that the Metro Hartford region achieves its vision of inclusive growth. These goals were vetted and prioritized by our Advisory Committee.

Three goals for Metro Hartford are:

- 1. Create the workforce of tomorrow**
- 2. Establish a vibrant quality of place to retain and attract talent**
- 3. Enhance collaboration to promote and grow the region**

While we will review each of these opportunity areas individually, it is important to keep in mind that they do not represent distinct potential work streams; rather, they involve highly interconnected issues. The region's **workforce of tomorrow** will not exist without a **vibrant quality of place**, which will only be made possible through **enhanced regional collaboration**. The interrelation of these opportunity areas provides a solid cornerstone for a successful strategy and its implementation.

For each of goals, the following information is provided to assist with defining and prioritizing game-changer strategies:

- Data on the region's related strengths and opportunities
- Related strategies from existing plans
- Stakeholder interview findings
- Best practice examples from across the country

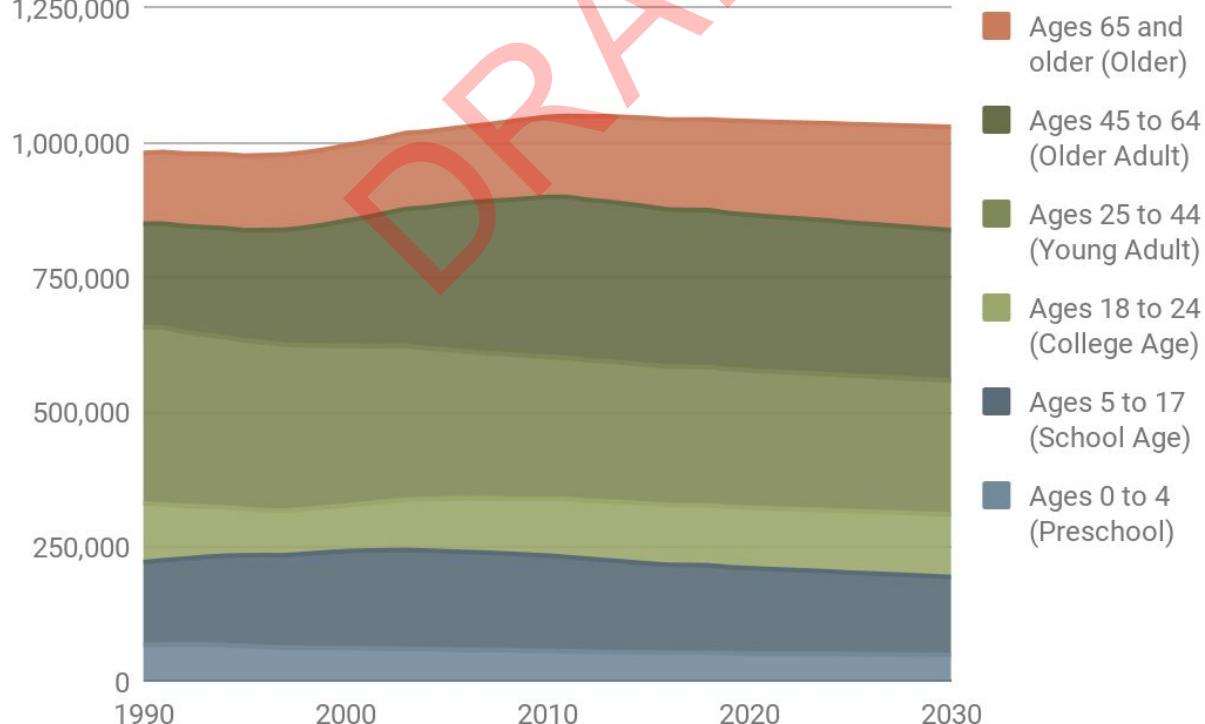
1. Create the workforce of tomorrow

Key Data Points

The metro Hartford region has significant strengths and opportunities in advanced sectors as revealed in the SWOT analysis. In order to ensure success in these sectors and enjoy the economic benefits of these locally, it will be critical to plan ahead to meet the needs of advanced-sector employers. The region will need to retain, upskill, and attract talent in these sectors in order to remain competitive.

A primary challenge in meeting these needs will be the declining population in the region and in the state. The metro Hartford region has seen a similar post-recession growth and decline rate as the state of Connecticut, with nearly 2% population increase in 2010 and stagnating or declining population since then. Unfortunately, the growth seen from 2009 - 2010 has been displaced by population loss. **Since 2010, the region has lost 4,375 people**, dropping from 975,164 to 970,789 in this time period.

Population Change and Forecast by Age Group:



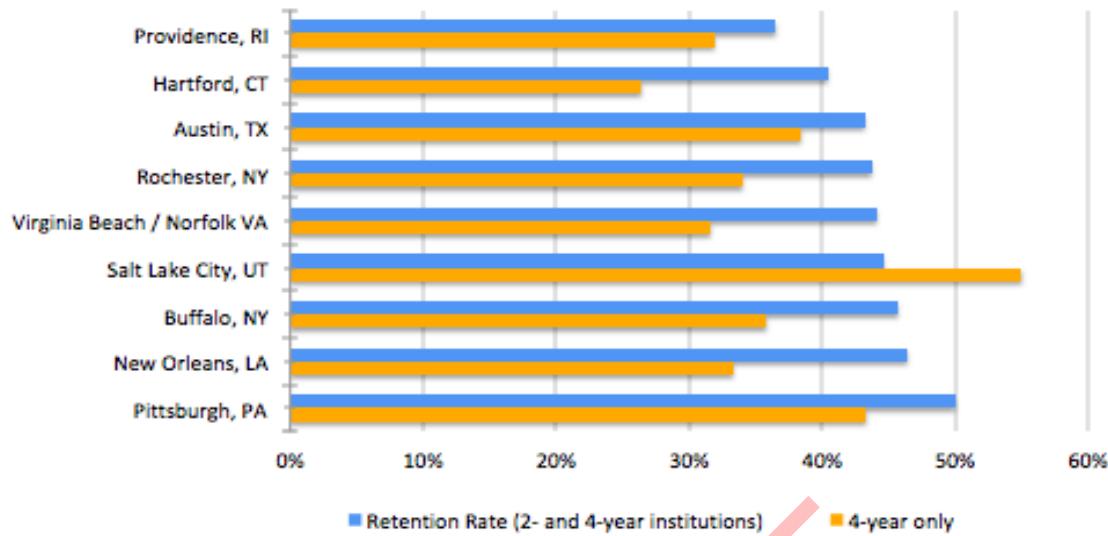
Population by age	2016	2030 (e)	% Change
Ages 0 to 4 (Preschool)	54,781	49,891	-9%
Ages 5 to 17 (School Age)	167,889	144,690	-14%
Ages 18 to 24 (College Age)	110,211	115,912	+5%
Ages 25 to 44 (Young Adult)	258,738	248,452	-4%
Ages 45 to 64 (Older Adult)	295,012	279,313	-5%
Ages 65 and older (Older)	161,385	191,630	+19%

On the other hand, the balance between generational representation in the workforce is trending toward more millennial participation as older generations age out. For example, a dependency ratio measures the pressure on the working age population to support dependents, comprised children 14 years and under and persons 65 years and above; a lower ratio is preferred. In 2016 the Hartford MSA's dependency ratio was 0.493 compared to the US figure of 0.507. Many regions face challenges when older generations age out of the workforce, and the **generational trend is promising** for the metro Hartford region.

At the same time, the metro Hartford region has yet to fully capture the economic benefits of its robust higher education system. In fact, a 2016 study by the Brookings Institution listed the MSA as **one of the worst in the country in terms of college graduate retention**.

Compared to the benchmark metro areas below, the Hartford MSA performs below average in 2- and 4-year institution retention and has the lowest rate of all benchmarks for 4-year retention alone.

College Graduate Retention



Source: CRCOG, *Progress Points 2016*, Brookings Institution

An ongoing challenge will be to ensure that all population segments are ready to contribute to and benefit from the region's economic growth; the metro Hartford region will need to pay close attention to minority, women, and immigrant labor force participation. "Untapped" workers - youth not working or in school, low-skill adult workers, those without employment, those with limited English proficiency, veterans, and those with disabilities - present a significant challenge and opportunity in terms of workforce development. All together, **more than 37,000 potential workers in the region are "untapped"**:

Number Unemployed, 2014

	Total	Limited English Proficiency	Veterans	People with Disabilities	Foreign-born
Opportunity Youth (not at work, not in school, 16 - 24)	8,489	307	-	1,454	452
Low-skill adults (25 - 64)	14,657	2,784	551	2,107	4,411
Middle-skill adults (25 - 64)	8,059	334	1,684	1,759	951
High-skill adults (25 - 64)	6,554	767	226	806	997
Total	37,759	4,192	2,461	6,126	6,811

Source: CRCOG, IPUMS-USA, University of Minnesota, www.ipums.org. Results from ACS 2014 for Hartford and Tolland County combined.

At the same time, **a majority of job openings expected in the metro Hartford region from 2016-2022 (51%) will be middle- and high-skill jobs.**¹ Similarly, fewer than ¼ of jobs in the MSA are held by workers with less than a college degree. Close to 1/3 of jobs are held by workers with a bachelor's degree or higher.² In order to meet employer demand for talent and ensure the economic benefits of these jobs stay in the region, industry-driven training will remain an important tool for the region's continued growth.

Existing Plans

The Capitol Region has 11 existing assessments and strategies that incorporate a focus that is relevant to Creating the Workforce of Tomorrow. They include the following. Key findings are cross-referenced below as [1] to attribute individual findings to the relevant plan:

1. Yale CT Workforce Assessment, 2017
2. Knowledge Corridor Talent & Workforce Strategy, 2014
3. Advanced to Advantageous: The case for New England's Manufacturing Revolution, 2015
4. CBIA Survey of Connecticut Manufacturing Workforce Needs, 2017
5. Automation and the CT Job Market, 2017
6. Commission on Fiscal Stability and Economic Growth, 2018
7. Progress Points, 2016
8. Innovation Places
9. Tomorrow's Framework: Connecticut Technical High School System Strategic Action Plan, 2014-2017
10. Connecticut Workforce Assessment, Yale School of Management, 2017

Promote High-Opportunity Careers to Middle and High School Students through Branding and Exposure Opportunities

Recommendations from Existing Plans

- Promote High School and Private Sector Engagements to Teach Fundamental Professional Skills: Establish relationships with local business leaders and encourage them to get involved with local students and increase their visibility. Publicize high-school level internships and summer jobs. [1]
- Widen Middle and High School Career Awareness for the Region's Target Industries: In an effort to bridge this gap, the Knowledge Corridor region should expand employer engagement initiatives for students, their families, and the community as a whole. New approaches to industry exposure include open houses, wherein students and their families can visit modern manufacturing facilities as is currently showing promise in Connecticut, or visit demonstrations of modern medical equipment. Likewise, employers

¹ CRCOG, Connecticut Department of Labor, 2012 - 2022 job projections

² QWI, average of quarters, Hartford MSA

note that job fairs and classroom visits can be worthwhile and rewarding, but coordination between large numbers of schools is time consuming and limits employer participation. As a region, consider securing funds to create a new coordinator position to better coordinate events such as open houses, job fairs and classroom visits. [2]

- Rebranding the industry - "Make It" a better brand: Moving away from the old view of manufacturing by changing the language we use for it - by calling it the "Maker Revolution" we change the brand of "advanced manufacturing" to reflect the high pay, critical thinking, advanced technologies and designs that define it. Support intake of interested students by helping them enroll in the programs that will support their success in advanced manufacturing. [3]
- Aerospace Goals: Raise awareness of the career opportunities available in the local aerospace supply chain for local high school students. [9]
- Public schools need to better convey the potential of modern manufacturing as a career. [7]

The Capitol Region Speaks - From The Interviews:

- In actuality we need to reach students at a younger age. The negative perception of manufacturing is still a challenge. There are efforts to get young people interested - just an issue of scale.
- Traveler's and Aetna have/had a program to bring high schoolers in to expose them to opportunities in the field. These programs get kids excited and can lead to them becoming interns later on. But the connection between high schools and industries should be better. United Healthcare is trying to implement something similar. What if there were a day when all businesses brought high schoolers in to visit their company?
- CareerWalk was started by BlumShapiro, PBI Financial Group and Junior Achievement of Southwest New England. Participants from the three high schools visit a variety of West Hartford Center establishments — accounting, banking, finance, marketing, retail, and food and beverage. This is being rolled out in Hartford and New Haven as well.
- Need branding around industry-specific opportunities, e.g. branding around manufacturing training - medical instruments to missiles. For those who turned away from manufacturing, becomes image that it's a greasy dirty job, could be a brand and activity to get people's attention. Has to be radical.
- How do we help school boards and superintendents of the comprehensive schools recognize that 30% of kids won't go to college and that they don't have to go to a low-wage retail job? "Dream It. Do it." is trying to change the culture/ expectations about going to college.

Case Study: San Antonio, TX



Conceived in 2001, Alamo Academies provides apprentice-style training to high school juniors and seniors in San Antonio that is focused on high-wage, in-demand industry credentials. The program is organized around sector-specific academies—initially beginning with an Aerospace Academy (designed to create a workforce pipeline for Lockheed Martin and other major contractors in the region). Additional academies have since been added IT (in 2002), Manufacturing (in 2004), Health Professions (in 2009), and Heavy Equipment (in 2014). Attendance to the academies is free of cost to all eligible students, yet the program provides both a high school diploma and a college degree (Associate of Applied Science), in addition to transferable college credits. After completing the program, 94% of graduates either continue on to additional higher education or enter directly into a high-wage, in-demand job. The Alamo Academies model has been recognized nationally, having won several awards and received various recognition for its innovative, industry-focused program design and curriculum.

Case Study Key Takeaways:

- The program couples **high school and college education**, as well **industry-specific credentials** in a **tuition-free** program.
- Specific academies have been created in response to **industry demand**, leading to exceptional **job placement and compensation rates**.

Engage/ Create Industry Consortiums to Inform Curriculum and Provide Internship Opportunities for High School and College Students through a Coordinated and Scaled Approach

Recommendations from Existing Plans

- Reintroduce shop classes and other classes that teach basic manufacturing skills. Update shop classes to reflect the present role of robotics and automation. Create data analytics classes for tech-savvy students. [1]
- Strengthen Vocational and High School Links/Pathways to Employers and Education: Outstanding models such as Westfield Vocational Technical School and Pathfinder Vocational School are uprooting the notion of the successful high school as a one-size-fits-all educational experience. Despite these examples, the transition from high school to college or career is not a universally well-guided process. Through partnership with business and higher education using strategies like curriculum

alignment, career coaching (similar to Virginia Community College System Career Coaches, who operate in high schools) and others, vocational and high schools can ensure that students graduate high school ready to work and/ or continue their educations. [2]

- Create Comprehensive Educational Pathways: A fully connected system for students beginning in high school through a variety of higher educational institutions, technical education, vocational education, training and even internships and work experience. Credit is fully integrated and connected through all levels on the pathway. [3]
- Create connections implemented and strongly reinforced between industry and educational institutions so that students are not only workforce ready, but new ideas from students can permeate the industry, spurring innovation. Reinforce career progression and employee retention through paid internship and apprentice models that earn pay and college credit, leveraging available funding from state and federal grants. [3]

The Capitol Region Speaks - From The Interviews:

- Align the education system with the workforce development system, so that students are being taught the skills that employers need.
- Haven't seen evidence of a bioscience-related industry group spelling out in detail what their workforce needs are. There are a lot of educational institutions lobbying for their existing programs rather than the industry speaking clearly and precisely about what they need. The MHA could pull together people across industry sectors to identify critical skills they need - that would be helpful.
- In insurance, because there is stuff going on and conversations taking place, make sure there is consistency in what skills of tomorrow looks like. Not sure everyone is aligned. Has been transformation on that front. To have the right skills and be considered for opportunities - what does that look like? Schools are asking - what do students need to be considered for jobs and internships. Needs to be greater awareness.
- InsurTech has simultaneously launched a UCONN and Univ of Hartford intern program with their participating companies.
- ALL IN! For Hartford Students represents Hartford Promise, CWP, MHA, Hartford Public Schools, Aetna, and others. Their goal is to increase the percentage of Hartford youth completing post-secondary credentials from 23% to 50% by 2025 and close the talent gap experienced by employers in our region. Students are getting into college, but following up with them to make sure they stay in and take advantage of internships is key. That is where we are losing them - not staying in school and/or making connection to internship programs.
- Focus efforts on colleges that serve more local students who are more likely to stay in the region.
- Create a coordinated program for interns of all companies to expose them to quality of life that the region has to offer.

- The way that the region works is transforming and has been evolving for 20 years and even more so right now with automation, digitalization, and AI. This presents challenges and opportunities for industries like manufacturing, insurance, and finance. How do you prepare and transition the workforce?

Case Study: Central Indiana Corporate Partnership



The Central Indiana Corporate Partnership (CICP) brings together leaders across industrial sectors through its six targeted initiatives, each of which lives under its own brand:

- AgriNovus (agricultural innovation),
- Ascend Indiana (workforce development),
- BioCrossroads (life sciences),
- Conexus (advanced manufacturing and logistics),
- Energy Systems Network (energy technology), and
- Tech Point (information technology).

Indianapolis was highlighted as one of three precedents in the recent book, *The New Localism*, in which authors Bruce Katz and Jeremy Nowak write about the noticeable success that CICP has had in the last two decades. The overarching message of the book is that local leadership is driving the future of economic development, and CICP's efforts exemplify that message. As a result of its coherent organization and advocacy, CICP has become a model for spurring investment and creating impactful industry-wide strategy that resonates throughout the private sector. What sets CICP apart is its leadership and clarity of focus in each of its key industry areas. Ascend Indiana, the most recent of CICP's initiatives, explores workforce challenges and opportunities across sectors broadly and seeks to connect talent with employers in the region. In addition, the CICP's other initiatives include sector-specific workforce development projects. The Conexus internship program, for example, was created in 2015 and has matched hundreds of advanced manufacturing interns based on employer-identified need. Also, a recent grant-funded (\$4.2 million) AgriNovus campaign is being developed to raise awareness of opportunities and promote entrepreneurship within the agri-science sector.

Develop an Industry-Driven Credential/Training System, with a Dual Track for Youth and Adults (Focus on Out-of-School Youth and Un/Under-employed Adults), Based on the German Model

Recommendations from Existing Plans

- Sector partnerships are most effective when combining key attributes (funding, technical assistance and communication) with skill equity.* [1]
- Build on and expand the success of initiatives such as Precision Manufacturing Regional Alliance Project, the Healthcare Workforce Partnership of Western Massachusetts, Training and Workforce Options (TWO), and other employer engagement initiatives. [2]

- Providing matching funds to employers for specifically customized training requires businesses to extend both their own money, time and resources to work together with colleges and training providers to develop customized training for both new and incumbent workers to meet their needs. A pilot (program) could reallocate existing funding to small- and medium-sized regional employers to enable them to engage local educators in the development of customized training for their businesses. Employers would be required to guarantee new or continued employment for successful graduates of these programs. A similar model is now being developed between Springfield Technical Community College (STCC), Holyoke Community College (HCC) and the Massachusetts Competitiveness Project. [2]
- InsurTech goals: Create strong pipelines of talent needed to drive process and product improvements with new technology [9]
- If we want it to be a strategy for the region - if we made All in Hartford** regional would get a lot more buy-in - when we go after the hardest cases first, the ROI and turnaround rate is slower - companies need to hire people tomorrow - if we could put it all together in a more comprehensive regional effort that deals with underskilled, underprepared workforce in a way that is not just the least prepared, but also includes them, would get more traction and move faster
- Embed soft skill training
 - Across every industry, companies identified basic professional skills as their most pressing skills gap: customer service, problem solving, and learning agility among others. [1]
 - In order to maintain credibility for job placement purposes, such a program must enforce strict expectations and standards for completion, and/or consider ongoing post-employment coaching and support for participants. Such models could span programs targeting early ages (middle or even elementary school), which may provide a greater return on investment if gains at these early ages can be solidified, with programs for high school students and/ or adults. Acting on this kind of initiative as a bi-state regional collaboration with the joint use of resources and funding among stakeholders could help attract funding and partners. [2]
 - Four of the five skills most lacking among recent manufacturing hires are related to “soft skills”. Overall employability, such as punctuality and work ethic (cited by 74% of manufacturers), and technical skills (71%) were the top two. Other noted deficits include problem-solving and troubleshooting (45%), interpersonal/teamwork skills (44%), and written/verbal communication skills (31%). [5]

*Electric Boat is cited in this study as a best practice example. Their Manufacturing Pipeline Initiative is a three-year pilot program designed to help the company recruit and train the talent needed for a massive increase in submarine production. Electric Boat is partnering with the Eastern Connecticut Workforce Investment Board and several academic institutions, including Three Rivers Community College, Quinebaug Valley Community College, and Ella T. Grasso

Technical High School, to recruit candidates for skilled trades positions. After two years, they have exceeded their initial goal of 5,000 participants by almost 1,000.

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The Capitol Region Speaks - From The Interviews:

- Manufacturers are looking for attitude more than experience. CCAT has created a successful pre-apprenticeship program with the Advanced Manufacturing Employer Partnership, which will soon get integrated into the comprehensive schools. A \$50M bond is being considered by the state to support apprenticeships.*
- We could create a Manufacturing Training Institute - a hub for manufacturing-related training programs from different schools, vs. schools competing... if structure and facility were in place where all schools participated, corporations would want to go to the Hartford Manufacturing Training Institute because they'll get different things from different institutions... Other times could host trade shows that would speak to the industry....
- Small companies are saying they are training, but then large companies hires for higher wages. There is a desire to collaborate, but a shortage of talent. Maybe create a shared funding pool for training? There are lots of training opportunities, but not big enough, or fast enough to meet demand.
- The German American Business Forum is comprised of wholly-owned German subsidiaries. Companies share information on their apprenticeship programs, but the idea needs to get pushed up more. Not a lot of action on people taking advantage of apprenticeship incentives. There is an interest in an HR committee to do mutual training - programs that they could develop together. Some would argue that unless you had private sector leadership take it on, might not be able to get it done - who best to deliver skills training than the employers?
- Primarily community colleges are the only way we have remotely the scale to move progress in this area for adults. We don't need help finding best in class engineers; where we struggle is the 75-125K machine operator talent who can be retrained veterans, young people with 2 year certificates, etc.

*SB 535 would create the Apprenticeship Connecticut Initiative (ACI) to develop workforce pipeline programs and provide bond funding for such programs to train qualified entry-level workers for job placement with manufacturers and employers in other industry sectors in the state that are experiencing sustained workforce shortages. The ACI's goal is to serve and place not fewer than ten thousand individuals into new jobs over the first four years of the program, with one-third of such individuals who are youth participants, with the duration of a workforce pipeline program to be not less than four years; with not more than seventy percent of such

funds to be used for the training programs, not more than twenty per cent for supporting services for the program, and not more than ten percent of such funds to be used for administrative costs.

Case Study: Baltimore, MD, Sector-Specific Training and Apprenticeships



For more than ten years, the Baltimore Workforce Funders Collaborative (BWFC)—an affiliate of the National Fund for Workforce Solutions—has been bringing together businesses and resource providers in the city of Baltimore to address the challenge and opportunity of the area's un- and under-employed population. More than a traditional job training program, the BWFC's work focuses on specific sectors, high-wage entry level employment with career potential, and programs that yield in-demand credentials. They work with businesses through a process they refer to as "deep engagement" to match their training programs with industry needs. BWFC also works hard to remove other barriers to employment for their participants through case management services. And they rigorously analyze the effectiveness of their methods through monitoring and follow-up. According to a 2017 report:

- "70-90% of participants successfully completed training and received at least one industry credential"
- "72-93% of program completers obtained employment after training," and
- "68-95% were still employed after six months."

Models like the one championed by BWFC have been demonstrated to be successful in other locations, and states are adopting similar, sector-specific approaches. In 2013, the state of Maryland funded the Maryland EARN program, which grants funding for Strategic Industry Partnerships throughout the state. The Connecticut Apprenticeship Initiative specifically cites Maryland's EARN Program as a precedent.

Key Takeaways:

- By engaging deeply with employers in specific sectors, BWFC is able to identify in-demand opportunities for high-wage, credential-based job training in specific sectors.
- By using case management staff to remove employment barriers, BWFC gives their participants—especially those coming from disadvantaged backgrounds—a better chance of success.
- By monitoring the performance of participants, including long-term follow-up after job placement, BWFC is able to improve their program design, and ensure long-term outcomes are being achieved.

Increase Funding to Support Culturally-Relevant Outreach and Supportive Services to Engage More Minorities, Women, and Immigrants in High-Opportunity Careers

Existing Plan Strategies

- Increase Degree, Certificate and Credential Attainment by Latino and African American Young Adults. This strategy strives to increase the percentage of the Latino and African-American population that earn post-secondary credentials by age 22 by pursuing a two-pronged educational approach: Replicating, on a large scale, national models of middle skill early college that integrate high school and technical college to produce a seamless path to career skills in occupations that offer family living wages, while reducing or eliminating tuition for higher education; Introducing entrepreneurial skill development in the college curriculum, and providing “incubators” where ideas can be explored and stimulate the translation of creativity into the development of businesses in technology, new media, and related fields. [2]
- Public schools must increase efforts to educate students, guidance counselors, and parents about careers in modern manufacturing, with particular emphasis on outreach to female and minority students. [5]
- Embed soft skill training
 - Across every industry, companies identified basic professional skills as their most pressing skills gap: customer service, problem solving, and learning agility among others. [1]
 - In order to maintain credibility for job placement purposes, such a program must enforce strict expectations and standards for completion, and/or consider ongoing post-employment coaching and support for participants. Such models could span programs targeting early ages (middle or even elementary school), which may provide a greater return on investment if gains at these early ages can be solidified, with programs for high school students and/ or adults. Acting on this kind of initiative as a bi-state regional collaboration with the joint use of resources and funding among stakeholders could help attract funding and partners. [2]
 - Four of the five skills most lacking among recent manufacturing hires are related to “soft skills”. Overall employability, such as punctuality and work ethic (cited by 74% of manufacturers), and technical skills (71%) were the top two. Other noted deficits include problem-solving and troubleshooting (45%), interpersonal/teamwork skills (44%), and written/verbal communication skills (31%). [5]

The Capitol Region Speaks - From The Interviews:

- United Way Workforce Solutions Initiative, Goodwin's Women of Manufacturing Summit, and YWCA's Career Women program are some local examples of programs supporting women in high opportunity careers.
 - YWCA Career Women has been successful because Aurora Foundation for Women provided funding for a case worker to manage. This work takes time and significant investment, but results in successful outcomes.
- Part of the strategy to engaging more women in high-opportunity careers also has to be working towards paid family leave and equal pay policies to ensure full economic participation and security
- How can corporations take advantage of services of partner non-profits to provide the support services that are required to successfully develop and retain non-traditional workers?
- Programs serving underskilled workers - sometimes there are not enough to fully tackle the problems. Funders provide piecemeal funding and expect unrealistic outcomes.
- We miss the mark because we don't have holistic case management that serves the whole family.

Case Study: Pittsburgh, PA Diversity in Tech



Pittsburgh's Mayor, Bill Peduto, likes to use a simple phrase to convey Pittsburgh's policy of inclusivity: "If it's not for all, it's not for us." But, Pittsburgh's history has not been entirely one of equality across lines of gender and race. Today, however, as the city's economy transitions from its historical roots as an industrial (steel) capital to a technology (STEAM) hub, the city's leadership is trying to do better, and that starts with inclusivity. The city convenes an annual week of activities called Inclusive Innovation Week, which brings professionals together in an attempt to create a more diverse local tech ecosystem. It also sponsors initiatives like Rec2Tech, made possible by grant funding from a local foundation, which uses community centers to teach kids technology skills and inspire interest in technology careers. In addition to public initiatives, private companies and institutions are promoting a more equitable path to towards technology careers. Black Tech Nation, which grew out of Black Tech Pittsburgh, is a national organization devoted to creating more opportunities for African Americans. Local organizations like Science Tots and Moms Can Code (both founded by Pittsburgh local Erica Peterson) also attempt to build skills among young girls and women to bridge the gender gap within engineering and technology industries. The city's major institutions play their role too. Carnegie Mellon University, consistently ranked among the world's best universities for computer science, and engineering, is working with high schools to promote programming skills to disadvantaged students and underrepresented groups. In 2018, it enrolled its first-ever majority-female class of students. The Carnegie Science Center—a museum that offers educational programming—has created several exciting, girl-focused STEM education

programs for local K-12 students. And in 2009, based on work done by a group of Carnegie Mellon graduate students, the Pittsburgh Public School System created a public STEM high school, the Pittsburgh Science and Technology Academy, which takes an innovative pedagogical approach to STEM education for its majority non-white student body.

Case Study Key Takeaways:

- In Pittsburgh, the confluence of public, private, and institutional players working to create equitable access to STEM careers is helping to build an **inclusive ecosystem**.
- By focusing on key skills in growing technology and engineering industries, Pittsburgh hopes that it will not only be a hub for employers, but that it will be home to a **diverse and skilled workforce** that is representative of its population across lines of race and gender.

Case Study: Boston City Year



In 1988, two Harvard graduates established a new organization in Boston called City Year, which sought to provide opportunities to participate in a “year of service” to young people in the community. City Year became a success, and was the model for the national AmeriCorps program established under the Clinton administration. Today, City Year (now under the umbrella of AmeriCorps) is also active in many other cities and other countries. Its participant teams partner with schools to support student outcomes in disadvantaged communities. The benefits are many-fold for the communities where City Year works. By providing opportunities for service, participants (some of whom come from other places to serve) become invested in a community. The year-long, full-time service experience (which pays a small stipend as well as a scholarship) provides great professional experience for participants, and is designed to develop soft skills for participants. Indeed, most participants in AmeriCorps programs—including City Year and others—report that their service experience not only makes them more likely to be engaged in their communities, but that it helps them in their career, including by building various, specific interpersonal skills. For City Year specifically—which partners with schools to tutor students, focusing on disadvantaged communities—both the academic and interpersonal outcomes of the program go beyond participants to include the students being served, thereby building another generation’s human capital.

Case Study Key Takeaways:

- Service programs like City Year help **participants build interpersonal skills and gain professional experience**.
- Through partnerships with public schools, City Year helps students in disadvantaged communities, developing the workforce of tomorrow through **both service participants and the students they serve**.

2. Create a vibrant quality of place to attract and retain talent

Key Data Points

Quality of place is a key driver for economic success given the changing nature of work, the ways individuals and businesses are making location decisions, and the need to retain and attract young talent. Quality of place encompasses simple comforts like cost of living, commute times, affordable and appropriate housing options, perceptions of safety, and having basic needs met. These simple factors can bolster economic growth and competitiveness by strengthening an active, engaged, and healthy workforce. Quality of place also means supporting and building up appealing amenities that contribute to population retention and attraction both in terms of workforce and in terms of employers.

The metro Hartford region's low **cost of living is an asset**, especially in its strategic location between Boston and New York. The regional purchasing parity index, a cost of living measure, was 113 in Hartford MSA, vs. 124 in New Haven, 136 in New York, and 123 in Boston in 2016.

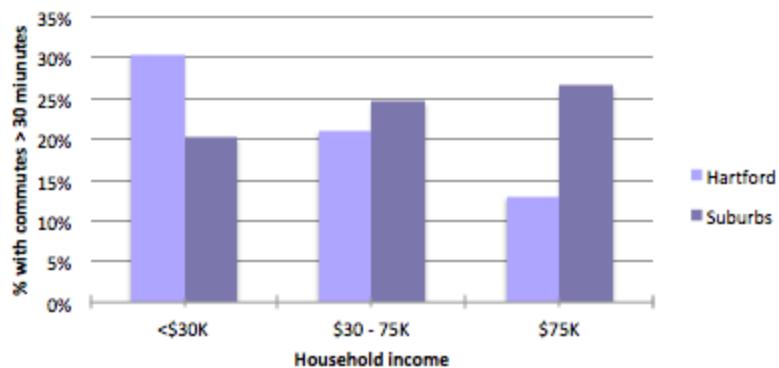
Similarly, the **housing affordability** index in 2017 reveals that a median-income family in the Hartford MSA can afford a house costing \$186,900, compared to in the state at large where a median-income family can afford a house costing \$173,000.

Travel time to work can make an enormous difference in the level of satisfaction that people have in their communities. In the metro **Hartford** region, **travel time to work is about average** both within the state and nationally. In Hartford County, the average travel time in 2016 was 23 minutes and in Tolland county it was 26 minutes. The average for both the state of CT and the US was 26 minutes.³

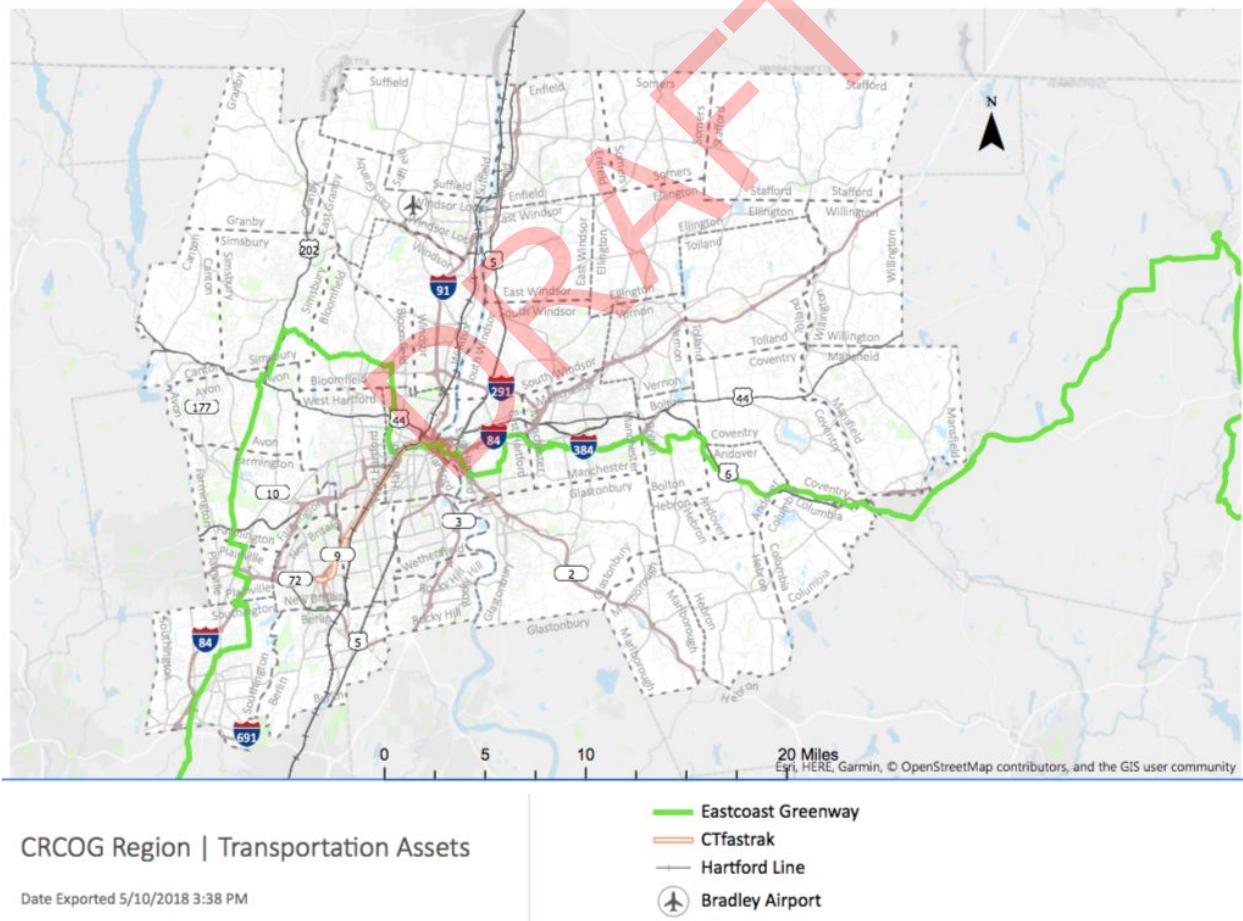
Breaking down travel time by household income within the region yields interesting results. While travel time increases with income level for the suburbs, travel time to work decreases as income level increases within Hartford. This indicates that higher-paying jobs are likely concentrated within the capital and that lower-paying jobs require more travel time for those living in the city. This point is troublesome when compared with income figures: **lower-income households living in the city must travel more for their jobs, and the cost of transportation will be more burdensome in these households.**

³ Census ACS 5-year Estimate

Travel Time to Work by Household Income



Alternative modes of transportation alleviate traffic congestion and can provide affordable, convenient access between key locations within the region. The map below shows the metro Hartford region's transportation assets, including the **CTfastrak**, the **Hartford Line**, **Bradley Airport**, and the **East Coast Greenway**.



Source: CRCOG

Bradley Airport served 6.4 million passengers in 2017,⁴ facilitating military, business, and recreational travel. On the ground, CTfastrak is a bus rapid transit option that runs from downtown Hartford to New Britain. CTfastrak opened in 2015 providing a vital service along its route. The Hartford Line will open in June 2018 and will provide rail service between New Haven, CT and Springfield, MA.,⁵ expanding transit options even further.

Lastly, the East Coast Greenway is a unique asset as the segment in the metro Hartford region is just one part of a 3,000 mile walking and hiking trail from Maine to Florida. Active transportation options add not only to affordable transportation options but also serve as a regional recreation amenity. The fact that the East Coast Greenway is such a long and nationally renowned trail also means that trail tourism can be expected along the route.

Attracting and retaining talent hinges on cultivating and maintaining regional amenities to make the metro Hartford region a great place to live. Competitive regions collaborate to leverage their strengths and appeal to a wide audience and cross-promote their quality of place assets. We know that **young talent in particular are looking for dense, walkable places to live with plenty of recreation and entertainment nearby**, and the metro Hartford region shares this preference.

Current Location and Preferences by Age, 2018

	Age				
	18 - 20	21 - 34	35 - 49	50 - 65	66+
Now live in a suburb where most people drive to most places	35%	41%	51%	51%	53%
Would like to someday live in a suburb where most people drive to most places	4%	8%	3%	9%	13%
Now live in a walkable area with shops and restaurants	47%	40%	25%	25%	32%
Would like to someday live in a walkable area with shops and restaurants	59%	44%	41%	45%	39%
Desire for amenities	12%	4%	16%	20%	7%

Source: *Housing Policy Brief, Legislative Commission on Aging, CRCOG and CCAPA*

While many respondents live in a suburb where most people drive to most place, very few respondents indicated that they would like to live in such a place in the future. On the contrary,

⁴ Calendar Year 2017 Passenger Numbers

⁵ Connecticut Department of Transportation News Release

more than 40% of respondents aged 21-34, 35-49, and 50-65 would like to live in walkable areas with shops and restaurants. Most noteworthy, the greatest interest in living in this type of area was among respondents aged 18-20.

Existing Plans

Hartford has ten strategies and assessments that have intersected the need to create a vibrant quality of place and to attract and retain talent. Individual strategies listed below are attributed to their document of origin below by number [e.g., 1]:

1. One Region, One Future
2. Capitol Region Plan of Conservation and Development
3. 2014 Capital City Parks Master Plan
4. 2012 iQuilt Plan
5. Innovation Places
6. Growing Economy, Shrinking Emissions
7. Progress Points, 2014
8. Progress Points, 2016
9. JumpStart: MetroHartford Alliance Research & Recommendations, 2014
10. Knowledge Corridor Fair Housing and Equity Assessment, 2014
11. Metro Hartford Comprehensive Transit Service Analysis, 2017
12. CTfastrak Expansion Study, 2016

Support Talent Retention & Attraction, as well as Workforce Participation, Through Integrating Housing and Transit Development

Recommendations from Existing Plans

- Encourage Municipalities to Change Zoning to Expand Housing Choice and Support Economic Growth. This strategy can be accomplished through zoning for mixed-use neighborhoods, inclusionary zoning, small-lot/ cluster single-family zoning, multifamily zoning, and policies that are supportive of special needs housing. [1]
- Adopt TOD Zoning Districts Around Commuter Rail and Transit Stations or Stops. TOD Districts should provide incentives for compact, mixed-use, mixed-income, walkable development in transit station or stop areas. Also, seek to establish Transit-Oriented Development Investment Fund(s) to promote and support TOD planning, site acquisition and clearance, and project development costs. [1]
- Increase the Range of Choice in Housing for People of All Incomes and All Ages, but Especially for Those Who Have the Least Choice in Achieving Their Locational Preference [2]
 - Consider the role that new planning and zoning approaches, such as village development, transit-oriented development, traditional neighborhood design,

- accessory dwelling units and main street revitalization, can play in expanding the types of housing opportunities available in a community.
- Support entities such as Capitol Region Development Authority (CRDA) that are working in part to provide new units of housing for middle and upper-income households as part of Hartford's redevelopment.
- Continue to Improve the Capitol Region Transportation System in Order to Better Link Housing, Jobs and Services, Thus Expanding Individuals' Housing Choices [2]
 - Work cooperatively with the Greater Hartford Transit District (for elderly and disabled service), Connecticut Transit/ConnDOT (for fixed route service), and Greater Hartford Rideshare to expand the transit network to support links between housing, jobs and services, and thus better serve our transit-dependent population.
 - Encourage housing near major transit facilities (i.e. CTfastrak bus rapid transit line, formerly known as the New Britain – Hartford Busway)
 - Encourage locational incentives to provide mortgages for housing near transit.
- Coordinate Land Use, Housing, and Transportation Planning [2]
 - Support livable communities and smart growth goals, to develop more transit supportive trip origins and destinations in the region.
 - Work with local officials to provide mixed use zoning in areas of existing or proposed transit stops and stations.
 - Work with economic development planners to match businesses to regional and local transit centers.
 - Educate local officials, economic developers, and the public about the benefits of transit-oriented development (TOD) and transit supportive development.
 - Encourage infill development in areas close to existing or proposed transit.
- Focusing development into transit corridors can accommodate population growth at densities that will support transit and lead to reductions in VMT and other benefits. [6]
- Many of our region's residents of all ages would like to live where they can walk to shops, restaurants and other amenities, compared to where they live today. [8]
- Use incentives to encourage developers to create affordable housing for families in areas of higher opportunity; Leverage major public and private investments to create market rate housing opportunities; Fund programs that aim to attract middle to upper income households to targeted areas; Enhance Access to Existing Areas of Opportunity - Create criteria for TOD housing development that does not displace current residents while at the same time promoting integration. [10]

The Capitol Region Speaks - From The Interviews:

- Housing options in the city of Hartford are not cheap and housing costs are impacting young professionals who have a desire to live in the area.
- Utilizing housing as a strategy to enable more people to afford to live in Hartford would help add more vibrancy to the community

- Even for summer interns in Hartford, we are having a hard time finding good housing for them.
- Create the ‘factory town of the future’ supporting micro manufacturing and additive manufacturing, etc. in a planned live-work neighborhood.
- To enhance housing in Hartford, create a program to have the insurance companies and other employers support home purchase and rehab.

Case Study (Transit): Twin Cities Transit Oriented Development



The Minneapolis/Saint Paul, MN, region (MSP) is led by an uncommonly strong regional government, the Metropolitan Council, which has prioritized investment in and around transit systems for many years—including development of light rail, bus rapid transit (BRT), and other public transit and multimodal infrastructure. In 2013, it formally adopted a Transit-Oriented Development (TOD) policy and created a corresponding TOD plan and office, which will continue encouraging development along transit corridors and advancing efforts to stimulate economic growth through public-private investment. The Council’s

TOD program includes grant funding for development projects, resource sharing and private sector engagement initiatives, a specific charge to focus on TOD projects that advance equity for residents, and an emphasis on public-private development. As a result, MSP enjoys a reputation as a highly walkable/bikeable and transit-friendly community (a significant draw for its growing population of young professionals) and the region continues to see widespread investment along its major transit corridors.

Case Study Key Takeaways:

- MSP invested significant public resources in a multimodal transit system that has proved an economic development driver by both making the city more **livable for residents** and by stimulating **private development** in transit-adjacent areas.
- By formally **adopting transit-oriented development as a policy**, the region will set itself on a path to continue its current pattern of growth along key transit corridors.

Case Study (Housing): Sacramento Inclusionary Zoning Policy



Like many other cities, Sacramento’s patterns of development throughout the 20th century were marred by racially discriminatory housing policies, such as redlining, and social fears that led to so-called “white flight.” Sacramento, however, was an early adopter of a practice known as Inclusionary Zoning, which aims to create future development that is more equitable. Facing a dearth of affordable housing and rapidly growing prices in many neighborhoods in the late twentieth century, the city implemented an ordinance in 2000 that required 15% of new housing in the city’s designated “growth areas” to be affordable.

Although the rule only had an overt focus on housing costs, its effects have gone well beyond just affordability. Today, the city has become one of the most diverse and integrated American cities at a neighborhood scale. Homeownership among disadvantaged

groups has risen, schools have become less segregated and student performance has improved, and the cultural fabric and economic foundation of the city has been strengthened.

Case Study Key Takeaways:

- Sacramento was able to create a policy addressing equitable development in response to a **shortage of affordable options** and with the support of **forward-thinking political leadership**.
- A simple policy had dramatic effect on both its stated objective, **affordability**, and wide-ranging connected issues related to **racial and economic segregation**. At its core, it simply required development in neighborhoods to include low-cost housing options.
- Sacramento was growing rapidly at the time the ordinance was adopted. If development is limited or stagnated, it must be catalyzed in order for the growth necessary to foster the development of the required inclusionary units.

~~Enhance Quality of Place Throughout the Region Through Developing Recreational, Historic, and Cultural Assets~~

Existing Plan Strategies

- Clean Up the Connecticut River and Its Tributaries: This includes addressing the water quality problems in a cooperative and coordinated manner. Develop a new bi-state Connecticut River strategy and coalition to seek additional federal and state funding for these purposes. Assist municipalities in developing stormwater utilities and stormwater regulations. [1]
- Revitalize Urban Areas through Remediating and Reusing Brownfields, Maximizing Access to Parks and Recreational Areas, and Maximizing Access to Local Food Sources. Provide regional coordination and grant programs for Brownfields site assessments, clean-up efforts, and on-going site monitoring. [1]
- Build A Linked Network of Bicycle and Pedestrian Routes and Amenities. Create a linked network of off-road and on-road bicycle and pedestrian paths and amenities, allowing access to urban centers, employment and other key destinations. Supplement this network with regionwide on-road bicycle lanes, sidewalks, safe routes to schools, bicycle sharing programs and bike infrastructure. Develop, adopt and implement complete streets plans and policies. [1]

The Capitol Region Speaks - From The Interviews:

- Focus on local business development in downtown corridors.
- Need to create the infrastructure and environment to attract people who have left. Needs to be comprehensive. Not just about transportation, education, or economic development. It requires all of these working cohesively.
- We have amazing parks; we need to leverage this great core asset.

- We need a bigger, community-wide focus with greater resources to do placemaking.
- Riverfront Recapture has done a great job, but need to double down in a big way. Need connectivity with East Hartford. There are already trails - why aren't they being used? Needs to be something whereby people feel like when they are at the river and a part of Hartford. Have a beautiful waterfront - just not enough - just one-off events. If Hartford, East Hartford, Windsor, and Glastonbury are at the table and all have riverfront - could be a game-changer.

Case Study: Denver Cultural Asset Building



While it would hardly be recognizable now, Denver's downtown in the 1980's was largely lifeless. Spurred by public and private investment in infrastructure and public amenities over the last three decades, today it is among the most vibrant in the country. Through coordinated efforts (led by the Denver Economic Development Corporation and the Chamber of Commerce) that brought together businesses, public resources, institutional interests, and local

residents, downtown Denver's public spaces and physical infrastructure were revitalized. These efforts paved the way for businesses to grow or locate in the downtown, and created demand for downtown housing. Some of the most significant development efforts included parks, transit hubs, and cultural facilities. These assets were also supported by an innovative regional financing mechanism called the Scientific and Cultural Facilities District, established through a public vote in 1988 following a campaign by the Chamber to raise support. For thirty years, the district has funded hundreds of regional cultural organizations through a small sales tax.

Today, in addition to providing public financial support for existing physical and cultural infrastructure, the Metro Denver Economic Development Corporation is committed to being the "first money in" on economic development projects. The regional and the city's public and private leaders continue to invest in the now-bustling downtown, as Denver—now a major destination for young, educated workers—continues to grow.

Case Study Key Takeaways:

- **Cultural infrastructure**, including both physical spaces and institutions, was central to Denver's early efforts to revitalize its downtown.
- **Public-private partnership** (coordinated by the EDC) provided critical funding
- The city also relied on **public support** through the innovative model of an **asset district** to finance the cultural institutions vital to a vibrant downtown.

Leverage Increased Downtown Residential by Expanding Retail/ Restaurants/ Amenities in Hartford

Recommendations from Existing Plans

- **Retail Space Assessment and Matching:** Opportunities exist to develop neighborhood properties that are already controlled by the Southside Institutions Neighborhood

Alliance (SINA) or Trinity College for local retail. Initial work has already begun, with a recently completed SINA economic development study and Trinity College in the process of meeting with development companies to explore the development a master plan for the neighborhood around the college. Once the inventory of available spaces is complete, marketing efforts will be made to match small business entrepreneurs with these sites, and linkages made to sources of capital, financing, and business development support necessary for the businesses to succeed. [5]

- Previously, an iConnect program through DCED subsidized retail space in Downtown Hartford. Two important lessons were learned. First, some landlords would prefer to declare tax losses rather than rent to retailers; tax rebates to landlords that incubate local retail starts-ups could address that. Second, experiential retail was a key for those retailers who were successful, i.e. they would host events at their location. Also, given the increase in residential and students downtown since that program in 2015, it would be expected to be more successful now.
- Pop-up Placemaking—Creation of a Food Park: The initial design of the Food Park will include space for food trucks and food trailers to park and provide fresh prepared food, space for vendor booths to provide groceries (such as local produce and value-added products), and an area for programming and events (e.g. live music, community outreach with local anchors, and pop-up farm-to-table restaurant events with local chefs). The Food Park will act as a stimulus to existing local businesses and act as a low-risk launchpad by providing new food businesses a low-cost market testing opportunity to validate their business proposition. [5]
- iQuilt Downtown Strategic Plan recommends the following strategies [4]
 - Build walkable, vibrant streets through green and complete streets development and creation of three east-west walking trails that connect and highlight key cultural destinations, and to link downtown to its adjacent neighborhoods
 - Link Downtown's cultural assets through a readily understandable network of streets, squares, and walkways. Extend downtown venues into the neighborhoods, and provide neighborhood-based institutions with a foothold and showcase downtown.
 - A visual language for public space is the systematic and recognizable presentation of place information and affirmation of place identity. A language that helps create attractive physical spaces can encourage community gathering and improve social vibrancy. A language that increases pedestrian activity in the public environment and makes it easier to find services can increase retail sales, workforce attraction and retention, and other beneficial economic activity.
 - A downtown-wide system of wayfinding signs and maps showing distance in minutes on foot; digital maps and web-based navigation applications; improved pedestrian and sign lighting; and historic/ cultural markers.
 - Cultural destinations should externalize their assets: create new windows and openings; upgrade exterior displays and banners; increase exterior programming and performances; explore the exterior relocation of treasures and facsimiles;

and create greater architectural transparency at the edges of downtown's public Spaces.

- The iQuilt plan includes jogging trails, exercise stations, and jogging maps. The plan calls for the introduction of bike lanes and the integration of downtown's biking routes with the city-wide, regional, and even national bike network, including the East Coast Greenway.
- Innovative transit strategies for downtown: improve bus stop signage and shelters; upgrade transit amenities, including wayfinding signs, maps and schedules; integrate the visual language of stops and vehicles.
- The centerpiece of the iQuilt is a chain of green spaces called the GreenWalk. As a public space sequence running from west to east, the GreenWalk would provide a strong organizing armature for walking in downtown. It would create a powerful link between downtown's two great landscapes: Bushnell Park and the Connecticut River waterfront. And it would help connect downtown's cultural assets, which lie directly along the GreenWalk or within a five-minute walk.

"Strong urban cores, and in particular a vibrant capital city, are essential to Connecticut's ability to thrive, which is why we decided to locate this important new initiative in Hartford," said Stanley CEO and President Jim Loree of his decision to locate Manufactory 4.0 in Downtown Hartford.

~~REDACTED~~ The Capitol Region Speaks - From the Interviews:

- Colleagues in HR have told him that candidates who would otherwise be thrilled to work there are easily lured away because of the environment. Hartford needs to demonstrate its livability and ability to be a center that people want to gravitate to and cultivate an image of a safe, fun place to be. Need neighborhood centers too. Need to start with one specific location - even just a couple of blocks where you create a cool, fun place to be.
- Would be able to attract street level retail if we had more people downtown. University of Hartford or Trinity should make next big play downtown. Create a serious effort tying together workforce, involvement of current and prospective corporations, and a larger presence of universities. Create a public-private partnership to make it irresistible for one of our academic institutions to join UConn in a big way - that could be really exciting. Partner with corporations and add a residential component.
- Would be really special to have young people wanting to live in Downtown Hartford - need something there that would attract young people to live there and be able to walk to shops and amenities.
- CRDA is doing awesome work. But don't see as much commercial development - both office and retail. The Downtown North proposal around ballpark is promising. There is some connectivity that needs to be addressed, i.e. walkability within city and perceived distance.

- In other cities like ours things happen that don't happen here - e.g. ferris wheel on river front, big apple circus, America Ninja Warrior qualifying - things that bring people downtown more regularly.
- A seachange is needed. Lots of positives - new housing, universities, Front Street, ballpark. But there has to be more things that encourage people to be together. Shops and stores and restaurants - that's what's missing.
- The downtown does need to be enhanced, but have to think and act regionally to make that happen. Absolutely a requirement for serious progress to be made.
- Create grocery and shopping opportunities in Hartford - places to shop so you don't have to go to suburbs for food and clothing. Have done good job with CTfastrack. Want people to feel safe. Need capital for small and mid-size businesses.
- Hartford is dead after work - there's nothing for young people to do, disconnected from the river - our young children don't want to live in Hartford - no grocery stores in the city of Hartford. Need it to be a destination.

Case Study: Detroit, MI



Detroit has seen a greater economic decline than perhaps any other American city. Once a major hub of industry, commerce, fashion, and culture, Detroit is now largely identified with vacant land and empty spaces and buildings. But many of the hundreds of thousands of Detroit residents who remain in the city are seeking ways to breathe new life into its once-bustling physical infrastructure. In 2012, a program called REVOLVE Detroit was created by the public-private Detroit Economic Growth Corporation to focus specifically on the promoting the re-use of vacant commercial space. The program provided funding and support for art events/exhibits, beautification, and pop-up retail opportunities in vacant storefronts, and focused efforts on specific neighborhoods in an attempt to catalyze. Other similar initiatives, such as Hatch Detroit (founded in 2011), also provide technical support and grant opportunities for small commercial enterprises attempting to establish themselves. Both REVOLVE and Hatch were designed to work closely with local community members and organizations.

Case Study Key Takeaways:

- Initiatives like REVOLVE and Hatch supply a variety of support to both building owners and prospective tenants, including **grants to businesses** and **physical improvements**.
- By focusing in specific neighborhoods, working with the local community, and **creating a vibrant atmosphere**—through beautification, public art, events, and so forth—these programs attempt to **catalyze private investment** in commercial enterprises.

Extend Rail Service to Connect the Knowledge Corridor

Recommendations from Existing Plans

The Vision for the New England High-speed and Intercity Rail Network collectively developed by the Departments of Transportation in the six New England states provides a vision for rail in the region and a commitment to work together. The rail system as envisioned will 'provide a foundation for economic competitiveness and promote livable communities through a network of High-Speed and Intercity Passenger rail routes connecting every major city in New England with smaller cities and rural areas and internationally to Montreal.'

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The Capitol Region Speaks - From the Interviews

- Rail connection north in the Knowledge Corridor would also be game changer - extension of service north of Springfield targeted for 3 - 4 years for now - that's a Mass project - up to Holyoke and other university and college towns. Connection to bradley, hartford, new haven line, fastrack, etc. + students who are nextgen workforce - corridor that is primed for that.
- Complete the Hartford Line - need a second track from Windsor to State border. Rail connection between Boston and New York.

"We are connecting New Haven and Hartford, but connecting those two Connecticut cities to Manhattan and to Boston, for bioscience, is the No. 1 thing." - Aimee Monroy Smith, JAX Director of Government Relationships

Enhance Existing Bus Networks and Extend CTfastrak to Storrs

Recommendations from Existing Plans

- A regional bus loop, expanded bus service, improvements to highway infrastructure and new train stations all work toward improving access to amenities, housing and jobs in order to spur growth and generate vibrant communities. [8]
- CTfastrak East could provide connections to: East Hartford, Manchester, South Windsor, Vernon, Tolland, Bolton, Coventry, and Mansfield (including UConn Storrs) [12]
- Recommendations from the 2017 Metro Hartford Transit Study [11]

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Implementation Timeline			
Recommendation	Short-Term (1-2 years)	Mid-Term (3-5 years)	Long-Term (6+ years)
Route Adjustments	<ul style="list-style-type: none"> Review recent ridership data to verify consistency with findings Assess operational feasibility of new service concepts (e.g. Route 99 Regional Loop, interlined routes, etc.) Identify recommendations that require additional Title VI and/or ADA assessment Implement changes that do not require additional assessment 	<ul style="list-style-type: none"> Perform Title VI and/or ADA assessments on necessary routes Continue implementing changes as assessments allow Assess routes that may benefit from Origin-Destination analysis (e.g. Route 45, Route 55) 	<ul style="list-style-type: none"> Perform routine evaluations to ensure that service continues to meet demand
Transit Priority Corridors	<ul style="list-style-type: none"> Review recent ridership data to verify correct identification of key corridors Coordinate with on-going planning initiatives, such as the CTfastrak Expansion Study and the Regional Bus Shelter Program, to ensure compatibility with recommended transit priority corridors 	<ul style="list-style-type: none"> Implement a Transit Signal Priority pilot program Consolidate bus stops to offer faster service Improve rider amenities and shelters at key bus stops 	<ul style="list-style-type: none"> Consolidate routes along identified corridors to offer more frequent service Construct capital improvements (bus lanes, transit signal priority, shelters, etc.) to support enhanced service
First Mile/Last Mile Connections	<ul style="list-style-type: none"> Consider alternative service models for lower-density areas and identify potential operational or legislative challenges to implementing such models Conduct a pilot study to review ADA accessibility of TNC vehicles and overcoming obstacles to riders without technology / smartphones 	<ul style="list-style-type: none"> Implement alternative service options for lower-density areas Support legislation to regulate TNCs in Connecticut 	<ul style="list-style-type: none"> Monitor ridership to determine whether lower-density can support fixed-route service
Bradley Flyer Improvements	<ul style="list-style-type: none"> Combine Route 30N service with a modified Route 34 and renumber Route 30X to Route 30 in order to further distinguish local trips from limited-stop service Increase marketing of Route 30 as the Bradley Flyer Improve wayfinding and pylon signs at the airport and major bus stops Explore options for luggage-friendly vehicles 	<ul style="list-style-type: none"> Continue developing branding and visibility of the Bradley Flyer Evaluate the opportunity to extend the Bradley Flyer down the CTfastrak guideway to New Britain Conduct best practice review and mitigation measures identification related to increased parking demand (e.g. overnight restrictions, capital improvements to park-and-ride lots) 	<ul style="list-style-type: none"> Consider extension of Bradley Flyer to New Britain via CTfastrak guideway and develop a clearly define parking framework Procure luggage-friendly vehicles
Buckland Hills Area Improvements	<ul style="list-style-type: none"> Perform market analysis of park-and-ride area to determine its potential for TOD Identify funding for improvements at park-and-ride lot (e.g. passenger amenities, crosswalks, etc.) 	<ul style="list-style-type: none"> Standardize routing to support bidirectional travel through the area Develop park-and-ride lot as a transit hub Create plans for TOD around new transit hub 	<ul style="list-style-type: none"> Support and encourage growth in park-and-ride area Consider capital improvements to create direct bus service to new TOD

The Capitol Region Speaks - From The Interviews:

- Expand CTfastrak line to other communities in the region.
- The I-84 project is critical to creating more effective routes over the river for fastrak to expand east.
- Extension of fastrak to UConn could happen in a couple of years with political and funding support. We started bus service there this year and it's going gangbusters when school is in session.

- Buses are a huge savings for people and cheaper than rail. Let's build on fastrak and bring service to Middletown, Glastonbury, etc. and increase people's ability to work in Hartford.
- Reconfiguring the existing urban bus network would be very important, but the only way to make a huge difference is to spend more.
- Connectivity needs to be addressed - walkability within city, perceived distance, mass transit - about to undergo I-84 reimagining that will be super disruptive - need transportation solutions that match where we are going.
- We need better public transportation access to the airport. There's no reason we should have to rent a car to get downtown just to put their car in a garage.

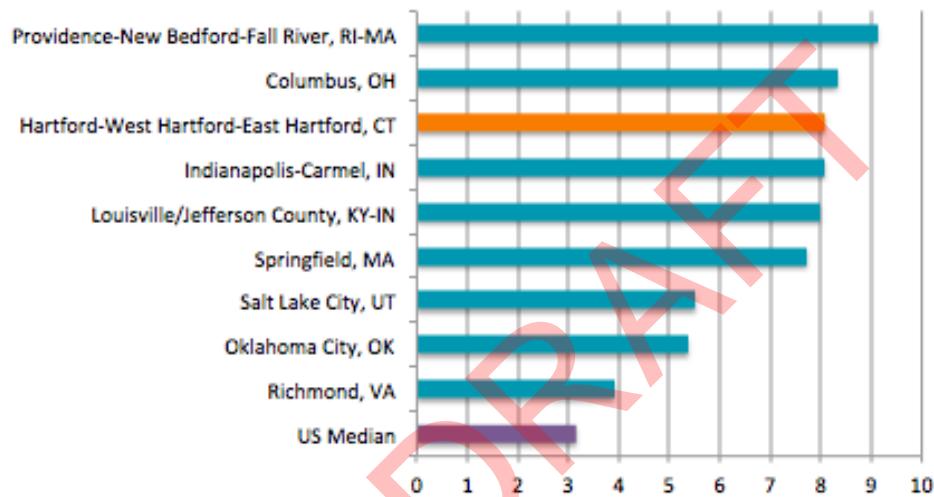
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3. Enhance regional collaboration

Key Data Points

The metro Hartford region faces unique challenges due to the **fragmented nature of its governments, organizations, and initiatives**. The University of Pittsburgh's Center for Metropolitan Studies measures and analyzes regional fragmentation as an index called the Metropolitan Power Diffusion Index (MPDI). This index accounts for the number of government units in a region and the market share of expenditures for those government units. The result is a measure of how dispersed government power and resources are in the region.

Metropolitan Power Diffusion Index, 2007



Source: University of Pittsburgh Center for Metropolitan Studies

The MPDI for the Hartford MSA was 8.08 in 2007, compared to the US median of 3.15. The wide gap between the two indicates that the region has much less concentrated governance and therefore likely faces challenges in advancing initiatives that benefit the region.

The MPDI was also compared to nine benchmark regions, both peers and aspirational regions relative to growth. Of these, the Hartford MSA has the third highest index, following only Providence, RI and Columbus, OH.

The level of power diffusion is a challenge for the metro Hartford region because of the economic strengths of the region as shown in the SWOT analysis, and also because the two counties rely on one another for jobs and for workers.

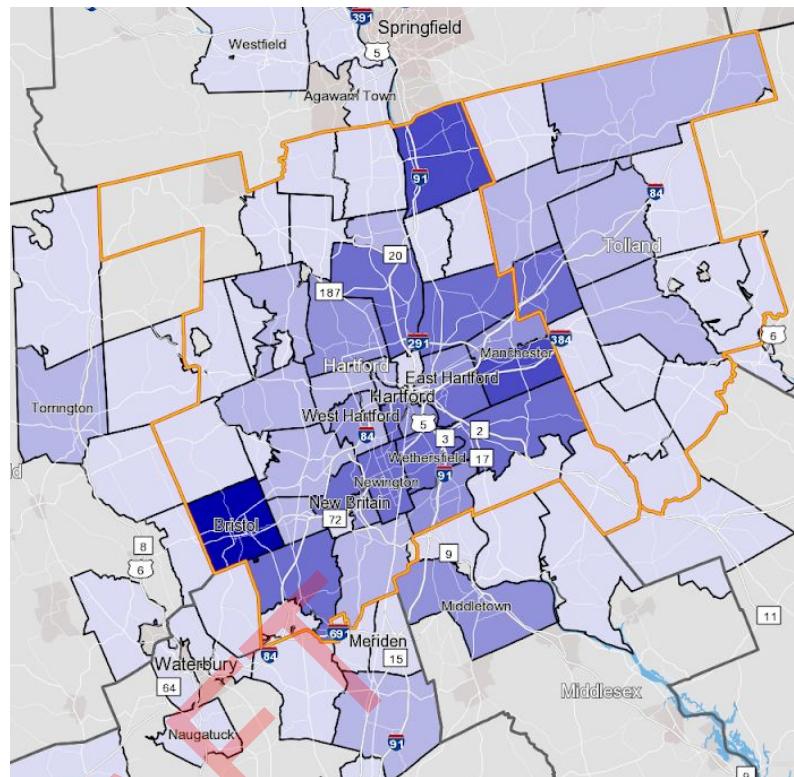
A majority of employed residents in Hartford and Tolland Counties work within the region. In 2015, 362,077 residents both lived and worked in the region, while 166,623 commuted from outside and 362,077 left the region for work.

Inflow-Outflow Job Counts, 2015



Where Workers Are

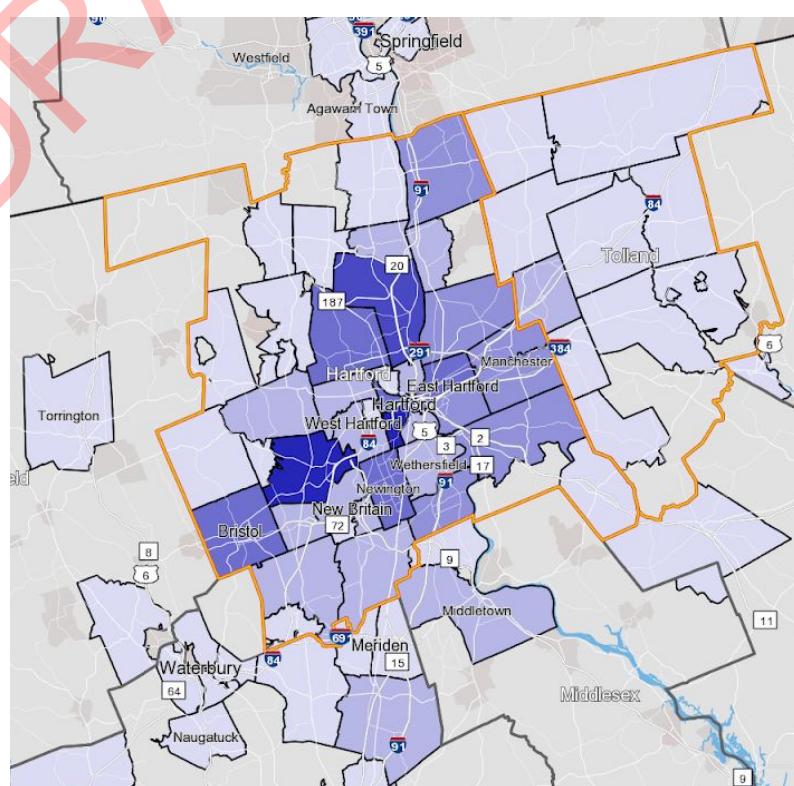
The map shown in the upper right illustrates where workers who hold jobs in the metro Hartford Region live. Although the greatest concentrations of workers lie in the Southwest, East, and Northeast of Hartford County, a fair amount of workers in the region reside in the less dense Tolland County.



Where Jobs Are

The map in the lower right shows the locations of jobs held by workers who live in the metro Hartford region. Most jobs are clustered around the center of Hartford County, although some are held in Tolland County and beyond. Some additional clustering exists along the corridor from New Britain to Springfield.

The dynamic between where jobs are held and where workers live illustrates that **Tolland County depends on Hartford County for its jobs, while Hartford County depends on Tolland County for its workforce.**



Source: *Census OnTheMap*

Existing Plans

Hartford has twelve strategies and assessments that have explored elements of the enhancement of regional and internal connectedness and cohesion and their meaning to the region. Individual strategies of note and their origin are referenced below by number (e.g. [1]) :

1. Progress Points, 2016
2. Advanced to Advantageous: The case for New England's Manufacturing Revolution, 2015
3. Knowledge Corridor Talent & Workforce Strategy, 2014
4. Tomorrow's Framework: Connecticut Technical High School System Strategic Action Plan, 2014-2017
5. Connecticut Workforce Assessment, Yale School of Management, 2017
6. JumpStart: MetroHartford Alliance Research & Recommendations, 2014
7. Commission on Fiscal Stability and Economic Growth, 2018
8. Connecticut Economic Competitiveness Diagnostic Summary Results, 2016
9. Boosting Metro Hartford's Economic Performance in the New Millennium, 2008
10. One Region, One Future
11. Guidelines for the Development of a Strategic Plan for Accessibility to and Adoption of Broadband Services in Connecticut, 2011
12. Broadband in Connecticut - Initiatives and Updates, 2014
13. Capitol Regional Plan of Conservation and Development, 2014

Create a Regional Brand and Platforms for Promotion

Existing Plan Strategies

- Increase the Recognition of a Regional Identity: In places such as the “Silicon Valley” or the “Research Triangle,” many diverse municipalities have been united by a regional identity. Not only does such an identity provide instant recognition of the region’s area of expertise or specialization to outsiders, it can also serve as a unifying force for residents and businesses within the region. (Regional Plan of Conservation and Development)
- Support efforts to improve regional self-image, a sense of regional community, and understanding of the importance of interregional and interstate cooperation; Support the devotion of more resources to branding, defining, and marketing the region in the national and global marketplace. [10]

The Capitol Region Speaks - From The Interviews:

- Create a branding/messaging campaign to attract investment and industry
 - Market the region as a place for growth- growing your family, growing your business, etc.
 - The region needs a shared “voice” and support in getting the message out to businesses, individuals, and other communities.

- New England Knowledge Corridor - try to wrap this in - are we packaging this enough/ correctly
- Branding around industry-specific opportunities.
 - Branding around manufacturing opportunities - medical instruments to missiles.
 - Bioscience Branding/ Promotion - At JAX, Yale, and Yukon we have fabulous researchers in the field of the microbiome. All of them are dependent on finding funding to stay in business. One source of that funding can be private sector looking to exploit the technology being developed. Publicize the presence of these researchers to attract entrepreneurs. New field, but exploding nationally and internationally. Example of an emerging technology that a nimble organization would try to exploit.
 - Cultivate and perpetuate a culture of seeing ourselves as an innovating, technology community - based on our heritage and the current opportunities in advanced manufacturing, biotech, insurtech, etc. Have to rebrand ourselves to ourselves and the rest of the world.
- Create a brand ambassador effort to promote the good - old and new things going on.
- Need a digital “good news” platform, catalogue of events, resources, full package the region has to offer.
 - So many good things - take credit for what we are doing well - market those - share the good news - company growth, cultural assets, etc.
 - Will have to over-communicate and work hard to overcome bad news.
 - Also target youth - negative narrative makes them want to get out.

Case Study: Akron Regional Ambassadorship



The city of Akron, OH, and its surrounding region has struggled with a challenge plaguing many communities across the country: the exodus of young people and workforce. Torchbearers, a local organization for young professionals, was founded 15 years ago—initially in an attempt to connect young talent with local non-profits. The group has now taken on the mission of attracting and retaining young professionals broadly. Leadership Akron, the city's community and business leadership organization, is now working with Torchbearers Akron on talent attraction initiatives. Partnering with local businesses, Leadership Akron now offers a program called Destination Akron (with support from a small grant), through which it engages new and potential hires considering a move to the region in a personal tour and chance to experience (“sell”) the city. The challenge of generational migration cannot be solved overnight, but programs like this are using the existing population of young professionals in cities like Akron to give those places a strategic advantage in the struggle for young talent.

Case Study Key Takeaways:

- Torchbearers was established to provide **opportunities and support for the young talent** already in the city of Akron. From that initial purpose, it has grown into an expanded, external-facing role.
- By partnering together, Leadership Akron, local businesses, and Torchbearers are able to use the city's current population of young people as **ambassadors to potential workers**.

Create a Coordinated, Regional Approach to Business Attraction

Existing Plan Strategies

- The MetroHartford Alliance continues to promote the region's assets to encourage business development.
- The bi-state region including the cities of New Haven, Hartford and Springfield should work closely together to compete successfully with larger regions in the Northeast and nationally.
- Support increased international business development efforts and efforts to raise the region's profile among corporate site selection specialists and foreign companies.
- Policy Recommendations 1. Work with state and local officials to decrease reliance on the property tax for funding local public services, particularly public education. 2. Encourage higher-density development in core areas of the region and along corridors with infrastructure adequate to support such development. 3. Encourage intermunicipal and regional review and coordination of major development proposals. 4. Increase municipal, regional, and state cooperation on major infrastructure and transit investment, as well as access to transportation and telecommunications infrastructure. 5. Support policies that provide financial support and incentives for priority projects in the Capitol Region. 6. Consider and coordinate community development, environmental protection, natural disaster mitigation, and transportation concerns in making economic development decisions. 7. Encourage tax-base sharing among municipalities so as to reduce competition for grand list growth between neighboring towns. 8. Support local efforts to identify, remediate, and redevelop brownfield sites. 9. Assist efforts to provide quality, cost-effective public services through intermunicipal cooperation. 10. Provide leadership in identifying key areas of regional economic significance and growth potential. 11. Work to develop intermunicipal cooperation in planning for the development of key economic development areas, as shown on Economic Development Areas of Regional Significance Map found at the back of this Plan. [13]

The Capitol Region Speaks - From The Interviews:

- Create a regional approach/regional strategies toward a shared vision that require people to work collaboratively and outside of their silos.
- Bring together real estate developers and brokers for ongoing collaboration and advisory services. This group will work across communities to reduce the level of competition related to business attraction.
- Identify what connects the various markets in our region so that they can begin to position themselves as one broader, more attractive market - build the partnerships to support that.

- Do better about staying with companies after they are recruited to understand workforce and training needs - there is not an ongoing BRE role being played.
- Has to be some understanding that we can't just do all of this at once everywhere, start where it's most impactful in a focused, strategic way.
- Could collaborate better by forming some common goals - focusing on particular industry sectors would make sense. Agreeing on things like incentive packages and locations that were attractive. Getting all the economic development officials from the region to follow the same playbook. Within 20 miles of the capitol building, there are 4-5 towns with aggressive economic development programs that probably never talk to Hartford.
- Bioscience Business Attraction - NIH provides startup grants to researchers who want to take their discoveries to market. They are highly competitive and selection is done through an intensive peer review process. 25 are awarded but #26 is still a hell of an idea. Go after those companies! Someone else has already vetted them.
- Hartford Amazon proposal - first play where we made a regional case for ourselves to recruit a business - symbolically was great. Can't attract big corporate employers without discussing regional assets and collaborating regionally.

Case Study: Philadelphia, PA Regional Economic Development Collaboration



Nothing tests the bounds of regional collaboration quite like a huge (and very public) project competition and a short response timeframe. Philadelphia, PA was tested in 2017, as were no fewer than 238 other metropolitan areas, by Amazon's announcement of its search for a location for its HQ2, a \$5 Billion investment with a potential 50,000 new jobs. The proposal process required a comprehensive response due very quickly, just to achieve a spot in the suddenly coveted "Final 20" communities under consideration. Recognizing the regional impact, and regional benefit, of such a large scale project required marshalling the cooperation and efforts of a large number of both city and regional groups, given that Philadelphia draws its workforce from five Pennsylvania counties (Bucks, Chester, Delaware, Montgomery, and Philadelphia), New Jersey (Burlington, Camden, Gloucester) and Delaware (Newcastle). Coordinated by the City's Commerce Department, the Philadelphia Industrial Development Corporation, and other partners, the City and Region were able to assemble a cohesive package that highlighted the City, Region, its sites, its workforce, its universities, its culture, quality of life, housing and history and secure a slot in the "Final 20". Even if Philadelphia is unsuccessful, the exercise in regional collaboration and coordination in responding to an economic opportunity is a valuable exercise that leverages other efforts that have thrust the region into the national and international spotlight such as the visit of the Pope and the 2016 Democratic National Convention.

Create a Shared Annual Funding and Policy Agenda among Regional Leaders to Support Business Growth and Economic Development

The Capitol Region Speaks - From The Interviews:

- We have enough resources, have capital, have universities, have fortune 500 companies - need greater alignment and coordination - not tackling challenges together. There are fits and starts in leadership - need politicians, corporations, and foundations together on the same page.
- At some point the regional strategy has to be one of supporting public subsidy for public transportation - it will never make money. It's fundamental to have a regional, cohesive voice from economic development and private sector to support funding. Right now an investment we call fastrack is doomed to budget veto unless there is something more compelling. Need to recast why we're doing this in economic terms.
- The state must create an Air Service Development Fund to encourage air service growth.* Growth and expansion of Bradley would be a game-changer. There's not enough international flights.
- Need an advocate for business - there's an inherent lack of trust, which is a huge problem.
- If we get private leaders to take leadership roles, we need to champion them like we never have before.
- People need to start looking at businesses as generating job growth vs. taxing them. Business is just seen as revenue source vs. an economic generator.
- Can do all you want to recruit businesses and tell them all the positive things, but what we're hearing is companies will not even consider it because of the politics, lack of political support for economic development.
- It's not that we need new platforms - rather the platforms we have need to be united.
- Would be nice if some others would promote the benefits of growing business broadly, on behalf all of the businesses.

*Bradley International Airport recently released a new master plan outlining \$1.4 billion in projects over the next two decades. There were 6.4 million Bradley passengers last year, still below the 2000 and 2005 peaks of roughly 7.4 million and 7.2 million passengers, respectively. The master plan contemplates roughly 9.4 million passengers by 2037, an average annual growth rate of 1.82 percent.

Case Study: Columbus, OH Leverages External Resources through Collaboration



The Columbus Partnership is an organization of business and institutional leaders, formed in 2002, to be “thought leaders—strategically considering how to position the community for the future.” The Partnership and the City of Columbus recently worked together to create the Smart Columbus initiative.

Smart City technology in Columbus helps to connect employees to work, allows public services to function more efficiently, and helps the city mitigate its environmental impact. In order to invest in smart infrastructure, the Partnership brought together public and private resources, totaling over \$90 million in funds raised. They also sought to build widespread support for the effort locally. These investments, along with the community engagement, led the city to win the inaugural Smart Cities Challenge—beating out 77 other contenders. As winners, they will receive \$40 million in federal investment and an additional \$10 million from Vulcan, Inc. (Microsoft co-founder Paul Allen's company). In addition, as part of the 33 Smart Mobility Corridor, the region has also seen significant investment from the US Department of Transportation. By bringing together diverse interests through coordinated efforts, Columbus provides an excellent example of how a region can leverage external investment.

Case Study Key Takeaways:

- The city **bet big on large investments** in tech infrastructure, and found that those investments were a *smart* move economically, **raising tens of millions in direct outside investment** through the Smart Cities Challenge.
- **Public engagement and private sector investment** were key reasons why Columbus was successful in the challenge.

Ensure that Entrepreneurship and Small Business Resources are Connected Across the Region

Existing Plan Strategies

- Innovation hubs like reSET, Make Hartford and Axis 901, and entrepreneur support centers like Innovation Destination Hartford, offer business advisory services and other supports to help small businesses thrive. [1]
- 1) Hartford needs a champion for entrepreneurship to facilitate collaboration among resource providers, advocate for improvements to the entrepreneurial ecosystem and support grassroots efforts to build community; 2) Leadership is a critical issue in Hartford; there is no champion for entrepreneurship; 3) Existing efforts of the entrepreneurial resource providers are fragmented and entrepreneurs find them difficult to navigate; 4) Provide a central repository of information on all resources in the ecosystem. [6]
- 1) Promote regional wins related to the entrepreneurial ecosystem; share local stories and successes; 2) Promote a centralized resource to assist entrepreneurs in navigating the ecosystem; 3) Market [funding opportunities] and generate interest and applications; 4) Encourage diverse participation in and support of entrepreneurship; 5) Attract and retain talent with emphasis on young professionals and other disengaged talent sources. [9]

The Capitol Region Speaks - From The Interviews:

- The region needs to develop entrepreneurial systems that support the development of entrepreneurs and allows them to develop the skills and experiences necessary to be successful in their pursuits.
- The region has experienced fragmented entrepreneurial community, which has been address with the creation of new organizations. The region needs to continue growing a system that supports entrepreneurs and their pursuits.
- Want to connect lots of things that are popping up organically to one another and creating framework for people to work together - working with a number of insurance companies and what we hear from them is that they need better coordination - what events are happening, how can we bring events here, letting startups know how to connect with resources, etc. - info that both they and the start-ups could use - could be industry agnostic, but starting with Insurtech to prototype.
- Innovation Places got kick-started by a state funding opportunity; because of highly fragmented nature of entrepreneurial community there was no apparent organization to own it - they are a convening group and disburse funding - work closely with CTNext to roll out processes to enable the work to happen and for it to be owned and led by community organizations.

Case Study: Nashville, TN Entrepreneurial Ecosystem Development



As part of a wider economic development effort called Partnership 2020 (previously, Partnership 2010 and Partnership 2000), Nashville leaders have identified entrepreneurship as a critical opportunity for the region's economy. In 2007, a large (75+ member) task force of local leaders was formed by the Chamber of Commerce to strengthen the area's entrepreneurial resources. In 2010, those efforts led to the creation of a regional entrepreneur center (funded by the EDA), which has since "graduated" over 150 businesses from its program offerings. The local entrepreneur support network pairs entrepreneurs with advisors and connects start-ups with other resources, such as the Jumpstart Foundry, a successful business accelerator. Local and regional efforts have been reinforced by the state, through programs like TNInvestco, a \$200 million dollar investment, as well as a robust network of private capital. Today, Nashville is recognized as a hub of entrepreneurship and start-up activity.

Case Study Key Takeaways:

- Nashville sought to develop its **entrepreneurial ecosystem**—beyond simply direct support for entrepreneurial enterprises—and it based its investment priorities on robust input from its **leadership task force**.
- Local efforts have been bolstered by outside investment from various sources. In Nashville the included both federal and state dollars (as well as private capital), but the broader point worth noting is that public money is often well-poised to **leverage outside funding** related to entrepreneurship.