

Connecticut

strategic economic framework

Defining
the issues,
relationships
and resources
necessary to compete
in a global economy

A report of the **Connecticut Regional Institute for the 21st Century**

a strategic framework

A New Global Age

A new global age began with the sudden and dramatic collapse of the Soviet Union. The world is now in a period of transition of historic proportions as global integration leads to unprecedented changes in the global economy and pattern of connectivity.

The Importance of Metropolitan Regions.

The massive restructuring of the world's economic geography has resulted in the formation of new trading blocs and super regions and has caused the importance of metropolitan regions to increase dramatically. Today, metropolitan regions function as the foundation units of economic activity and hubs in the global transportation and communications network. Linked together in the continuous global network, metro regions compete on a global basis.

Unfortunately, metro regions are inherently fragmented, composed of a multitude of governmental jurisdictions, business and corporate entities and institutional bodies, each of which traditionally acts and operates as a separate and independent entity. The new competitive global context places new demands on the public, private and institutional sectors to be strategically involved in the new competition.

Opportunities and Competitive Pressures Are Greater.

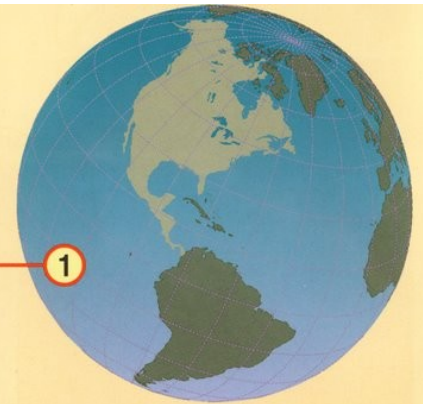
In this new global age the vastly increased population and geographic size of an integrated global economy has proportionately increased economic opportunities and competitive pressures. During similar periods of major change in the global network throughout history, businesses, governments and institutions that recognized change and prepared for it prospered. Those that did not missed significant opportunities and were left behind.

The need to act is now. Global integration, which began in 1991, is now entering its ninth year. Already enormous changes have taken place in economic structure, geography and patterns of connections that will define the basic framework for the global economy in the twenty-first century. For states and metro regions to successfully respond to the challenges and take advantage of the opportunities in the new global economic arena, a new strategic framework is needed to define the basic structure, relationships and linkages that drive the pattern and location of economic activities. A strategic framework can provide the context for policy, planning and investments to guide statewide development in the emerging global age. Successful competition will require new relationships between and among the private, public and institutional sectors to maximize the value of investments, human resources and the quality of life in each community.

Five Scales of the Framework

The Globe

The processes of **global integration have resulted in a single continuous pattern of economic activity** involving all political units and economic entities. Understanding and reacting to global change is the foundation for strategic thinking.



North America

The restructuring of the global economy has produced a **series of trading blocs that share economic interests**. The United States is now the primary component of the North American continental trading bloc. The creation of a North American trading bloc has set in motion a restructuring of the continental economic patterns affecting all parts and businesses in North America.



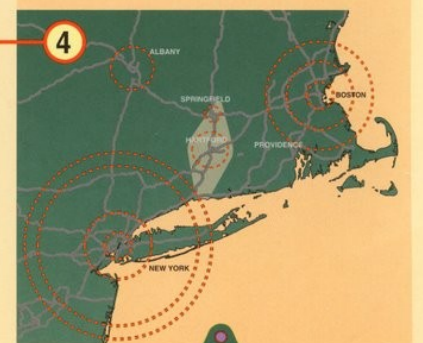
Northeast

Each trading bloc can be sub-divided into a series of super regions. These super regions are defined by sets of corridors, which form the functional linkages. **An expanded and redefined Northeast has emerged as an important super region** within the continental North American trading bloc.



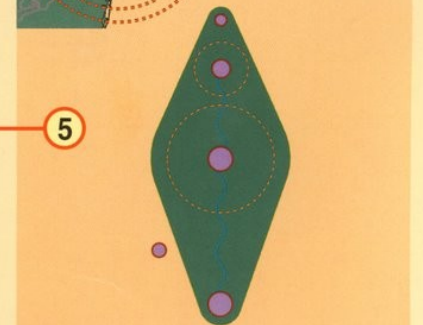
New Atlantic Triangle

Connecticut is set in the center of a unique triangular cluster of five metro regions, which can be referred to as The "New Atlantic Triangle". The New York, Boston and Albany metro regions form the triangle. This triangle is bisected by the Hartford/Springfield metro economic region and bounded on the southeast coast by another smaller metro economic region. This configuration is a sub-structure of the Northeast super region.



Metro Region

Metro regions are urban formations with a dense and multi-jurisdictional metropolitan core surrounded by a low density and primarily rural regional market area. **Metro regions are the basic or "foundation" economic units** of the global economy and are the hubs of the global transportation and communications network.



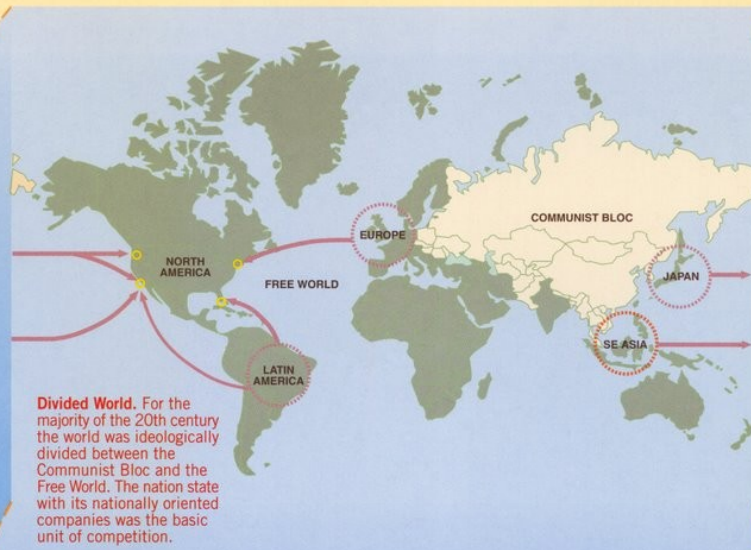
global change

We are now in a period of transition as the forces of technology and global integration shape the outlines of a new global age. Technology is driving the "New Economy" while global integration changes the pattern of global linkage and the volume of world trade.

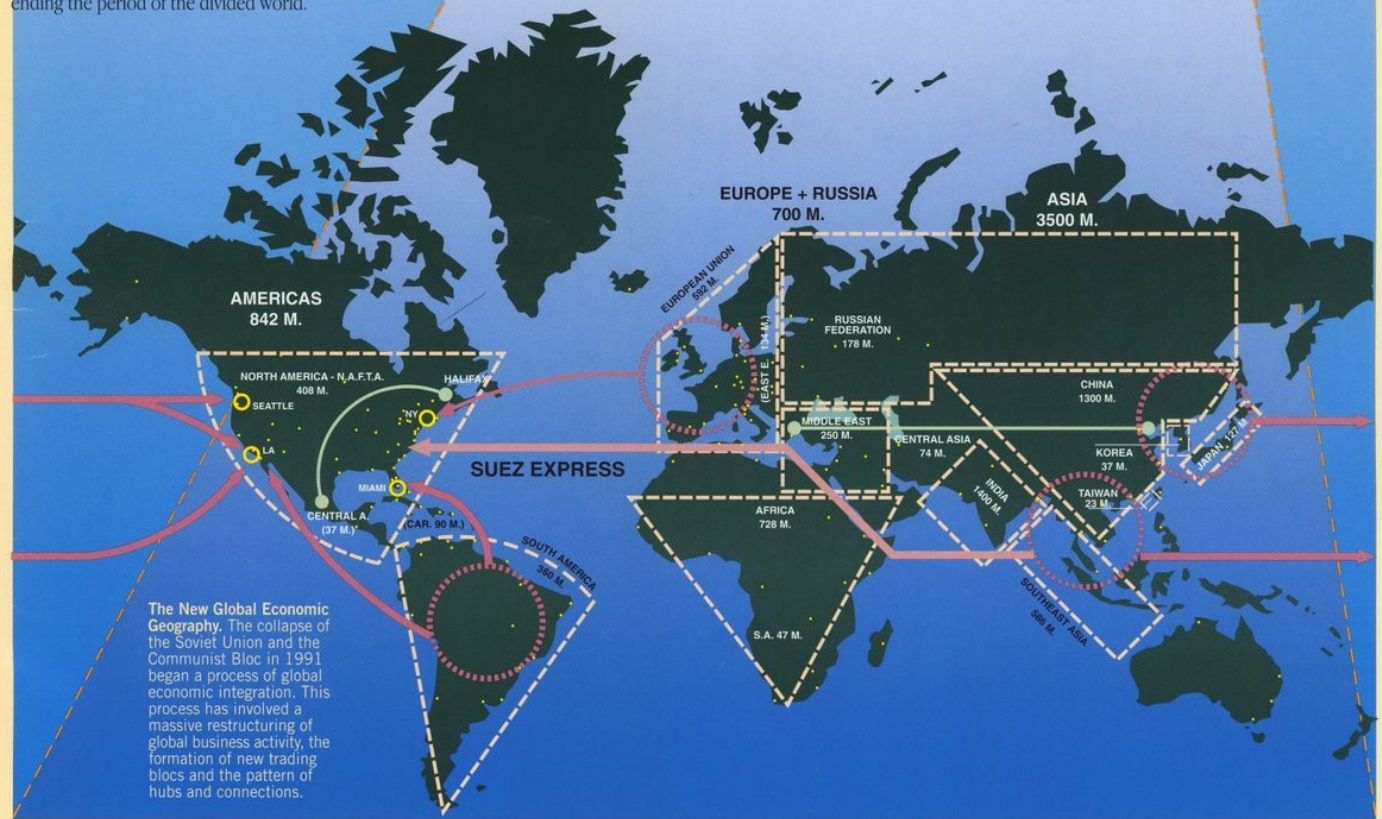
1917 - 1991

Vast and sweeping global changes were set in motion with the fall of the "Iron Curtain."

In the period between 1917 and 1991 the world was politically and economically divided between two ideological blocs. In that timeframe, a separate network of transportation and communications had evolved within each bloc. The "Iron Curtain" referred to the barrier that effectively prevented any significant connection of economic activities between the two networks. Within the Free World, each nation-state, along with their associated private sector companies possessing national identities and orientations, formed the basic unit of economic competition. In 1991 the Soviet Parliament dissolved the Soviet Union, effectively ending the period of the divided world.



Divided World. For the majority of the 20th century the world was ideologically divided between the Communist Bloc and the Free World. The nation state with its nationally oriented companies was the basic unit of competition.



The New Global Economic Geography. The collapse of the Soviet Union and the Communist Bloc in 1991 began a process of global economic integration. This process has involved a massive restructuring of global business activity, the formation of new trading blocs and the pattern of hubs and connections.

1999

A new global economic geography emerged.

The decade of the 90s was a period of historic transition that ushered in massive global change. As political barriers collapsed, China and India were rapidly drawn into the global economy that now numbers 6 billion people. By the middle of the decade a new system of trading blocs (e.g. North America, The Russian Federation and the European Union) had emerged.

These trading blocs were based on the functional relationships that could be developed by utilizing the surface corridors connecting the contiguous countries of a single continent.

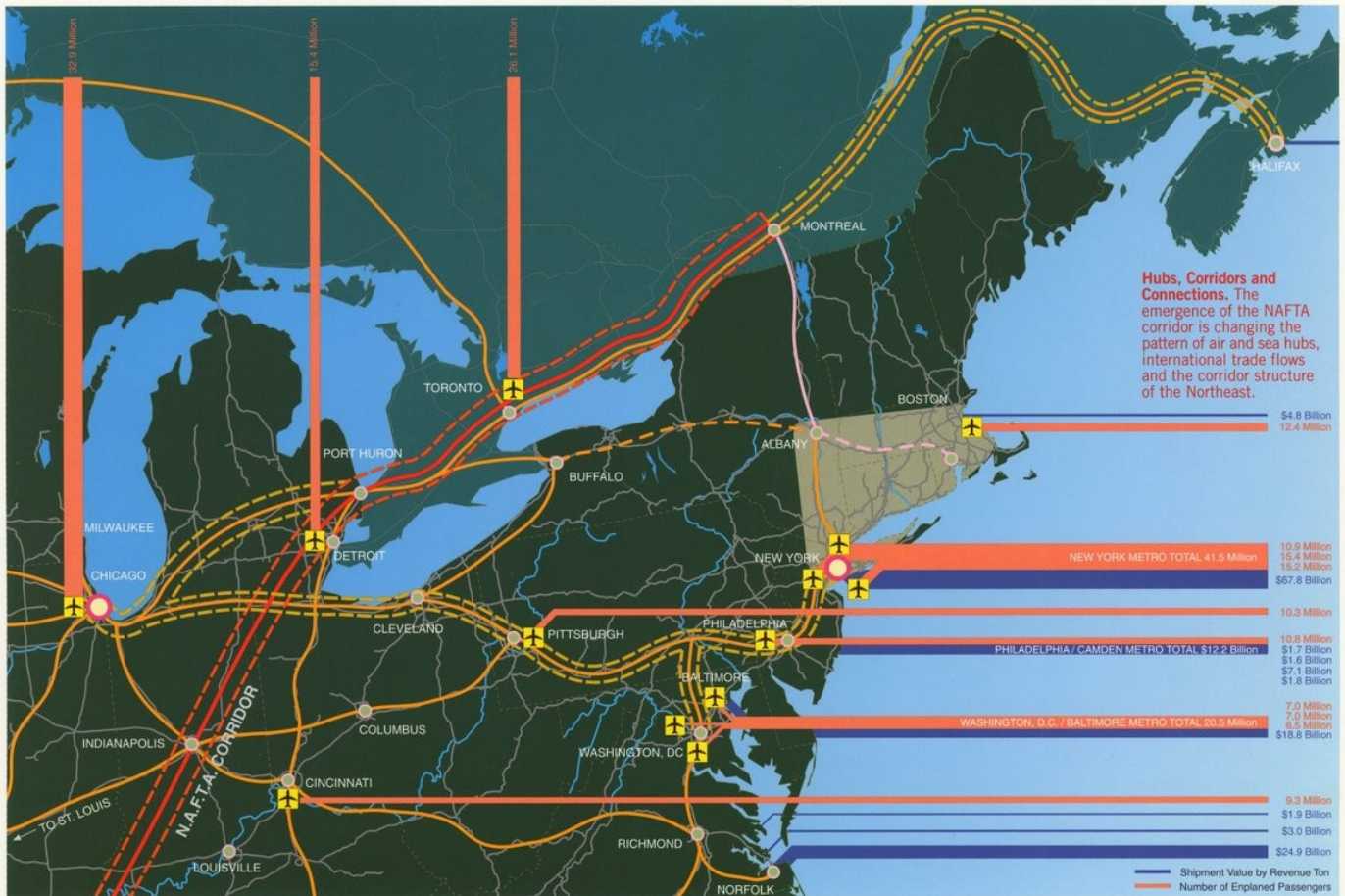
Multi-jurisdictional and sometimes multi-country metro economic regions (e.g. Los Angeles, New York, Atlanta and Dallas) became the basic units of economic activity and the key hubs in the communications and

transportation network. The redistribution of economic activity throughout the global network has created a competition between metropolitan regions.

In addition, global-scale recognition of metro regions is changing as more are now part of the global network. The size, connectivity and level of specialization form the basis for the image, identity and level of recognition of metro regions.

north america / northeast super region

The Northeast Network



A massive restructuring of North America is underway. The formation of the North American trading bloc is leading to a reorganization of the continental grid. A vertical industrial axis, called the NAFTA Corridor, is taking shape connecting Montreal and Toronto, through Chicago, Detroit and the central Midwest to Monterey and Mexico City.

This corridor, linking the three countries of North America, is reshaping the distribution of continental economic activity and changing the dynamics of every metro region along the Atlantic seaboard. The larger size of the Mexican population has moved the economic center of the reshaped continental grid farther south, accelerating the growth of Southeastern ports and urban centers.

As a continental grid takes shape traditional boundaries are blurring. Within the restructuring North America, the traditional boundaries separating New England, the Mid-Atlantic, eastern Canada and the upper Midwest are blurring. One of the effects of an integrated continental grid is a redefined Northeast super region. The flurry of air, trucking, rail and sea transportation industry alliances and mergers that took place primarily in the 1990s has reorganized the operational and trade pattern of the Northeast. The Northeast, in a continental context, is now defined by a new and integrated set of continental corridors. On the north is a corridor anchored by Halifax and extending to the NAFTA Corridor via Montreal, Toronto and Chicago. In the center, the New

York metro region anchors two corridors: one extending west through Pittsburgh to Chicago or St. Louis and the other north through Albany to Buffalo and then west to Chicago. This latter corridor also extends north to Montreal. A southern corridor anchored by air at Washington and by sea at Norfolk also extends west to Chicago and St. Louis. For New England and Connecticut to reach the continental grid they must either connect through the New York metro or through Albany.

Halifax, New York and Norfolk. The Atlantic seaboard metro centers, located from Halifax to Miami, function as the principal points of connection between the Atlantic communications and transportation network and the North American continental grid.

While the New York to Chicago corridor remains the backbone of this region, Halifax now occupies an important position providing a North American seaport with a day shorter sea route from the NAFTA Corridor to Europe.

The size of the New York market makes it a primary consumption and destination point. Boston, Philadelphia, Baltimore and Washington D.C. are functionally connected to the hub in New York and the corridor it anchors extending to Chicago and St. Louis. However, within the New York metro region, the difficulty of crossing the Hudson makes the ports in Northern New Jersey the preferred point of connection for global shipments connecting to the North American continental grid.

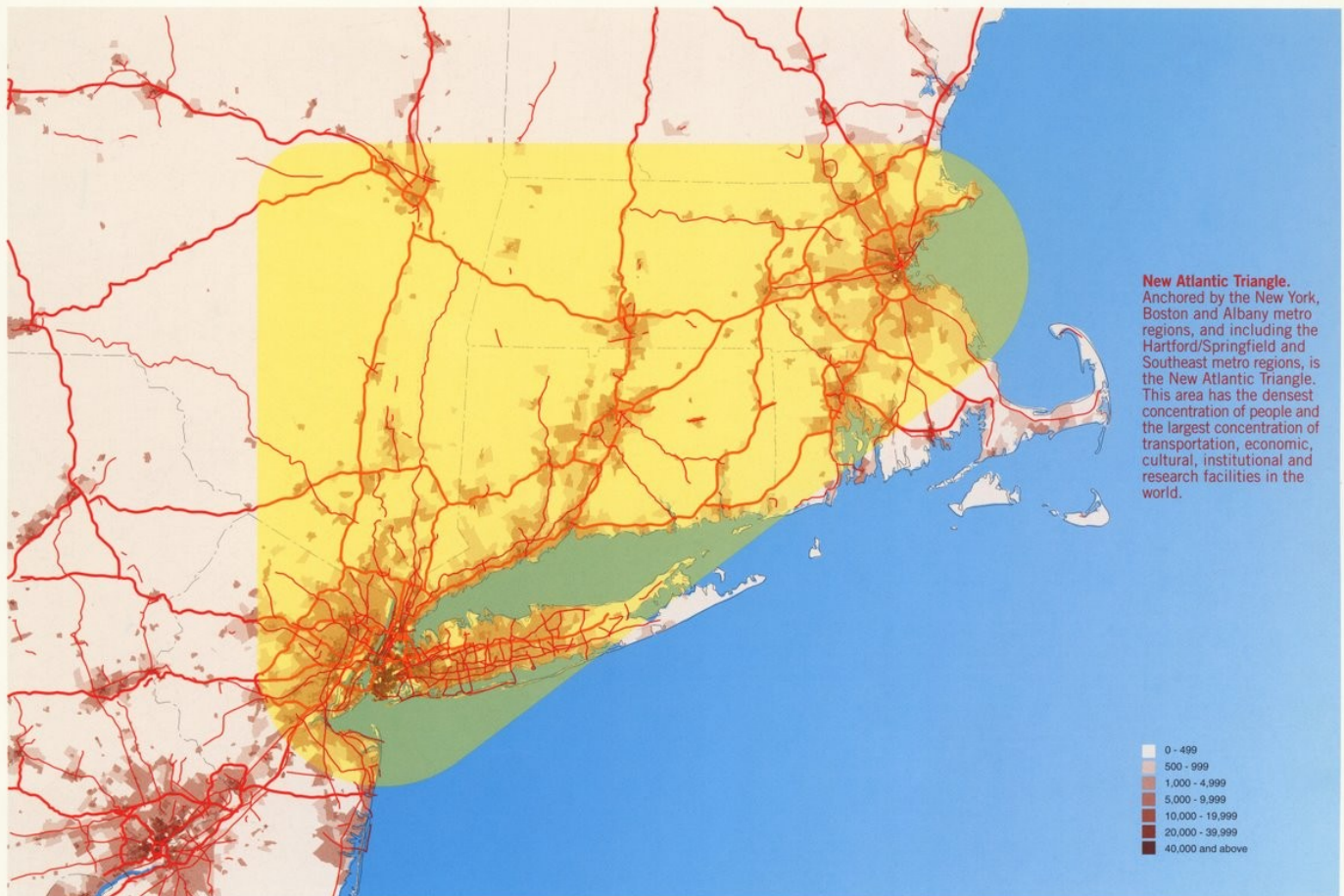
Norfolk anchors a corridor that extends closer to the center of the NAFTA Corridor. This corridor now defines the location of the southern boundary of the Northeast. As the corridors north and south of New England grow in importance, those extending directly through New England are stagnating.

Transportation linkages connecting Connecticut, New York and New Jersey are overwhelmed. The principal focus of the New York Regional Plan of 1929 was to link the islands and landmasses of New York, Connecticut and New Jersey into a single continuous metropolitan region by constructing a consolidated pattern of transportation across the entire region. The plan called for a number of bridges and tunnels to achieve the goal. Built during the 1930s to provide that linkage, this system of bridges and tunnels has long since been overwhelmed and congested by the growth of traffic.

A lack of adequate connections across the Hudson threatens the area east of the Hudson. This entire area is being bypassed by the principal trunk lines of the global network. While close to New York and Boston, Connecticut's position in the area east of the Hudson will impede its ability to access the global network and North America continental grid.

new atlantic triangle

Urbanization: 2000



Metropolitan not "Megalopolis." Published in 1961 on the eve of the introduction of the first commercial jets during the earliest phase of the interstate highway program and before the term "high tech" changed our world, the book "Megalopolis" projected that sprawl would turn the entire Northeast seaboard into one continuous urbanized area. Since the time "Megalopolis" was published, the combined effects of the vast restructuring of air and surface transportation created a new macro structure for metropolitan economic and population growth. The effects of institutional research and high tech concentrations further acted to reinforce a consolidated metropolitan pattern instead of the endlessly sprawling "megalopolitan" pattern.

A distinct configuration of five metro regions now defines the framework for New England. The New York metro region is set in the center of the Northeast super region. To the southwest are the Philadelphia and Washington/Baltimore metro regions. To the northeast are the Boston, Hartford/Springfield and Albany metro regions.

The Boston and Albany metro regions, together with the New York metro region, form the three points of a distinctive triangular structure. The triangle, called the "New Atlantic Triangle," is bisected by the Hartford/Springfield metro region and bounded by the Southeast Coastal metro economic region. The State of Connecticut's urban and economic pattern is set in the center of this "New Atlantic Triangle."

The "New Atlantic Triangle" has enormous economic, institutional and cultural resources.

The defining characteristics of the New Atlantic Triangle are its massive concentrations of economic, institutional and cultural resources not equaled in any other geographic area of the world. The enormous concentration of diverse financial services extends from New York, through Stamford and Hartford to Boston. The primary concentrations of educational, medical and research institutions found in the New York and Boston metro regions and the I-91 corridor provide the Triangle with the foundation for developing the New Economy. Its size, diversity and quality of the cultural assets give this region a third set of resources important for quality of life.

New England is integrated in the New Atlantic Triangle.

Traditionally, New England had evolved as a series of small cities and towns, each with its own specialized economy. These centers were linked by a spider web of arterial roads and transit networks and were served by a variety of air and seaports. The implementation of the interstate highway system in 1956 and the introduction of the commercial jet combined to form a system of hubs and corridors reinforcing the large metro centers at the expense of many of the traditional small cities and towns. Around the large metro centers of New York and Boston the smaller surrounding cities became satellites enmeshed in the metropolitan network. Several other metro regions took form around Hartford/Springfield and Albany. While

New England remains a distinct social and cultural region, its urban and economic pattern is an integrated part of the network of centers and corridors linking New York, Albany and New England in the New Atlantic Triangle.

Global linkage and continental access is split through the center of the New York metro region.

Philadelphia and Washington/Baltimore are emerging as the principal points of continental access to the global network. Those to the northeast, the New Atlantic Triangle, are becoming isolated with limited air service, without a significant port and with poor connections to the continental grid. While the New York metro region is now the principal point of global-to-continental connections, those connections are migrating to New Jersey, west of the Hudson. This significant shift in point of connection has split the New York metro region into two distinct sections east and west of the Hudson. The historic pattern of transportation connections linking New York equally to the areas immediately northeast and southwest is disintegrating under the impact of increasing metropolitan and global flows of goods and people.

centers and corridors

The Structure

Centers and corridors form the structure of metro regions. Metro regions are structured in a pattern of centers and corridors created by the development of urban freeways, transit systems, international airports and the suburban population explosion of small cities and towns surrounding the metro core cities.

The **structure** of each of the five New Atlantic Triangle metro regions is formed by its distinctive set of centers and corridors that creates the framework for social and economic activities and growth.

The **corridors** are formed by a combination of transportation and logistics lines including freeways, major arterials, transit and freight-rail lines. Within the metro region, these corridors have become the favored location for a wide variety of economic activities and commercial real estate developments.

The **centers** are the dense clusters of urban and economic activities that have formed throughout the region. While some are traditional urban centers, others are more recently formed commercial centers. The traditional centers typically contain some office and retail space, as well as the historically established institutional, cultural and governmental concentrations. The new commercial centers are typically mixed-use office and retail concentrations. Airports also can form the core for the development of office, hotel, distribution and manufacturing activities that create a commercial center. Some commercial centers that reach "Edge City" status actually begin to grow a more complex set of functions that resemble the traditional urban centers.

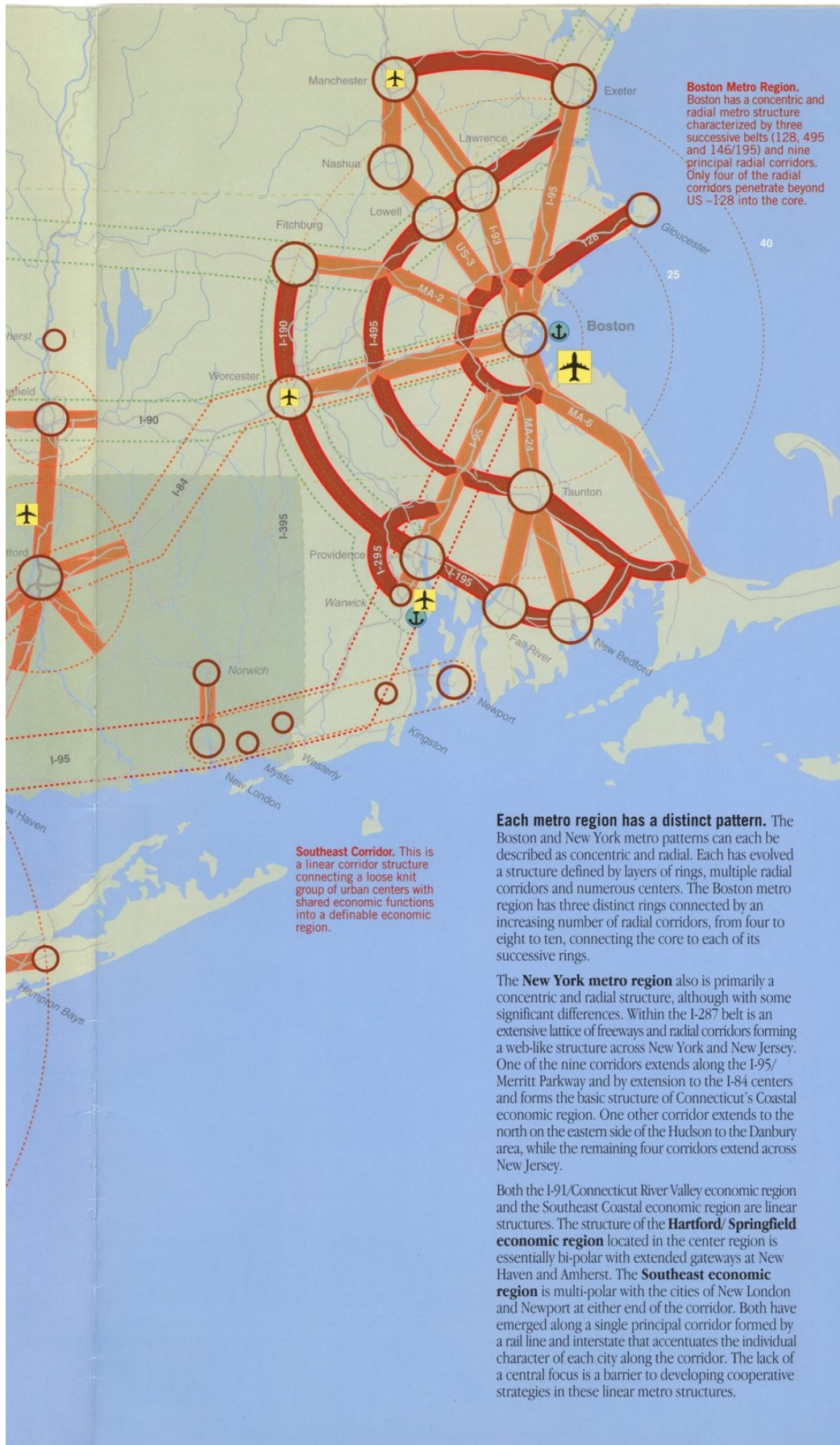
The structure is dynamic. The structures of centers and corridors within metro regions are essentially dynamic. New corridors are added and new centers are formed as the region continues to evolve. As population growth spreads out across a metro region, it uses the corridors as the avenue for growth and the existing traditional centers as stepping-stones. Ultimately the traditional centers undergo fundamental social and economic change as they become swallowed in a sea of expansion. New commercial centers form at key points within the corridor pattern to service the increasing population base. The combination of economically viable traditional urban town centers and the series of new commercial centers, together with the corridors, form the structure of the metropolitan region.

The development pattern of the New Atlantic Triangle. Within economic regions, development activities are concentrated in the metro centers and along the corridors. Between the regions, the connecting corridors sustain relatively light development activity and are principally transportation arteries. Within the Boston and New York metro structures, the distribution of economic activities do not flow equally through each of the corridors nor are they concentrated equally in each of the centers. Instead, each of the corridors and centers exhibits specialized development activities. Each activity seeks to maximize its location in terms of population access, relationship to educational, medical and research institutions, quality of life and necessary transportation functions. As a result, some are rapidly growing and others are in decline. One of the principal goals of public policy is to recognize and address the imbalances and barriers in the growth and development pattern. Unfortunately, the fragmented political structure is the greatest barrier to addressing these imbalances.

Albany. Although not a large metro region, Albany plays an important role in the New Atlantic Triangle as the gateway to the continental grid and NAFTA Corridor to Montreal.

Hartford/Springfield is a bipolar metro region with gateways at New Haven and Amherst. The I-91 corridor and three intersecting corridors form the region's structure. I-91 is an interstate and rail corridor. The three intersecting corridors have different combinations of interstate, freight rail, Amtrak, and transit modes.

New York Metro Region. This is a concentric and radial metro region with a structure characterized by a lattice of interstate and rail lines within the I-287 belt, and a series of nine radial corridors that extend outward to form the framework for population and economic growth. Two of the radial corridors, I-95 and I-684/I-84, extend into Connecticut.



Boston Metro Region. Boston has a concentric and radial metro structure characterized by three successive belts (128, 495 and 146/195) and nine principal radial corridors. Only four of the radial corridors penetrate beyond US -128 into the core.

Southeast Corridor. This is a linear corridor structure connecting a loose knit group of urban centers with shared economic functions into a definable economic region.

Each metro region has a distinct pattern. The Boston and New York metro patterns can each be described as concentric and radial. Each has evolved a structure defined by layers of rings, multiple radial corridors and numerous centers. The Boston metro region has three distinct rings connected by an increasing number of radial corridors, from four to eight to ten, connecting the core to each of its successive rings.

The **New York metro region** also is primarily a concentric and radial structure, although with some significant differences. Within the I-287 belt is an extensive lattice of freeways and radial corridors forming a web-like structure across New York and New Jersey. One of the nine corridors extends along the I-95/ Merritt Parkway and by extension to the I-84 centers and forms the basic structure of Connecticut's Coastal economic region. One other corridor extends to the north on the eastern side of the Hudson to the Danbury area, while the remaining four corridors extend across New Jersey.

Both the I-91/Connecticut River Valley economic region and the Southeast Coastal economic region are linear structures. The structure of the **Hartford/Springfield economic region** located in the center region is essentially bi-polar with extended gateways at New Haven and Amherst. The **Southeast economic region** is multi-polar with the cities of New London and Newport at either end of the corridor. Both have emerged along a single principal corridor formed by a rail line and interstate that accentuates the individual character of each city along the corridor. The lack of a central focus is a barrier to developing cooperative strategies in these linear metro structures.

The structure of the New Atlantic Triangle. The structure of the New Atlantic Triangle is formed by a set of connecting corridors which provide the conduit for the flow of social and economic interactions between the metro regions. People, freight and information flow along these corridors. The I-95 and I-90 corridors are each formed by interstate and rail lines. While the I-95 corridor is served by passenger rail, the I-90 corridor is primarily freight rail. These two corridors form the legs of the triangle connecting the Boston metro region to the New York and Albany metro regions. The New York Thruway forms the third leg of the triangle connecting New York to Albany. The I-84/I-684 connecting corridor bisects the triangle, while the perpendicular I-91 interstate/rail corridor connects Amherst to New Haven.

Political boundaries and continuous networks. This configuration of metro regional centers and corridor structures and the set of connecting corridors forms a single continuous and functionally interactive pattern of linkage across the area of southern New England and the eastern New York and New Jersey edge of the Mid-Atlantic states. Within this framework, the importance of the political boundaries and the traditional definitions of regions based on grouped political boundary lines is diminishing as a new structure and market dynamic defines the functional economic geography that no longer can be measured within a framework of political units.

Growth in the 1990s. The dynamics of growth in the 1990s were created by the effects of global integration and economic restructuring. The high growth areas of the New Atlantic Triangle in the 1990s are in the Boston and New York metro areas while the I-91/Connecticut River Valley is experiencing population loss. The high growth in the Boston area is principally to the north along the I-93 and US-3 corridors towards Manchester and south between the US-128 and I-495 belts. In New York, the high growth areas are principally in the west metro region beyond I-287 between the I-87 and Garden State Parkway radial corridors.

The role of Albany. The Albany metro region forms a hub and market region in the northwest point of the New Atlantic Triangle. Albany is the freight rail gateway for New England and Connecticut. Corridors extend outward to the NAFTA corridor and the principal international port located in Northern New Jersey. It also forms the market boundary for the Hartford/Springfield metro region.

Parts of three metro regions are located in Connecticut. Dividing the continuous network of the New Atlantic Triangle by state jurisdictions, three of the five metro regions are either partially or principally located within Connecticut.

- One of the eight radial arms of the New York metro region beyond I-287 is the Coastal Corridor anchored by Stamford, Bridgeport and New Haven that competes for economic activity within the New York metro region and forms Connecticut's gateway to the global economy and the continental grid.
- The Hartford/Springfield metro region with New Haven as its southern gateway extends along the I-91/Connecticut River Valley into Massachusetts.
- The New London, Norwich and Mystic area forms a significant portion of the Southeast Coastal metro region extending into Rhode Island. While none of Connecticut's economic regions is directly a part of the Boston metro region, this region does have an impact on eastern Connecticut.

connecticut economic regions

The Areas of Concentrated Economic Activity

Connecticut's three principal economic regions are parts of larger multi-state metro regions. Two lie along the coast while one bisects the state, positioned along the I-91/Connecticut River Valley. Each of the three metro economic regions has its own resources, competitive relationships and issues.

The primarily rural northwest and northeast sections of Connecticut are part of a social, economic and transportation matrix that connect to one or more of the three principal economic regions. **Waterbury**, a strong urban and economic center, serves as a regional economic hub with traditional connections to the coastal region and growing connections to the Hartford/Springfield metro region. **Danbury** also is a strong traditional urban economic center that forms a terminus to the New York metro region's I-684/I-84 corridor. Danbury is also linked to the coastal region by transit that connects to New York through Stamford.

COASTAL CORRIDOR

This economic region, a sub-market of the New York metro region, is formed around one of New York's eight radial transportation and development corridors. It has a population base of 1.3 million and extends from the I-287 belt in New York through Westchester County, and in Connecticut between Stamford, Bridgeport and Greater New Haven.

Corridor structure. The structure of this corridor is formed by a combination of interstates, parkways and rail lines. Its backbone is the I-95 Interstate, transit and Amtrak lines. The Merritt Parkway parallels the I-95 corridor and provides an alternative access route. The I-84 corridor parallels this corridor, as well. North-south highways, principally Routes 7 and 8, connect the traditional inland urban centers to the coastal corridor. Severe congestion problems in the lower section of this corridor effectively block access for the upper portions to fully compete for economic activity in the New York metro market. The proposed high-speed rail line that will operate in this area will provide only marginally increased service between New Haven

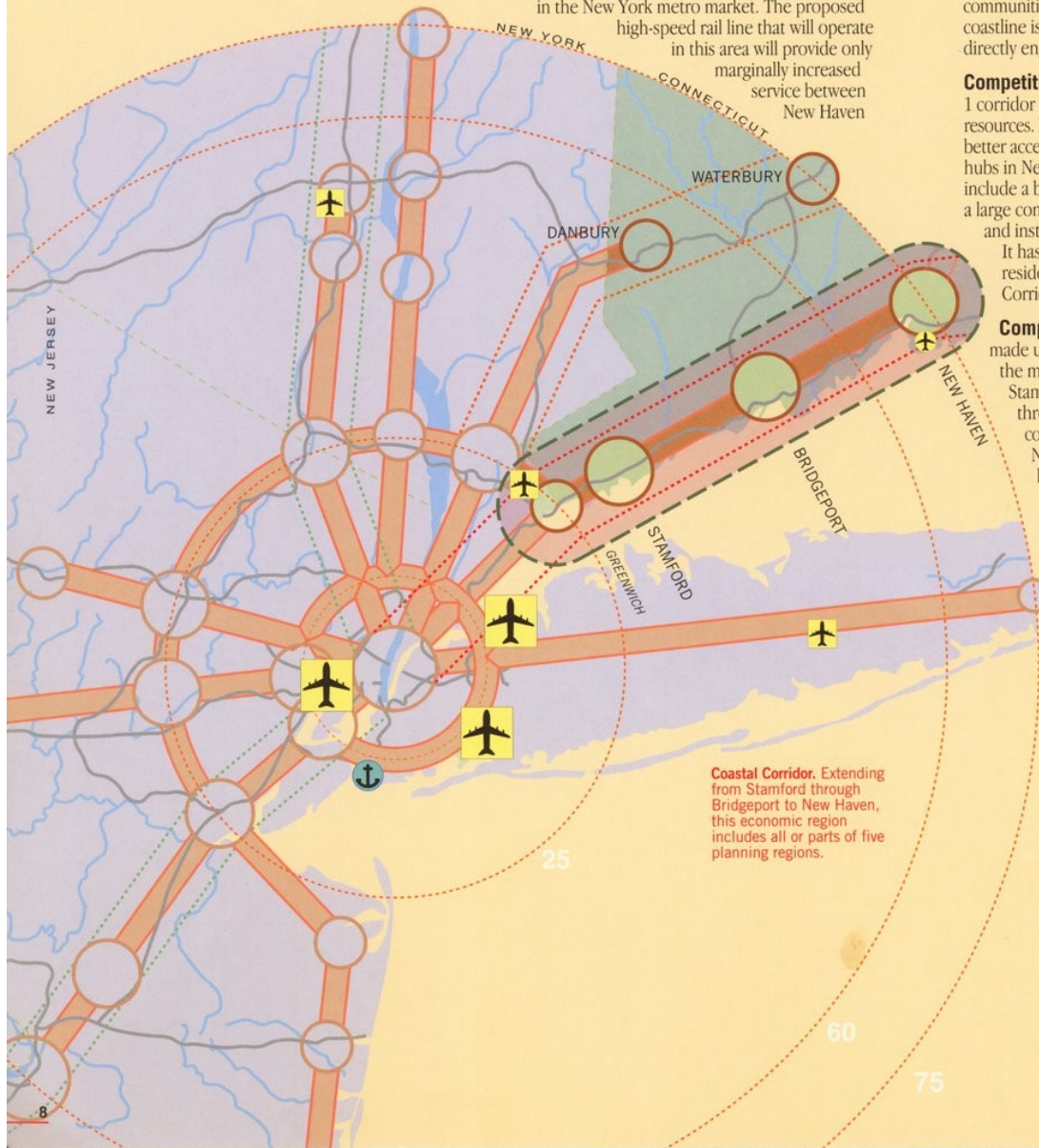
and New York, although the New Haven to Boston time will be significantly shortened.

Two seaports and one airport provide additional access. The seaports of New Haven and Bridgeport each have unique specialties, with Tweed Airport providing limited air service.

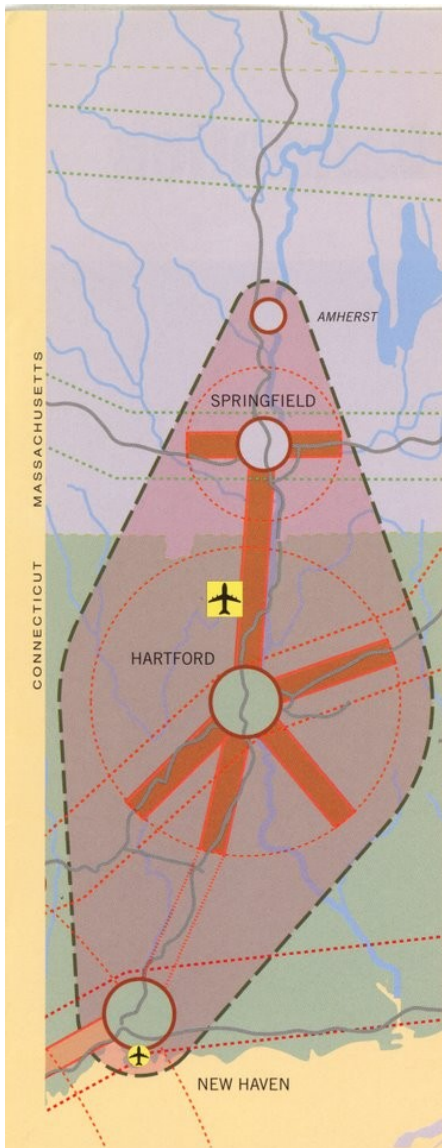
Competitive assets. Coastal Connecticut has one of the strongest concentrations of economic, institutional, cultural and research resources of any corridor in the New York metro region. Stamford has a large concentration of financial and high tech companies and corporate headquarters. New Haven has the institutional resources, including educational, medical, research and cultural resources, that are among the strongest in the New Atlantic Triangle. Bridgeport, a traditional urban and economic center has large new investments in commercial and residential developments and a significant specialty port. This corridor's large concentration of high quality residential communities is a significant asset. As well, the beautiful coastline is a distinct asset, but the urban fabric rarely directly engages the waterfront.

Competitive relationships. Only the NJTpk/Route 1 corridor in New Jersey has a comparable set of resources. However, this New Jersey corridor has much better access to international and domestic air and sea hubs in Newark. Its economic and institutional assets include a broad range of corporate headquarters and a large concentration of pharmaceutical companies and institutions (including Princeton and Rutgers). It has access to a much larger and diverse residential market than Connecticut's Coastal Corridor.

Competitive challenges. This corridor is made up of numerous municipalities anchored by the major urban and economic centers of Stamford, Bridgeport and New Haven. These three centers are each important to the competitiveness of this corridor in the dynamic New York metro region. Unfortunately, beyond Stamford, the middle and upper sections of this corridor are relatively isolated. The deterioration of the major centers is a barrier to the corridor's competitiveness. Bridgeport, with its strong traditional manufacturing base and specialty port, and New Haven, with Yale and its very strong medical and research capacities, represent potentially powerful tools in the regeneration of this corridor. The revitalization of New Haven is important to both of these metro regions.



Coastal Corridor. Extending from Stamford through Bridgeport to New Haven, this economic region includes all or parts of five planning regions.



I-91 / Connecticut River Valley. Extending from New Haven through Hartford to Springfield and Amherst, this economic region includes all or parts of five planning regions.

Competitive assets. This economic region is economically and institutionally diverse. Its economy is a mix of high-tech New Economy jobs, traditional manufacturing and distribution, finance (especially insurance), government, medical, research and tourism. It has the largest concentration of higher educational, medical and research facilities found in New England outside the New York or Boston metro areas.

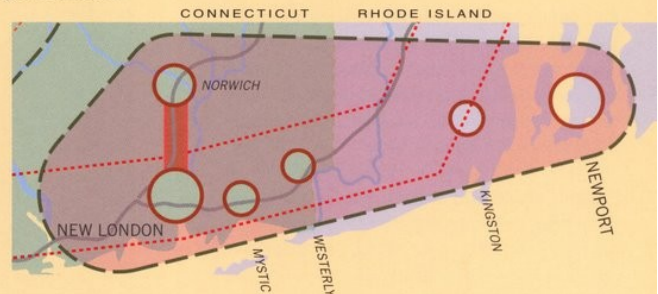
The primary economic core of this region is Hartford with a secondary core at Springfield. Both were and continue to be diversified economic centers with a mixture of government, finance, manufacturing and service industries. While mergers and alliances have reduced the number of headquarters located in the metro center, this metro region remains a headquarters center for six Fortune 500 companies.

Three major concentrations of educational, medical and research institutions are located in New Haven, Hartford and Amherst. Yale represents the single largest research institution. While the University of Connecticut has several branches, its main campus at Storrs is located near this corridor. Providing domestic and

international access to these resources is one of the key elements in maximizing their potential impact on this metro region.

Competitive relationships. With its location between the largest (New York) and the seventh largest (Boston) U.S. regions, this economic region appears to be relatively small. Its two million population base, however, ranks it among the top 25 metro regions in America, allowing it to effectively compete on its own in the continental and global economic networks, while recognizing the impacts of the surrounding mega-metros.

Competitive challenges. Significant defense industry cutbacks and the restructuring of the financial industry significantly altered the economic structure and the fundamental characteristics of this metro region. The region has important structural strengths with its concentration of institutions, environmental setting and logistics infrastructure. The ability to mobilize these assets will determine how well the region develops a new identity and strategic future.



Southeast Corridor. Extending from New London through Groton and Mystic to Newport, this economic region includes all or parts of three planning regions.

SOUTHEAST CORRIDOR

This is a bi-state metro region extending from New London to Newport including Norwich and the casinos. This economic region has a population base of 332,000 making it the smallest of the five Atlantic Triangle metro regions. The population base is almost evenly split between Rhode Island and Connecticut. However, the Connecticut component is geographically larger. Unlike the other two metro regions this is not a dense or continuous area, but rather a string of very unique urban centers that share various economic linkages and transportation connections.

Corridor structure. The region's structure is linear, formed by the I-95 interstate and transit corridor. Access is provided by the air, sea, and surface road and rail network. The principal interstate is the I-95 freeway and Amtrak is the principal transit line. Green Airport provides the majority of air service to the region. The state port at New London has rail connections to the CN line that crosses the CSX line in Worcester. The high-speed passenger line will pass through this region with a stop at New London, significantly increasing its access to the Boston and New York markets.

Competitive assets. The Southeast Corridor economic region is set in one of the most diverse and heavily contoured environmental settings with a sandy shore, river valleys and a bay. This setting provides each of the communities with a distinct location and identity. Some of America's most famous architecture and historic towns are located here including the well known historic cities of New London, Norwich, Mystic, and Newport.

This economic region has a four-part economy composed of military/defense, tourism/casinos,

maritime, and bioscience. The biosciences have grown to become an important and vital part of its economy. New world-class pharmaceutical laboratory and clinical research facilities are evidence of the changing structure of the region's economy as it is primarily a research and development (not manufacturing) center. The military/defense and tourism/casino functions are distributed among several geographic areas. While Newport shares in both, this area has been a tourist destination for more than 100 years. The recent addition of casinos has added to the region's economy and attraction. Plans are underway by the casinos to develop significant new convention facilities. The military economy has declined significantly, yet has stabilized and remains an important part of this region. Together with the military/defense economy are several well known institutions, including the Coast Guard Academy, the Naval War College and the Naval Undersea Warfare Center at Newport that contribute to the character and life of the region. The region possesses a long and distinguished maritime heritage. The port of New London, a deep-water harbor with on-site multi-modal (highway and rail) infrastructure, exemplifies this.

Competitive relationships. This corridor competes regionally, nationally and globally for military/defense, maritime, tourism/casino and bioscience business.

Competitive challenges. This economic region is maintaining its military/defense and maritime industrial base while expanding its bioscience and tourism/casino enterprises. This focus on economic diversification will require stronger partnerships between the public, private and institutional sector.

I-91 / CONNECTICUT VALLEY

The Hartford/Springfield metro region is in the center of the I-91/Connecticut River Valley Corridor. It is a bi-state metro extending from New Haven, which functions as its southern gateway, to Amherst and Northampton, which together form the northern terminus. It has a metro population of almost 2 million and serves 500,000 people in the surrounding regions.

Corridor structure. This corridor forms an important transportation and logistics sub-structure within the New Atlantic Triangle. It is a linear structure with three important crossing points and two hubs. The backbone of the transportation structure is the corridor formed by I-91 and the Amtrak line from New Haven to Springfield. The I-91 corridor crosses three east-west interstates: I-95 at New Haven, I-84 at Hartford and I-90 at Springfield. Both I-90 and I-95 have parallel rail lines. The former is the CSX freight line while the latter is the Amtrak passenger line. The proposed high-speed passenger rail line will run from Boston to Washington along the coast and will intersect the I-91/Connecticut River Valley corridor at New Haven.

Three ports are located at key points along this corridor. The first is the seaport at New Haven, the anchor point of the rail system and the entry point of bulk cargo important to the manufacturing base in this region. The second is Bradley International Airport, the principal transportation hub on this corridor. UPS operates one of its six mini hubs at Bradley and a ground hub at Hartford serving the entire Northeast. The third hub is Tweed Airport at New Haven.

systems resources

The quality of life and economic activities of a region depend on the various environmental, transportation, educational, medical and other systems that all cross a metro region's traditional political boundary lines. While political jurisdictional lines establish boundaries, urban and environmental systems are continuous, crossing municipal, state and national boundary lines.

Metro regions, much like the human body, are made up of a series of different systems. Together the various systems provide the structure, define the form and sustain the economic health, quality of life and vitality of the organism. An examination of the pattern and dynamics of the systems and the distribution of resource concentrations is necessary to position the competitive strengths, opportunities and challenges of Connecticut's metro economic regions in the New Atlantic Triangle.

An analysis of the systems in the New Atlantic Triangle reveals that each of Connecticut's three economic regions is positioned differently and has a different mix and level of resources. These resources have an important role in creating the image, identity and future of each metro region.

Creating a strategic future for each of Connecticut's three metro economic regions involves developing a strategy for each of the systems that strengthens the pattern, linkages and resources within each of the systems.

ENVIRONMENT & URBANIZATION

These two systems define the basic context, pattern of human settlements and growth trends.

QUALITY OF LIFE

Culture, arts, sports, convention and tourism are systems that provide a foundation for sustaining the quality of life.

NETWORK

Transportation, logistics and communications are the three systems that define the skeleton and framework upon which development takes place.

ECONOMIC DEVELOPMENT

This is the engine driving the growth of each metro economic region.

REAL ESTATE

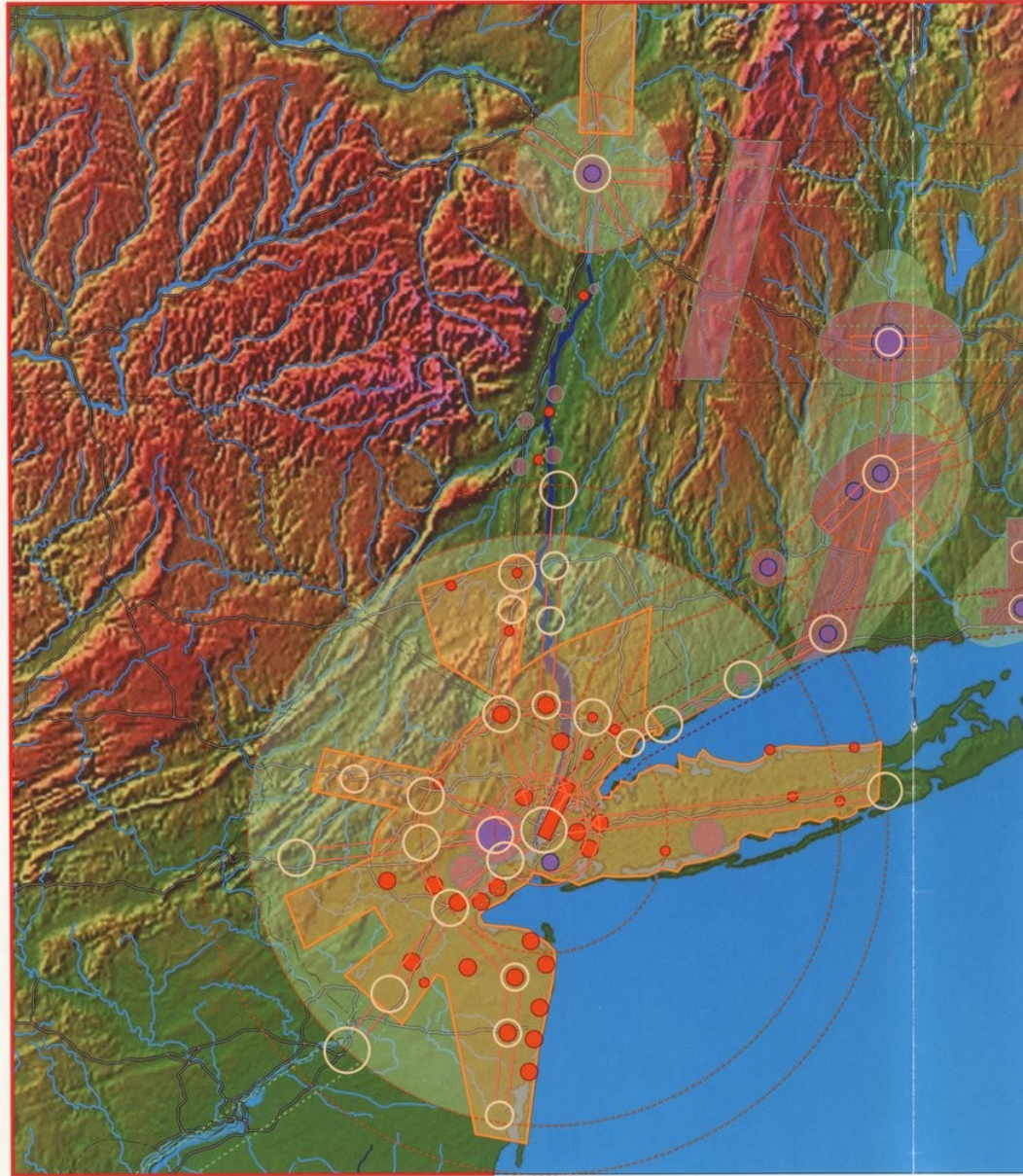
This system reflects the direction and trends of economic development activities.

EDUCATION • MEDICAL • RESEARCH

Institutions and their associated research are the pillars supporting regional development.

environment • urbanization

Nature and Man



The area to the east of the Hudson is one of North America's principal physiographic regions. This is a wonderfully diverse environment, with river valleys, upland hills and an extended coastline. This environmental setting defined New England and provided the context for the myriad of small cities and villages that characterize the region. Within this region, Connecticut occupies a central position with an extensive coastline, river valleys and upland hills. The environment, highly defined by its coastline and river valleys, provides the context for the continuing pattern and trends of urbanization.

A significant shift in urbanization. The state's current trends in land use are marked by a population shift from the traditional urban centers, which are

depopulating, to the surrounding suburbs, which are growing. This trend towards sprawl is resulting in environmental deterioration and loss of scenic areas as well as contributing to transportation problems. The state is in a period of transition as re-urbanization strategies attempt to reverse the city-to-suburb migration.

Connecticut's major traditional urban and economic centers continue to play an important role in the state's economy. The major traditional urban centers still occupy strategic locations and form the basic anchor points for urban and economic growth in each of the metro regions. Unfortunately, many of these centers are decaying. Efforts are underway to reverse the trends in these urban centers; however, in their current condition they are barriers to the growth

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Culture • Arts • Sports • Convention • Tourism

Culture, arts, sports and conventions are fundamentally important for enhancing the quality of life and attracting economic activity.

Culture, arts, sports and conventions are more than simply background amenities. They have a significant impact on the quality of life, a vital factor in sustaining and attracting economic development. The creativity manifested in culture and arts is also a fundamental quality in the "New Economy."

Connecticut is located between two of the largest cultural, convention and sports centers in the nation.

Connecticut's location between two of the nation's largest metro regions with the greatest concentrations of cultural, arts, sports, convention and tourism resources presents a special challenge.

Connecticut's proximity to the large New York and Boston metro centers provides it with the ability to draw from a multi-state region. However, access to these large metro markets is impacted by traffic and transit congestion.

Connecticut is strong in "heritage" and "day" tourism.

The state is currently developing several major convention facilities to strengthen convention tourism. Statistics indicate that Connecticut strongly benefits from tourism originating from New York and the west and somewhat from Boston and the east. Each of the three metro regions has a different mix and type of historic and environmental amenities with which to attract tourism. They are not essentially in competition with each other.

Connecticut must specialize in high quality offerings to compete.

Connecticut must depend on specialized, high quality niche offerings in each category to effectively compete. Connecticut's three metro regions have some very high quality resources, including arts and culture in New Haven and Hartford, historic and environmental on the coast, valleys and hills, and a series of minor league sports offerings. To effectively compete for audience these offerings need to continually upgrade and to develop other resources (e.g. convention centers and stadiums) necessary to maximize their market share in the competitive environment.

New facilities can be part of regeneration strategies.

Culture, arts, sports and conventions facilities not only provide citizens with entertainment, but also can be part of an urban regeneration strategy, such as the new baseball stadium in downtown Bridgeport. The development of new convention facilities is necessary for attracting tourism to the traditional urban centers. Each new facility should complement the others, fill its own special niche and be linked to comprehensive urban development strategies.



Urbanization and the Environment. The distinct and highly configured environmental structure of New York and New England creates the context for, and continues to heavily influence, the pattern of urbanization across the New Atlantic Triangle. Since 1990, significant new trends have emerged in the direction and levels of growth and decline across the region.

1990 - 1996

- HIGH GROWTH
- MODERATE GROWTH
- MODERATE LOSS
- HIGH LOSS

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and vitality in each of the state's metro economic regions.

Connecticut's population is becoming increasingly older and culturally diverse. New England has always been a major educational center attracting the "best and the brightest" young people from around the world. However, after graduation these people too often leave for opportunities elsewhere. Providing opportunities for young professionals to continue living in Connecticut and this region is vital to the state's long term economic strategy.

Maintaining open space and preserving the environment is vital to the future. Environmental strategies must be integrated with urban and economic strategies. As the suburbs continue to grow, they are eroding the open space and scenic areas of the state.

Loss of these important environmental qualities would be detrimental to the state's quality of life and attractiveness as a place to live.

The coast and the river valleys are important to urban regeneration.

The traditional urban and economic centers in each of the three metro economic regions have important relationships to water. These environmental resources offer opportunities to increase the quality of life in traditional urban areas. However, these centers have only recently begun to recognize and engage the water as an important component of urban regeneration. Urban revitalization strategies should include stronger relationships to the rivers and coastlines that are based on protecting and reclaiming the environmental quality of these same resources.

network

Movement of People, Goods and Information

The movement of people, information and goods.

The world's systems for moving people (transportation), goods (logistics) and information (communication) form the global network. Today, the three systems are increasingly interactive and integrated. As integration continues, the volume of people and freight moving through the global network has increased enormously, changing its pattern. This change is having dramatic effects on routing patterns, hubs, airports, seaports, rail facilities, roads and the economic destiny of metro regions.

The changing shape of the global network is producing a corresponding shift in the location of economic activities and causing new corridors and hub locations to emerge. Metro regions must respond to the demands of these changes or they will be quickly left behind as new points of connection come into existence. Creating the strategic initiatives to strengthen Connecticut's position in the emerging global network is fundamental to the state's economic future.

Connecticut's challenge in the changing network.

Although Connecticut's three economic regions are located close to major global and continental transportation and logistics hubs, they are difficult to access. People and freight flows are necessary to sustain the long-term growth and vitality of economic activities, even though much of the "New Economy" is communications oriented. Each of Connecticut's three regions is affected by the dynamics of the New Atlantic Triangle network.

Each of the three regions is positioned differently, has very different needs and requires different policies and investments to remain viable economic centers. While the Coastal Corridor is a part of the New York regional transportation and logistics structure and the Southeast corridor is not, both depend on the I-95 corridor for their primary access. The I-91 corridor, with an interstate, rail line, airport and seaport forming a transportation and logistics substructure, has opportunities to build its distribution and logistics functions within the New Atlantic Triangle.

The economic future of each of Connecticut's economic regions is connected to the pattern and dynamics of the New Atlantic Triangle. Each of the three regions shares the network and thereby shares economic relationships with surrounding states, i.e. the Coastal Corridor with New York and New Jersey, the Southeast Corridor with Rhode Island and the I-91/Connecticut River Valley Corridor with Massachusetts. These relationships are important to each of the states and will require new relationships to create an integrated multi-state strategy ensuring that the area east of the Hudson remains a viable economic region in the emerging global age.

The hubs and corridors of the New Atlantic Triangle.

The New Atlantic Triangle network is composed of a series of hubs and corridors. The corridors are formed by airline, shipping and communications trunk lines along with interstates and rails. The hubs are the junction points formed by airports, seaports, terminals and yards. The principal hubs of transportation, logistics and communications systems are typically located in urban centers.

There are four principal hubs and a series of secondary hubs, as well as five principal corridors and a series of secondary corridors forming the network of the New Atlantic Triangle. Of the four hubs, New York is the primary air and sea global hub, Boston an important air hub, Albany an air and rail hub and Bradley

International Airport is an air hub. Of the five principal corridors, two link New York to Boston (the I-95 interstate, Amtrak and transit corridor, and the I-84/684 interstate corridor). One links Boston to Albany (the I-90 interstate and CSX freight rail corridor), and one, the Hudson River interstate and freight rail corridor, links Albany to New York. The fifth corridor, I-91, bisects the triangle and links the Hartford/Springfield metro region to the I-90, I-84 and I-95 corridors.

The pattern of the New Atlantic Triangle is changing.

As global integration takes place accompanied by dramatic increases in the flows of people, goods and information, new demands on the transportation, logistics and communications networks are emerging. In each case, the need for the capacity and connectivity to access the global marketplace is changing the shape of the network. Connecticut's communications infrastructure is rapidly evolving and needs to emerge with the capacity necessary to effectively serve the "New Economy".

However, the freight transportation structure of the region is shifting as northern New Jersey emerges as the best place for global freight to connect with the continental grid. For goods destined for Connecticut and New England, freight rail access will remain limited due to continued routing through Albany or via barge across the Hudson and East Rivers to the coastal single stack line. As a result, truck traffic will increase significantly. Trucks originating in New Jersey will have to cross the center of the New York metro and then travel by I-95 to reach the three metro economic regions of Connecticut. The growth of truck traffic on the already congested I-95 corridor will create an even greater barrier to Connecticut's continued economic growth.

The pattern of congestion limits access and dynamism.

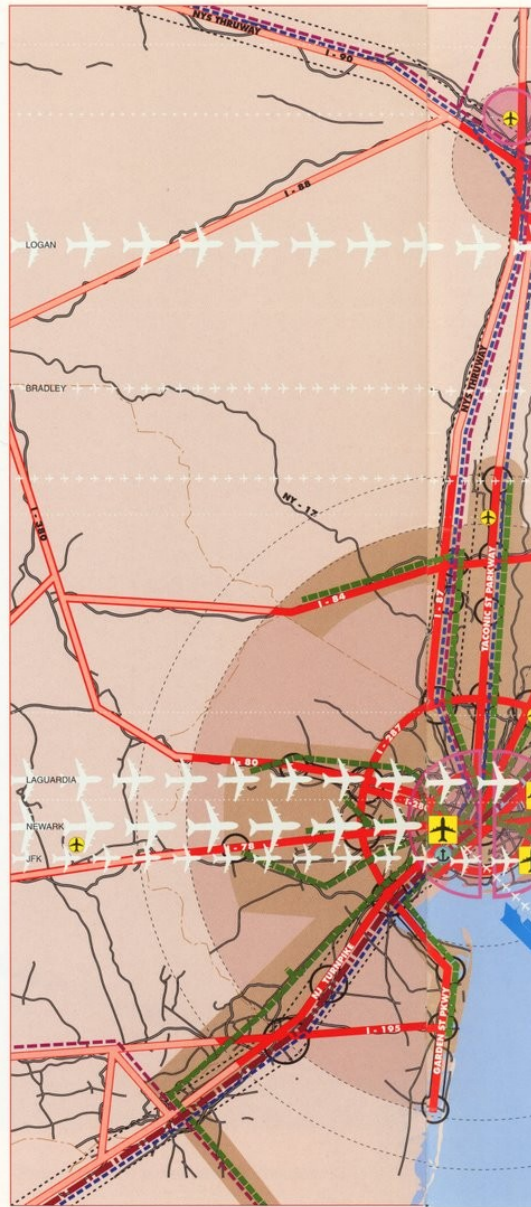
Connecticut's access to the global marketplace is principally through the I-95 corridor. This corridor, with interstate and transit lines, provides access into the very dynamic New York metro region and access to the continental grid. The rail system in this corridor is slated for upgrade to high-speed with only a negligible effect on the time from New Haven to New York. While the Connecticut to New York commute is largely transit-oriented, there is very little inter-city transit within Connecticut. As congestion increases in this corridor and the major global connections move west of the Hudson, this corridor will not offer the level of access to the economic activities and hubs necessary to support Connecticut's institutions, businesses and people. Congestion effectively blocks economic activity from extending farther than Stamford in the Coastal Corridor. Opening this corridor would allow economic activities to extend more into the statewide network.

The area east of the Hudson is in danger of becoming a giant cul de sac, or dead end, in the global network.

There is a lack of adequate cross-Hudson connections by bridge or tunnel to support efficient flows of people and goods. This lack of effective connections has forced the major point of global-to-continental linkage to move west across the Hudson from its traditional point in New York to its new location in northern New Jersey. As hard as it is to believe in this day and age, the Hudson River once again forms a significant divide in the North American continental grid. As a result, the area east of the Hudson is losing connectivity to the global network and becoming increasingly isolated.

New York Metro. The major international, air and sea passenger and freight hub of North America is served by the continent's most extensive rail, transit and interstate network. The lack of adequate connections across the Hudson has split the region. As a result, the area west of the Hudson (northern New Jersey) has excellent rail and interstate connections to the continental grid, while the area to the east is becoming increasingly isolated.

Hartford/Springfield. New York, Interstate to support



The New Atlantic transportation and logistics systems are severely congested and "locked" and unable to respond to global change. The "locked" and impacted structure of the airports, seaports and surface networks in the major global hubs of New York and Boston is a threat to the region. Throughout the New Atlantic Triangle the principal corridors and hubs are located in heavily urbanized areas and lack the available land necessary to increase capacities and effectively respond to the changing structure of the global network. Global flows will continue to grow. If the hubs and corridors of the New

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Hartford/Springfield Metro. Positioned midway between the New York, Boston and Albany metro regions, the transportation structure, including an airport, seaport, rail, Amtrak and Interstate 91, provides the area with the necessary resources to support logistics and distributions activities.

Boston Metro. This is primarily an international air freight and passenger hub with a severely locked air structure. The transit and interstate network serves metro commuting. The metro lacks a good seaport with surface rail and interstate connections and the area's concentric and radial transportation pattern creates significant congestion within the center core.



Network Structure and Dynamics. There are four dimensions of movements in the transportation network: international people and goods by air and sea; intra-metro commuting networks by road and transit; inter-metro passenger movements by interstate and Amtrak; and the air, water, trucking and rail logistics network involved in the distribution of goods throughout the region. Completing the network is the communications network for the movement of information.

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Atlantic Triangle are unable to respond, the pattern will adjust and the flows will locate in those other corridors and hubs that are able to serve the needs of the global marketplace. Also, loss of access to the region will drive up the cost of imported consumer goods and raw materials and will result in continuing increases in the cost of living.

The I-91 corridor is an important transportation and logistics corridor. This corridor, with an interstate freeway, rail line, seaport and airport, forms a logistics sub-structure within New England. Bradley occupies a strategic site in the center of the I-

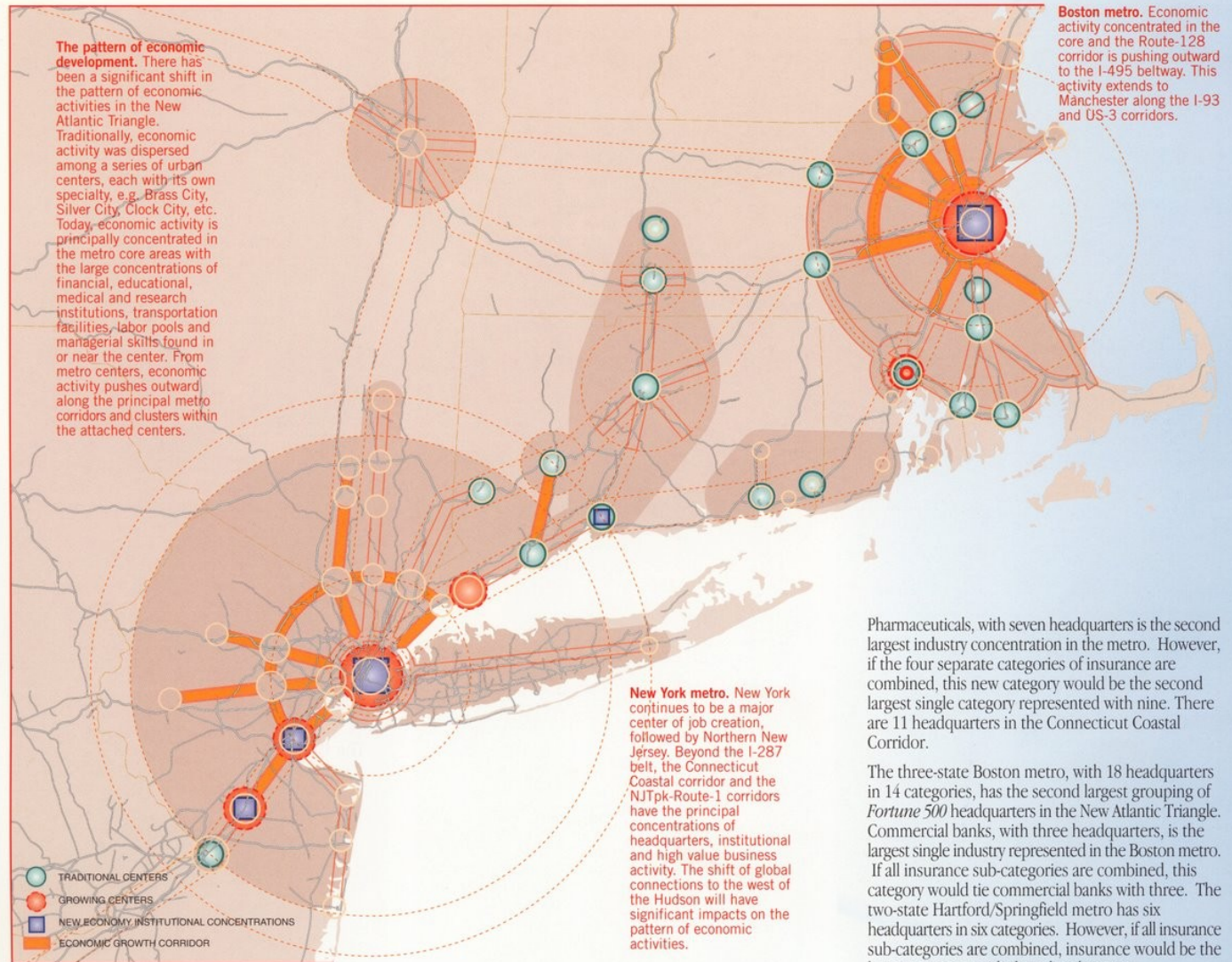
91/Connecticut River Valley corridor midway between I-90 and I-84 and forms the anchor point for logistics functions. Utilizing the combination of transportation and logistics resources found in this corridor to create a foundation for various economic activities can have long-term benefits to the state and the region.

The multi-modal future. Around the U.S., regions are beginning to evolve the multi-modal network hubs and infrastructure necessary to compete in a global age. Airports can serve as the linkages between transportation, logistics and communications, including road, rail, air, water, cable and satellite to serve the global marketplace.

For example, Charlotte's airport is in the process of evolving a multi-modal hub involving the integration of rail, transit, trucking, interstate and high capacity communications to serve passenger, freight and communications needs as a single integrated site. The NS freight rail commuter line to the Port of Charleston will provide access to waterborne freight. Atlanta, realizing the need to maintain its connections to the global marketplace, is planning to significantly expand its already large airport. Detroit has evolved a similar trans-hub concept to link its large lake port, airports, rail, interstate and communications systems into an integrated network of passenger and freight movements.

economic development

Manufacturing • Bioscience • Finance • Innovation



The changing pattern of economic activity.

Traditionally, Connecticut and New England had a dispersed pattern of urban and economic centers. Each of these centers was focused either on trading, manufacturing or finance and had its own specialty, e.g. brass, silver, hats, insurance, etc. Over the past 50 years a significant shift in the structure and pattern of economic activity has taken place. As the New Economy began to take shape, economic activity increasingly concentrated in the Boston and New York metro areas, attracted by the lure of large labor pools, global access, research institutions and capital. The New York metro economy is a large and diverse concentration of activities, including one of the greatest industrial concentrations in North America. The Boston economy is becoming increasingly specialized and polarized between high-tech / high value activities and low value/service. While the pattern of economic activity in these two centers continues to concentrate in their core areas, there also is a growing outward dispersion along the metro corridors. The primary thrust of high value economic activity in the Boston market is to the

north along the I-93 and US-3 corridors presently reaching to Manchester, NH. The primary thrust of the New York market is west into New Jersey and for R&D and financial institutions northeast into Stamford. The social and economic future of the areas in between the two dominant metro centers of New York and Boston are highly dependent upon their access and relationship to the economic activities and markets located within these two very large metro regions.

The pattern of corporate headquarters.

The New Atlantic Triangle is home to 111 (22%) of the 1998 *Fortune 500* headquarters in 42 of the 62 industry categories tracked (68%). These are found in three principal groupings including the New York metro, the Boston Metro, and in the Hartford metro. The three-state New York metro, with 87 headquarters representing 36 of the 62 *Fortune 500* industry categories, is the largest grouping in the nation. New York City itself has 45 of these headquarters. Commercial banks (5), securities firms (5), and diversified financials (3) combine to form the large financial group in the New York metro.

Pharmaceuticals, with seven headquarters is the second largest industry concentration in the metro. However, if the four separate categories of insurance are combined, this new category would be the second largest single category represented with nine. There are 11 headquarters in the Connecticut Coastal Corridor.

The three-state Boston metro, with 18 headquarters in 14 categories, has the second largest grouping of *Fortune 500* headquarters in the New Atlantic Triangle. Commercial banks, with three headquarters, is the largest single industry represented in the Boston metro. If all insurance sub-categories are combined, this category would tie commercial banks with three. The two-state Hartford/Springfield metro has six headquarters in six categories. However, if all insurance sub-categories are combined, insurance would be the largest category with three headquarters.

The structure of the economy is changing.

Under the impact of the high cost of living, the "New Economy" and the changing pattern of flows and connectivity, the structure of the Connecticut economy and its development pattern are changing. The structural changes involve a continuing shift from a traditional manufacturing economy to an R&D economy. This shift has to be supported by an institutional structure that provides the resources and training required for sustaining new economy activities. As markets grow and mature, they spin off activity to other markets. As the largest and most dynamic of the metro economic regions, New York has the greatest potential to spin off activity to Connecticut. Maximizing Connecticut's relationship to this important metro regional market is crucial to the future economy of the state.

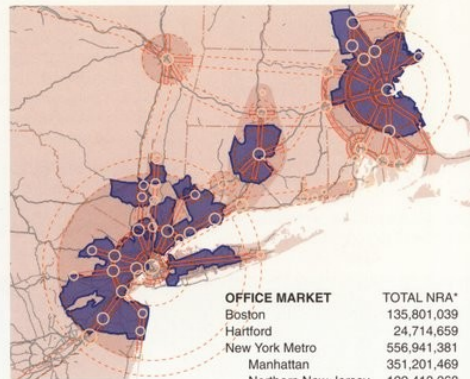
Manufacturing is important to Connecticut.

The industrialization of America began in New England. In the early nineteenth century New England emerged as the center of American manufacturing. However, the industrialization of the Midwest, and later the

real estate

Development Trends

OFFICE



Source: Torto Wheaton Research
*Net Rentable Area

New York remains the center of the real estate market in the New Atlantic Triangle. The New York metro market of over 20 million people is the largest total real estate market in the nation. Of the other four metro regions, only Boston and Hartford represent significant real estate markets, neither of which has been dynamic in the 90s. Of the three Connecticut economic regions, only Coastal Connecticut and Hartford are significant markets.

There are only three consistently researched real estate markets in the New Atlantic Triangle. Boston, Hartford and the New York metro regional market area are tracked markets. Only those markets with sufficient size, dynamism and activity are researched and their statistics updated regularly. This information provides the real estate community including developers, investors and financial institutions with the data necessary to make judgments on the viability and stability of investments. Markets that are not tracked become invisible to the real estate community. Only two of Connecticut's economic regions are currently tracked.

The office market. Of the New York, Boston and Hartford office markets, New York is the largest and most dynamic in the New Atlantic Triangle and the continent. It is a market of such size that each of the contiguous market areas is considered an independent market, not a sub-market. Boston and Northern New Jersey have the second and third largest concentrations of office activity. The Coastal Connecticut economic region is a sub-market of New York. Thus far, only Stamford has attracted significant office development from the New York market. From Stamford, only Shelton has received any spin off activity. While Hartford has an office market of similar size, it is not currently a dynamic market.

The industrial market. Of the three industrial markets of New York, Boston, and Hartford, the New York metro is the largest and most dynamic industrial market in the New Atlantic Triangle. On a national basis only Los Angeles has a larger industrial market. Of the tracked markets, northern New Jersey is the largest industrial market, dwarfing in size all other markets in the New Atlantic Triangle. The Boston market is the second largest and Hartford is the third largest. Coastal Connecticut is a small but significant industrial sub-market. The Southeast Corridor is primarily a single tenant market.

The retail market. There is no consistent data to measure the relative size of the retail markets of Boston, Hartford and New York. However, it is apparent to the real estate industry that Manhattan is the largest, highest value and most dynamic retail market in the New Atlantic Triangle. Surrounding Manhattan are high value centers located in Short Hills, New Jersey, Westchester and in Stamford, Connecticut. Downtown Boston also is a large, dynamic and high value market. The Hartford metro is the third largest retail market, with its activity principally located among its suburbs. The Southeast Corridor is primarily a series of specialty retail centers, while Danbury has the largest retail mall in New England.

Northern New Jersey is the largest combined office and industrial sub-market in the region. This sub-market is very dynamic and will continue to grow rapidly as global and continental connections are consolidated here. The Connecticut arm of the New York metro region will have increasing difficulty competing against New Jersey in the New York metro market without improved transportation access and population growth.

Southeast and West, changed the national pattern. The evolution of manufacturing in New England has tended toward higher value-added manufacturing requiring higher skills and producing high wages. While manufacturing employment has declined from its former size as it has in the remainder of the nation, it remains a significant component of the Connecticut economy. Connecticut's economy has a higher percentage of manufacturing than the national average. Although the percent of manufacturing in different sections of the state varies, manufacturing is a significant part of each of the state's three metro economic regions and should not be forgotten as an important component of the state's economy.

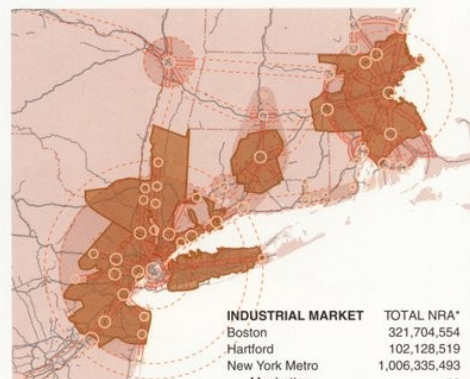
Connecticut is threatened by a lack of dynamism. Connecticut is a leader in the "new knowledge and technology based economy", yet lacks dynamism in its ability to generate new business startups. This lack of dynamism is a threat to the continued growth of the economy. With the strong concentration of educational and medical facilities including hospitals, schools and research, there is a great potential for bioscience and pharmaceuticals to be a very important component of the future economy. Business start-ups should be a major focus.

Connecticut's economic "position". Connecticut is in the center of the urban and economic structure of the New Atlantic Triangle. Recognizing that the market structure of this region does not match local and state political boundaries nor U.S. Census Bureau MSA lines is basic to developing effective economic policy and strategies. As globalization and the economic integration of North America continues, access to the international hubs and the continental grid will increasingly drive the location of economic activities. Concentrations of specialized educational and medical research institutions will continue to attract the highest value new economy functions. Gaining a larger share of the New York market and stronger access to the global and continental marketplace will be central to the continuing development of the state's economy.

Growing the economy. Metro regions can grow their economy in three ways.

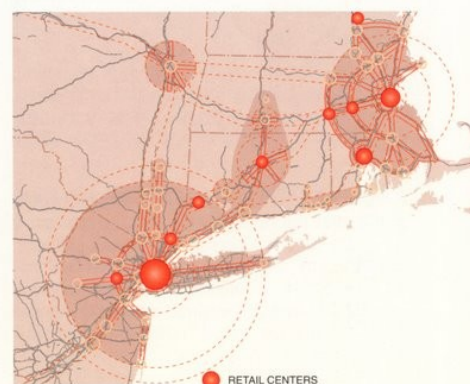
- The first and largest factor in most metro regions' economic future is the ability to sustain and grow existing economic activities. This function depends on the characteristics of the existing business structure.
- Second is the ability to generate new business startups. This growth method is highly dependent on the level and quality of the institutional structure and research capabilities (including science, engineering and medical) and the availability of capital, technical support, management and a highly skilled workforce.
- Third is the ability to attract economic activity from other locations. Businesses and institutions change location because they have outgrown their present location and are moving a part of their operations or they are looking for a better fit to changing conditions. The ability to attract new investment depends on marketing, recruitment and a combination of location factors that differ with each industry.

INDUSTRIAL



Source: Torto Wheaton Research
*Net Rentable Area

RETAIL



● RETAIL CENTERS

education

Colleges • Universities • Research

THE INSTITUTIONAL RESOURCES

The pattern of the institutional resources. The main concentrations of institutional resources in the New Atlantic Triangle are located in New York, Boston and the I-91/Connecticut River Valley corridor.

New York and Boston metro regions are the two largest educational, medical and research centers in the United States. New York has the greatest number of institutions and the largest enrollment of full and part time students. Boston, recognized as the educational center of the nation and the world, is second in terms of numbers of institutions

and enrollment.

In addition to extensive university complexes are equally extensive medical facilities in the form of hospitals, medical schools and medical research facilities. The universities in the New York and Boston metro regions include major science and math research centers. In addition, enormous private sector research centers are located throughout the two metro regions fed by the proximity of the university and medical centers and facilities.

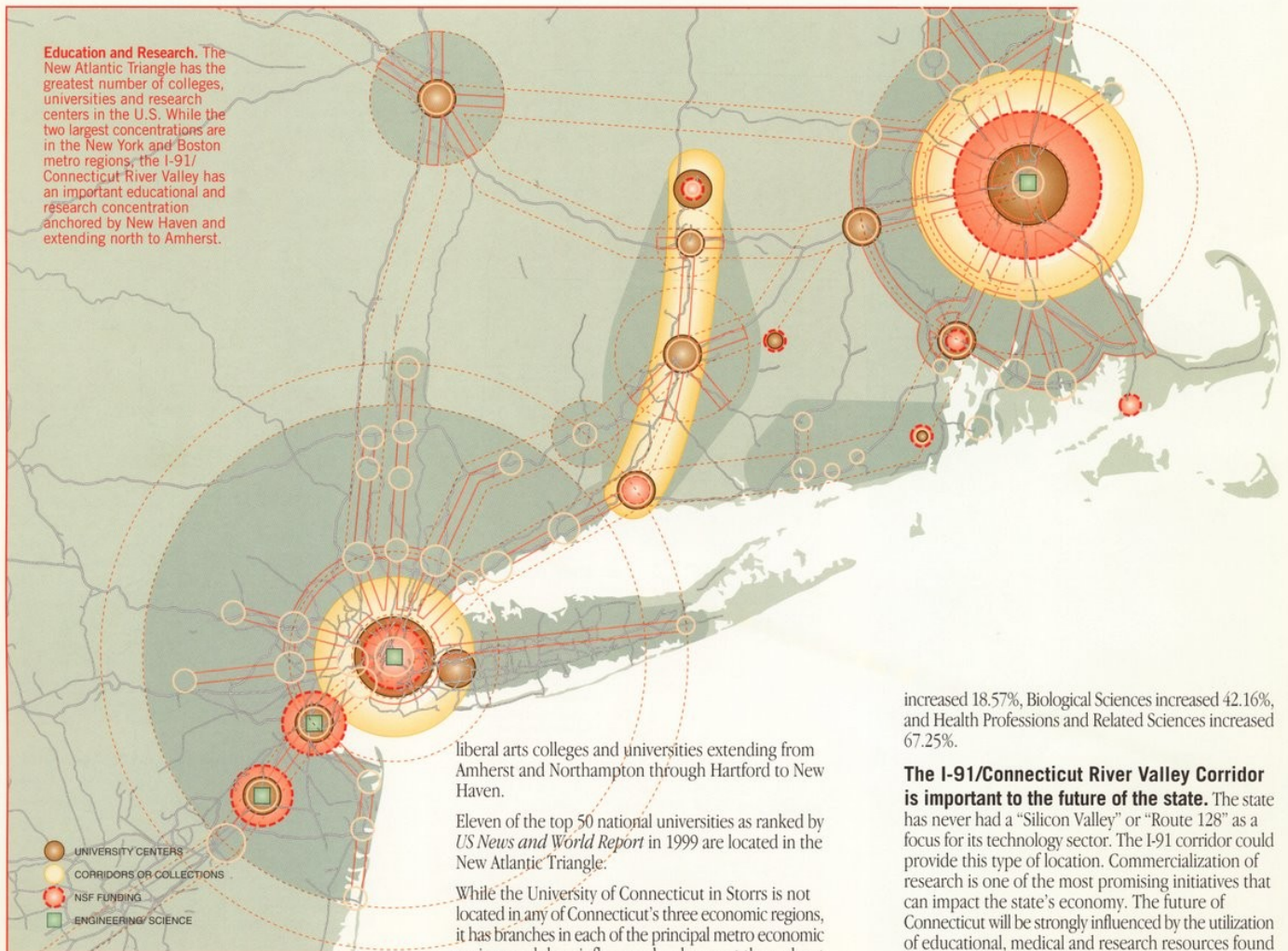
Between these two centers is the very strong I-91/Connecticut River Valley corridor concentration

with 24 institutions and a total enrollment of over 125,000 full and part time students. While the I-91/Connecticut River Valley corridor is primarily a liberal arts concentration, significant research is conducted at Yale University and the University of Connecticut. With this concentration of institutional resources, the I-91 corridor has a potential to become Connecticut's version of Silicon Valley or Boston's route 128.

The evolution and continued development of the "New Economy" is largely dependent on the resources available in large research oriented universities. Since David Packard began his first start-up in a garage

near Stanford in what was to become "Silicon Valley", new economic activities principally have been generated in close proximity to major research universities. As the New Economy takes shape, this relationship to major research institutions now includes hospitals, medical schools and private research labs. The economic future of Connecticut will be increasingly dependent on its major research universities, principally Yale and the University of Connecticut, to form the foundation necessary to grow the economy.

New Haven occupies an important position in the institutional pattern. While



Education and Research. The New Atlantic Triangle has the greatest number of colleges, universities and research centers in the U.S. While the two largest concentrations are in the New York and Boston metro regions, the I-91/Connecticut River Valley has an important educational and research concentration anchored by New Haven and extending north to Amherst.

- UNIVERSITY CENTERS
- CORRIDORS OR COLLECTIONS
- NSF FUNDING
- ENGINEERING/SCIENCE

liberal arts colleges and universities extending from Amherst and Northampton through Hartford to New Haven.

Eleven of the top 50 national universities as ranked by *US News and World Report* in 1999 are located in the New Atlantic Triangle.

While the University of Connecticut in Storrs is not located in any of Connecticut's three economic regions, it has branches in each of the principal metro economic regions and does influence development throughout the state.

A significant shift in degree granting has taken place over the last decade. The degree granting drift in the state's colleges and universities has been away from engineering and information technology in favor of more health and business-oriented programs. Between 1988 and 1997 Engineering degrees dropped 31.6%, Engineering Related Technologies dropped 33.09%, Computer and Information Sciences dropped 37.3%, and Precision Production dropped 41.3%. During this same time period Liberal Arts degrees

increased 18.57%, Biological Sciences increased 42.16%, and Health Professions and Related Sciences increased 67.25%.

The I-91/Connecticut River Valley Corridor is important to the future of the state. The state has never had a "Silicon Valley" or "Route 128" as a focus for its technology sector. The I-91 corridor could provide this type of location. Commercialization of research is one of the most promising initiatives that can impact the state's economy. The future of Connecticut will be strongly influenced by the utilization of educational, medical and research resources found in the I-91/Connecticut River Valley. However, the I-91 corridor appears isolated and difficult to access from global and continental markets. A fundamental issue is how to get these resources to world markets and how to get world markets to these resources.

The ability to create a significant impact and develop a global level of identity for the I-91 corridor will depend on a stronger relationship between the universities and colleges. These institutions will prosper by learning to work more effectively with each other, the business community and the public sector to understand and strengthen their relationships.

medical

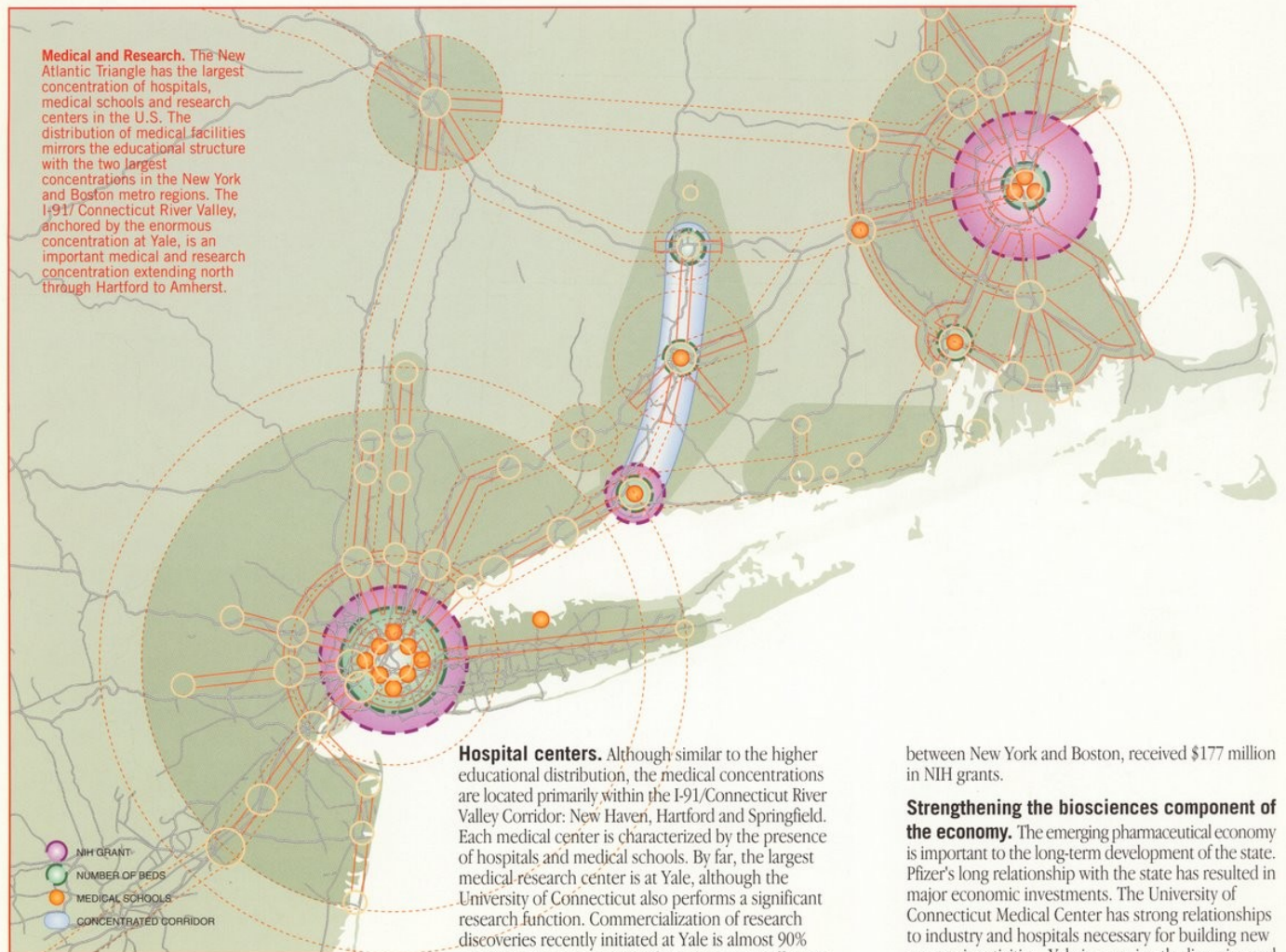
Hospitals • Medical Schools • Research

research is conducted in several university centers with important impacts on Connecticut's economic growth, Yale is the single largest and most important center in Connecticut. The commercialization of research is the foundation process for building the new economy. The institutional complex located at New Haven gives the city an important role in both the Coastal Corridor and the I-91/Connecticut River Valley corridors. In the I-91/Connecticut River Valley corridor, New Haven is the southern gateway to the institutional resources which extend north through Hartford and Springfield to Amherst. Its institutional resources are the hub and terminus

of the Coastal Corridor and should attract activity from the New York metro region. The institutional resources when combined with other urban regeneration and transportation initiatives should create the kind of magnet that can effectively attract economic activities from the New York metro region. As the terminus of the Coastal Corridor and gateway to the I-91/Connecticut River Valley, New Haven becomes central to the revival of the entire section of this Coastal Corridor beyond Stamford and the foundation block for the I-91 corridor. A healthy and dynamic New Haven is important to both of these corridors.

Connecticut's institutions require access to national and global markets. Education, medical and research institutions and facilities need access to national and global markets to remain viable in a global age. Information and research findings can be exchanged through the use of communications tools, but these tools do not fully replace the increasingly complex set of human interactions required to support cutting edge institutions. Connecticut's lack of good access to national and global markets will be a barrier to the continued growth and dynamism of its institutions.

A quality workforce is vital to Connecticut's future. Connecticut has a long tradition of quality manufacturing and innovation. In the New Economy, Connecticut's role in the global marketplace will continue to depend on a highly trained, skilled workforce. The training and preparation of this workforce will depend on coordination among institutions, business and government.



Medical and Research. The New Atlantic Triangle has the largest concentration of hospitals, medical schools and research centers in the U.S. The distribution of medical facilities mirrors the educational structure with the two largest concentrations in the New York and Boston metro regions. The I-91/Connecticut River Valley, anchored by the enormous concentration at Yale, is an important medical and research concentration extending north through Hartford to Amherst.

Hospital centers. Although similar to the higher educational distribution, the medical concentrations are located primarily within the I-91/Connecticut River Valley Corridor: New Haven, Hartford and Springfield. Each medical center is characterized by the presence of hospitals and medical schools. By far, the largest medical-research center is at Yale, although the University of Connecticut also performs a significant research function. Commercialization of research discoveries recently initiated at Yale is almost 90% medical and can have a significant long-term effect on the economic future of the state.

Medical research. Paralleling the educational structure is the medical, medical school and medical research structure of the New Atlantic Triangle. New York and Boston are the two largest concentrations of medical research in the nation. More NIH research dollars are placed in New York (approximately \$690 million in 1998) and Boston (approximately \$670 million in 1998) than any other metro region. New Haven, the largest medical research center located

between New York and Boston, received \$177 million in NIH grants.

Strengthening the biosciences component of the economy. The emerging pharmaceutical economy is important to the long-term development of the state. Pfizer's long relationship with the state has resulted in major economic investments. The University of Connecticut Medical Center has strong relationships to industry and hospitals necessary for building new economic activities. Yale is pursuing the licensing and commercialization of technologies. This is having important economic effects through the generation of new business startups in Connecticut.

The pattern of medical schools. The New Atlantic Triangle represents one of the largest concentrations of high quality medical schools in the U.S. Within the New Atlantic Triangle, New York has the largest concentration of medical schools with nine. The Boston metro has four, and the I-91/Connecticut River Valley has two including Yale University School of Medicine and the University of Connecticut Medical School at Farmington. Nine of the Top 50 Primary Care Medical Schools as ranked by US News and World Report are located in the New Atlantic Triangle.

a strategic future

The Need is Now!

This report identifies Connecticut as standing at an important juncture in its evolution as a player in the United States and world economies. The Strategic Framework demonstrates that all of New England, the eastern portion of New York state and Canada's Maritime Provinces must awaken to the significant opportunities that today's global, information-driven economy offers to those regions able to seize them as well as the dangers faced by those unable or unwilling to do so. Therefore, it is imperative that private, public and institutional leaders of this section of North America and their citizens work to exploit the collective strength of our regions and peoples and thereby maintain our historic leadership in the systems that drive a vibrant economy: education, industry, and quality of life. More specifically, the public, private and institutional organizations within this geographic sector must collaborate with greater focus and purpose to address the numerous economic issues, opportunities and challenges before us.

Within Connecticut, the Institute urges the Governor, our legislative and local political leaders, our Senators and Representatives, and the private and institutional sectors to provide the partnership and collaborative approach needed to address our economic opportunities and challenges from the perspectives of the state and the three economic regions defined in the Framework. The Institute has found that our historic approach to economic development, namely a series of aggressive but often unconnected plans and actions at multiple political levels, must be replaced by a more comprehensive and coordinated discipline to analysis, planning and execution.

The Institute specifically recommends that, as an immediate set of actions, Connecticut's leaders emphasize the following four priorities in the context of economic development initiatives:

- establish a mechanism for the state's three economic regions to develop more detailed strategies for meeting their collective economic challenges;
- adopt a multi-modal transportation strategy for the state (in conjunction with the five other New England States; New York State, and the Maritime Provinces) that ensures the movement of people and goods in a cost-competitive and environmentally responsible manner including more effective connection to the New York area markets;
- adopt a plan to increase the number of engineering and other technical degrees granted by our higher education institutions, and a plan to ensure workforce development training that allows employees to acquire the skills necessary for the state's businesses and institutions to flourish within their respective marketplaces; and
- support the commercialization of technology created through the region's institutional and private research activities.

The Institute also urges the Governor to engage the collective talent and resources of the other New England Governors, the New York governor, and the premiers of Canada's Maritime Provinces in an understanding of this framework. Those leaders should then develop an agenda that considers and acts upon those economic issues facing the New Atlantic Triangle, particularly including the increasing isolation of the area east of the Hudson River from the global network.

The Institute and each of its members look forward to working with business, civic, institutional and political leaders from around the state to discuss the Framework, the issues that it raises and the potential actions available to sustain economic prosperity for future Connecticut generations. As importantly, the Institute remains committed to serving as a forum where matters of importance to Connecticut's future economic vitality can be discussed candidly and regularly by a coalition of institutional, private and public leaders from around the state. Such sustained apolitical discussion is critical to the disciplined, strategic overview needed to preserve the state's economic leadership within this sector of North America and the rest of the world. □

Danbury and Waterbury

- Danbury and Waterbury are traditional economic centers that function somewhat independently.
- These cities need to continue to strengthen their connections to the adjacent economic regions and the global marketplace.

COASTAL CORRIDOR

- The relationship of the various cities and planning regions to each other and to the New York metropolitan area in dealing with economic issues and the need to develop a region-wide economic strategy;
- The need to energize the public, private and institutional sectors to work together;
- The competition faced by this economic region within the New York metropolitan area;
- The need to resolve the congested, locked transportation systems in the region that affect not only the region but also the remainder of the state;
- The necessity of revitalizing the cities as residential, business, and cultural and entertainment hubs, with their vital people and infrastructure resources.

■ TRADITIONAL URBAN AREAS
■ URBAN GROWTH AREAS

REGIONAL RECOMMENDATIONS

Each of the three principal economic regions in Connecticut has its own unique combination of strengths and challenges, and each needs to gather its elements together (public and private, local and regional) and develop an action agenda for its economic future. We suggest that the issues outlined below, at a minimum, be on the table at these planning sessions. In addition, the regions should work with the state on common issues including urban revitalization and transportation system issues.

I-91/CONNECTICUT RIVER VALLEY

- The importance of cross-state boundary relationships between the Hartford and Springfield areas;
- The vitality and strength of institutional resources in this region, including higher education, medical and research facilities;
- Support of the commercialization of technology by institutions and private research entities;
- The opportunity to develop as a significant transportation and logistics corridor, linking port, road, rail and air facilities into a network that can provide world class support to manufacturing, research, information and finance-based industries;
- The necessity of revitalizing the cities as residential, business and cultural and entertainment hubs, with their vital people and infrastructure resources;
- The key role of Bradley Airport as an economic engine in addition to its role in the transportation network.



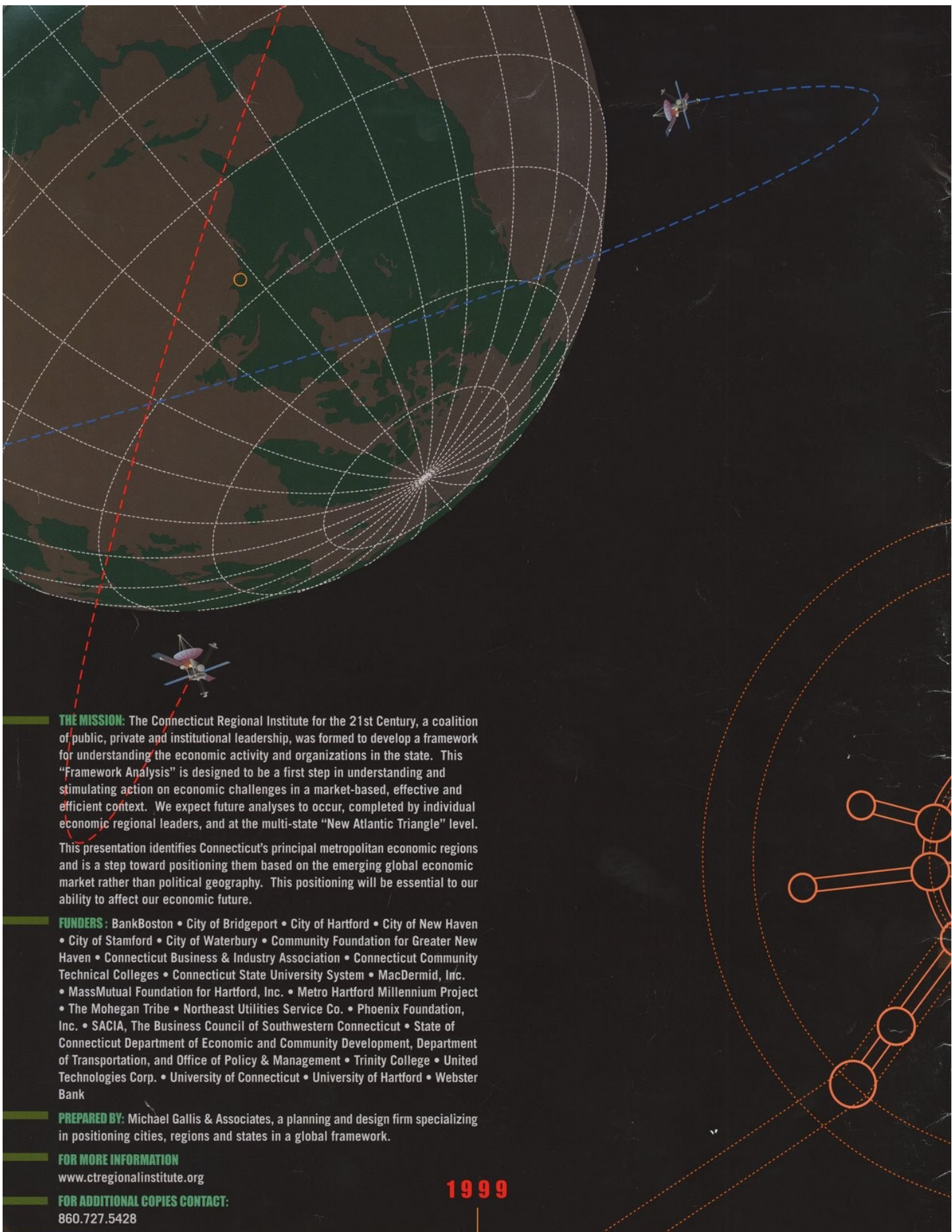
Functional Economic Regions. As a new global economy emerges, three principal economic regions define the functional economic structure of Connecticut. All are parts of multi-state metro regions. Waterbury and Danbury and the Northeast and Northwest are connected to the three principal economic regions.

SOUTHEAST CORRIDOR

- The recognition of the need for a unified economic regional identity to give visibility to the collective strengths of the entire region;
- The focus on the region's unique and special historic resources that give it significant opportunities in heritage and cultural tourism;
- The growing strength of the region in the biotech field, providing an opportunity for significant growth in a booming sector of the economy;
- The recognition and careful use of the region's natural beauty and low population density to provide a special attraction to high quality economic development that seeks areas with significant quality-of-life amenities in which to locate.



Traditional Jurisdictional Structure. Connecticut is divided into 169 municipalities, each with their own history, traditions and characteristics. The municipalities are grouped into 15 regions for planning purposes.



THE MISSION: The Connecticut Regional Institute for the 21st Century, a coalition of public, private and institutional leadership, was formed to develop a framework for understanding the economic activity and organizations in the state. This "Framework Analysis" is designed to be a first step in understanding and stimulating action on economic challenges in a market-based, effective and efficient context. We expect future analyses to occur, completed by individual economic regional leaders, and at the multi-state "New Atlantic Triangle" level.

This presentation identifies Connecticut's principal metropolitan economic regions and is a step toward positioning them based on the emerging global economic market rather than political geography. This positioning will be essential to our ability to affect our economic future.

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PREPARED BY: Michael Gallis & Associates, a planning and design firm specializing in positioning cities, regions and states in a global framework.

FOR MORE INFORMATION
www.ctregionalinstitute.org

FOR ADDITIONAL COPIES CONTACT:
860.727.5428

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