Northeast Megaregion 2050
A Common Future

November 2007
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Special Thanks:
To the spring 2005 University of Pennsylvania School of Design Northeast Studio, who wrote “Reinventing Megalopolis: The Northeast Megaregion,” which served as inspiration for this study.

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Thank You

We extend our thanks to the following institutions that supported this study and related work.

The Lincoln Institute of Land Policy
The Surdna Foundation
The Rockefeller Foundation
The Ford Foundation
The William Penn Foundation
The J.M. Kaplan Fund
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Executive Summary

The Northeast Megaregion is the densest, most richly connected network of metropolitan areas in the nation. Many of the challenges faced by its five major regions – Boston, New York, Philadelphia, Baltimore, and Washington, D.C. – are not unique to each region but derived from their common experience of geography, history, culture, and global economic change. This report makes the case for aggregating the capabilities of the Northeast states and regions to address common challenges that threaten the megaregion’s prosperity, environment and quality of life. Certain challenges – congestion and disinvestment in the Northeast’s major transportation corridors – require coordinated action to address physical pieces of infrastructure that span multiple states. Other challenges – addressing poverty and disinvestment in center cities – can benefit from common strategies and approaches to shared challenges. The assumption of the report is that the benefit of all Northeast regions working together is greater than the sum of the five regions working apart.
Some of the key messages of the report include:

1. Despite its immense wealth, productivity and concentration in highly-skilled knowledge sectors, the Northeast economy faces serious challenges. Among them is a rate of job growth that is lagging that of the U.S., a weakening position in some of the knowledge-based “supersectors,” high housing cost burdens, sharp income disparities, and a shrinking middle class.

2. The economic restructuring of the Northeast from a manufacturing to a service-based economy has left some communities without the skills or opportunities to participate fully in the economy. From 1990 – 2000 the Northeast saw a rise in absolute numbers of people in poverty, with concentrations in central cities and their surrounding suburbs. All five of the Northeast’s central cities have poverty rates higher than the national average, while the Northeast’s poverty rate is below that of the nation. Educational attainment is polarized in the Northeast, with some of the least educated and most highly educated people living in central cities. The rebounding prosperity of some of the Northeast’s leading cities, New York, Boston and Washington, for example, has contributed to rising housing costs, which are increasingly burdensome for residents across the megaregion.

3. The primary forces causing the Northeast to cohere as a megaregion are also those that threaten its quality of life – low density sprawl and ever-lengthening commutes. While the connections among the Northeast’s major regions first inspired the term “megalopolis” over forty years ago, it is only more recently that these regions have literally begun to grow together due to rapid development at the metropolitan fringe. From 1990-2000 the Northeast megaregion experienced lengthening commutes, further decentralization of jobs from central cities, and growth in the number of commuters who traveled from one metropolitan region to another on a daily basis.

4. The Northeast still has the most users of public transportation and intercity rail in the nation, supported by the greatest concentrations of jobs and housing in central places – essential to making public transportation work. However, these transportation assets have been neglected by disinvestment and deferred maintenance and require greater commitments of local, state and federal funding. Intercity rail service in particular has suffered from a lack of funding, the political misfortunes of Amtrak, and the failure of Northeast states to advance and support a strategic vision of intercity rail service as a viable alternative to air travel.

5. Governance in the Northeast is fragmented among 12 separate states and the megaregion’s political influence at the federal level has diminished since the mid-20th century. Compared to a place like California, which covers roughly the same area but is governed by one state, the Northeast requires a significant amount of coordination to tackle megaregion-scale challenges. On the flip side, the Northeast has 24 U.S. senators – a source of political strength if a common agenda can be identified.

6. The Regional Greenhouse Gas Initiative (RGGI), the I-95 Corridor Coalition, the Highlands Coalition, and other examples, are precedents for collaboration and coordination in response to megaregional challenges. RGGI, a 10-state agreement to cap-and-trade greenhouse gas emissions from power plants in the Northeast provides the most recent example of collaboration among states to address the urgent challenge of global climate change. Other examples include the I-95 Corridor Coalition, which stretches from Maine to Florida, and was instrumental in implementing E-Z Pass, and the Highlands Coalition, which supports preservation of the PA-NY-NJ-CT Highlands and has helped enact federal legislation and state legislation in New Jersey to protect this multi-state wilderness, wildlife corridor and source of drinking water for 11 million people.

7. The Northeast’s future prosperity, sustainability and quality of life are contingent on developing a shared vision for investments and action at the megaregional scale. The Northeast has a choice about its future – a dystopian vision of the megaregion that consists of continuous sprawl, long commutes, and lowered quality of life, or, an ambitious future of revitalized regions connected at their centers by high-speed rail, regional rail networks, and local public transportation. This desired vision must be accompanied by supporting land use regulations to focus growth in existing cities and suburbs and protect landscapes and watersheds. It will require visionary and courageous leadership from across the Northeast and corresponding action at state, regional and local levels of government. The result will be greater synergies among the Northeast’s regional economies, expanded opportunity for all of the region’s residents, revitalized cities and regions, higher quality of life and a lower carbon footprint.

8. To start moving in this direction, we identify several opportunities for collaborative action to address megaregion-scale challenges. They include:
   a. Enhance northeast corridor mobility, including intercity and high-speed rail, highways, airports, seaports and goods movement, with an aggressive investment strategy that moves from the municipal to the megaregional scale.
   b. Reduce greenhouse gases by positioning the Northeast for low-carbon growth with compact, infill development tied to public transportation investments.
   c. Coordinate smart growth policies across states with a “smart growth compact,” to align best practices in the Northeast and reduce the “balloon effect” of suppressing sprawl in one state, causing it to pop up in another.
   d. Support the innovation economy by creating a region-wide innovation network of universities, entrepreneurs and venture capital. Expand anchor institutions in collaboration with their surrounding neighborhoods as a center city development strategy.
   e. Preserve critical landscapes and estuaries by advancing an education and advocacy campaign for a greenbelt of protected Northeast landscapes along the Appalachian ridge that defines the limits of the megaregion’s urban core and protects its drinking water supplies.
Figure 1. Emerging Megaregions in the United States
Introduction

The Northeastern United States is the largest agglomeration of people, economic activity, and urbanized land in North America and one of the largest in the world. For centuries it has been a destination for immigrants from all over the world and an economic and cultural base for a nation with an ever-growing population and global reach. Over time, this relatively compact piece of the Atlantic seaboard—roughly 450 miles from Caroline County, Virginia to York County, Maine—has developed into something more than the sum of its cities, towns, and natural landscapes. The Northeast has become America’s foremost example of the megaregion, an emerging urban ecology that consists of a group of interconnected metropolitan regions and the natural landscapes on which they depend (Figure 1). Megaregions are already reshaping the competitive terrain of the global economy, and in coming decades their worldwide significance will place the Northeast and other U.S. megaregions in an increasingly pivotal position for the nation.

The United States is growing unlike any other industrialized nations across the world. The U.S. Census Bureau estimates that by 2050, the U.S. will grow from its current population of over 300 million people to 420 million. More than 70 percent of this growth will occur in megaregions—extended networks of metropolitan regions linked by economies, natural landscapes and systems, land use patterns, transportation networks, and culture. Megaregions are rapidly taking the place of metropolitan regions as the prime economic units of the 21st century. In a world where capital is highly mobile, having a skilled, educated workforce no longer guarantees success; the edge belongs instead to places that offer efficiency and quality of life advantages such as affordable housing, well-functioning transportation networks, connections to global markets, cultural vitality, and open space.

In Europe and East Asia, governments have recognized emerging megaregions as the key to competitiveness in the global economy. Investments in mobility, often in the form of high-speed rail networks, are perhaps the most common way in which megaregions such as Japan’s Tokaido region and London-Paris-Brussels in Western Europe have made themselves more competitive. The pace of change in the globalized world demands swift adaptation, yet the U.S. has no national strategy for growth and competitiveness. The National Committee for America 2050, composed of business and civic leaders, policy makers, and regional planners, was formed to develop such a strategy. America 2050 has identified 10 emerging U.S. megaregions as well as several “bypassed areas,” such as the High Plains, that stand to be left behind by the coming growth. An effective national strategy must address both the pressures of congestion in the megaregions and the forces of decline in bypassed areas.

That the U.S. has lagged in recognizing the importance of megaregions is somewhat incongruous, since many observers consider the Northeast the original megaregion. In his influential 1961 book Megalopolis: The Urbanized Northeastern Seaboard of the United States, the geographer Jean Gottmann identified the continuous stretch of urbanization from southern New Hampshire to northern Virginia, comprising five major metropolitan areas and tens of millions of people, as a nascent urban form. Without exceptional agricultural or natural resources, he wrote, the Northeast has grown and thrived by offering economic opportunities to massively increasing numbers of people while serving as the “economic hinge” between the growing national economy and its integration into global markets. Gottmann’s detailed analyses showed that the Megalopolis was more than metro areas that happen to be close to each other; it was defined by close relationships in commuting and land use patterns, industry clustering, goods movement, and shared environmental systems. These relationships define the Northeast to an even greater extent today.

Regional Plan Association’s 1967 report, The Region’s Growth, exchanged the name “Megalopolis” for “Atlantic Urban Region” and added its own extensive analysis and maps documenting the phenomenon. The report described the Atlantic Urban Region mostly in empirical terms as a new fact of life for planners and policymakers to reckon with. In the intervening four decades, however, the emergence of megaregions has drawn attention to the considerable advantages of networks of metropolitan regions and the ways that they can be strengthened. Critical thinking has moved from demonstrating the existence of megaregions to devising strategies for making them more competitive, principally through enhanced mobility, economic integration, and environmental sustainability.

The Northeast megaregion covers only two percent of the total land area of the United States. Yet at last count 49.5 million people, or almost 18 percent of the U.S. population, live in the Northeast and its metropolitan areas large and small generate one-fifth of the nation’s gross domestic product (GDP).1 Compared with the national average, the Northeast produces ten times more GDP per square mile.2 Such density of people and economic activity produces a complex set of circumstances and conditions, which this report breaks down into four key areas: Economy & Equity, Mobility, Environment & Land Use and Governance. Themes of interdependence run through these discussions, as in the way density and proximity reinforce the economic specializations of the five metro areas, or the landscapes that cross political boundaries and provide the megaregion with essential natural systems and open space.

The Northeast has become America’s foremost example of the megaregion, an emerging urban ecology that consists of a group of interconnected metropolitan regions and the natural landscapes on which they depend.

To compete effectively on the global playing field, the public, private, and nonprofit sectors that combine to set goals and make policy must recognize and embrace this fundamental dynamic of connectedness. The forces forming the Northeast into a megaregion have been at work for centuries, exploding into full view in the last few decades. Everyone has a stake in what comes next: creating the partnerships that will allow investment and intervention at the megaregional scale. The Northeast is already a megaregion, but what kind will be determined to a large extent by our collective actions.
Figure 2. The Northeast Megaregion
Defining Features

With each passing year, the Northeast grows more and more interconnected. The entire corridor depends on an extensive network of highways, passenger and freight rail, airports and seaports, and rapid transit systems for the movement of people and goods within the megaregion and to the nation and the world. Critical landscapes provide respite and recreational opportunities as well as the natural systems that supply clean air and water. Landscapes like the Appalachian Highlands and manmade systems like Amtrak’s Northeast Corridor and Interstate 95 share an important trait; though the latter are far less complex and delicate, they all span metropolitan regions and are therefore susceptible to the actions and growth policies of multiple local and state governments.

As the metro areas of the Northeast sprawl outward, they become less and less distinct from each other and more a part of the same urbanized mass. The rate of land consumption in the Northeast continues to accelerate, endangering natural systems like watersheds and estuaries, wiping out agricultural land and open space, and compounding congestion. Overriding trends in population growth, land use, and economic specialization, along with common threats like the high cost of housing, rising income inequalities, and climate change, affect the health and future prosperity of the entire Northeast. They are symptoms of interconnectedness, and they form the basis for much-needed collaboration in the years to come.

Defining the Northeast Megaregion

The Northeast megaregion is defined as a 142-county area, composed of the contiguous Core Based Statistical Areas stretching from the northern suburbs of Boston to the southern commuter shed of Washington, D.C. (Figure 2). RPA’s definition updates its own 1967 “Atlantic Urban Region” and is informed by the 2005 University of Pennsylvania School of Design graduate studio and a recent study of Megalopolis in the Professional Geographer. The Penn School of Design report provided a two-tiered definition of the megaregion, consisting of an “urban core” and a much larger “support zone” of farmland and forests, reaching north to the Northern Forests, west to the Appalachian Highlands, and south to the start of the Piedmont mountain range. RPA’s definition of the Northeast megaregion is mostly consistent with the Penn School of Design’s “urban core.” While it acknowledges the interrelationship among the megaregion and a larger “support zone,” this larger area is not strictly defined for the purposes of data collection. In this report unless otherwise noted, data refers to the 142-county megaregion, but in some cases RPA distinguishes data from the five major metropolitan areas of the Northeast (Boston, New York, Philadelphia, Baltimore, and Washington, D.C.), or the 12 Northeast states plus Washington, D.C., which encompass a much larger area than the megaregion.

Five Major Metro Areas

The Northeast is defined by five great cities and the metropolitan regions that have grown up around them. From north to south, Boston, New York, Philadelphia, Baltimore, and Washington, D.C. form the metropolitan armature on which the megaregion rests. These five metro areas have a combined population of over 42 million people, more than 85 percent of the total population of the Northeast megaregion. Together, they constitute the largest continuously urbanized area in the United States.

The five cities at the core of these close-knit metropolitan regions play an invaluable role in shaping the identity of the Northeast. They are economic engines, bringing together concentrations of capital, institutional expertise, entrepreneurial talent, and skilled, ambitious people from all over the country and the world. They are intellectual and cultural centers, attracting and focusing creative energies that enrich local life while resonating around the globe. Most fundamentally, the great cities of the Northeast are icons, epitomes of urban life and spectacle for the rest of the nation and powerful symbols of America to the world.

Physical Features and Support Zone

Broadly speaking, the Northeast as a geographical region owes its existence to two major physical features: the Atlantic Ocean to the east and the Appalachian Mountains to the west. In the 17th and 18th centuries, as the Northeast developed the basic pattern of urbanization that we know today, the Atlantic Coast marked the beginning of European settlement, while the Appalachians posed the first major obstacle to its westward spread.

To the north, towns and villages peter out into a broad swath of mountainous woodland known collectively as the Northern Forests. To the south, the Northeast lacks a well-defined physical edge; instead, the boundary is defined by the transition from metropolitan corridor to the largely rural South, historically distinct in its cultural and economic characteristics. Massachusetts Bay and the Chesapeake Bay, along with major rivers like the Connecticut, Hudson, Delaware, and Susquehanna, furnished the setting for early settlement and ordered the growth of population and industries in ways still evident in the present day.

The Northeast megaregion is surrounded by a larger area consisting of vast areas of agricultural land and land in a natural or semi-natural state, dotted with towns and small or mid-sized cities. The support zone includes large preserved open spaces, such as Acadia National Park and the Adirondack Park. It contains the river basins, aquifers, and forests and meadows that together supply clean drinking water to millions of Northeast residents. Its farmlands provide dependable, local supplies of food for supermarkets and groceries as well as green open spaces, and its beautiful coastlines, rolling hills, and mountain forests provide much needed respite from urban life. Taken as a whole, these areas comprise the critical landscapes that help shape and define the megaregion and supply the natural resources on which its large population depends. Their care and protection requires more than the piecemeal efforts of individual metro areas or even states. It demands concerted, coordinated action across a range of relevant issues and a multitude of jurisdictions – action, that is, on a megaregional scale.

Economic Clusters

The American Industrial Revolution, born in the Blackstone River Valley in Massachusetts and Rhode Island, made manufacturing the core of the Northeast’s economy for over a century. Today, the megaregion has a largely service-based economy, specializing in sectors such as education, health care, and professional services. One of the characteristics of the Northeast’s economy is the existence of networks of industry clusters that rely on the connectedness of the entire megaregion. One example of this tendency is the pharmaceutical sector, which has a larger presence in the Northeast than anywhere else in the world. Corporate headquarters are clustered in and around New York City and northern New Jersey, as they have been for several decades, and its industries are scattered throughout the megaregion, from the National Institutes of Health outside of Washington to Massachusetts General Hospital in Boston. Several other major sectors have followed a similar pattern of dispersal across the Northeast. They form networks focused around the five metros as...
Historical and Cultural Legacy

Much of the early history of the United States, from the first European settlements to the struggle for independence from Great Britain, took place in the Northeast. Fields and forests in Pennsylvania, Maryland, and Virginia were the scenes of climactic battles in the Civil War. Around the same time, Northeastern writers such as Dickinson and Melville and painters of the Hudson River School were inventing a national artistic culture; decades later, an African-American renaissance in Harlem would redraw the boundaries of that culture. Starting in the mid-19th century, successive waves of immigrants remade the Northeast’s cities and, later, its towns and suburbs, forever changing the nation in the process. Social reform movements like abolitionism and women’s suffrage percolated in the churches and lecture halls of the Northeast, and the Civil Rights Movement reached an apotheosis with Martin Luther King’s famous speech from the steps of the Lincoln Memorial. Major moments and movements in latter-day American culture, from Woodstock to hip hop, have emerged from the Northeast and gained cultural currency worldwide.

A dominant thread of diversity runs through this long and amazingly rich history – diversity of thought, religion, culture, and racial and ethnic identity. The Northeast’s built environment also reflects this tradition of diversity, with skyscrapers and main streets, city parks and town squares combining to yield a physical fabric that is at once unique in America and uniquely American. A wide-ranging cultural infrastructure – including world-class museums, theaters, symphonies, and other institutions – bolsters the tourist industry and enhances quality of life for the megaregion’s residents. The cultural vitality and diversity of the Northeast is a premier asset, a prime ingredient in its global brand. Flourishing arts and cultural life raises the megaregion’s profile while making it a more attractive place to live and do business.

TRANSPORTATION NETWORK

The Northeast stands out among U.S. megaregions for the extent and modal diversity of its transportation network. The Interstate 95 corridor is a main thoroughfare for the movement of people and goods up and down the megaregion, while massive pieces of infrastructure like the two Baltimore harbor tunnels, the George Washington Bridge, and Boston’s Big Dig allow millions of vehicles to pass under and over central cities and waterways. The Northeast’s major airports serve as global gateways to America while connecting the megaregion to the rest of the nation, and its many regional airports place air travel within a manageable distance of much of the urban core. Within the five metros, a mix of light rail, subways, buses, and commuter rail offers residents of cities and inner-ring suburbs more and better transit options than all but a few other metro areas in the United States.

While the Interstate Highway System reaches virtually every metro area of any size in the U.S., no other part of the country can match the passenger rail network that knits the cities of the Northeast together. Troubled though it is, Amtrak service provides crucial links between the central business districts of the five metros, smaller cities, and suburban centers. With air travel vulnerable to rising fuel prices, overtaxed airports and airspace, and security threats, and major highways like I-95 prone to debilitating congestion, intercity rail provides an important alternative travel mode in the Northeast. Unfortunately, the Northeast Corridor suffers from billions of dollars in deferred maintenance. Its fares are expensive and trains are often delayed, and its operator, Amtrak, has been plagued by mismanagement and a lack of support at the federal level.
The Northeast megaregion is one of the world’s great economic powerhouses – the fourth-largest economy in the world if it were its own nation, behind only the United States, the European Union, and Japan. It is also an incredibly efficient producer, accounting for 20 percent of the national gross domestic product, with only 18 percent of U.S. population on about 2 percent of the nation’s land area. This efficiency is characteristic of the Northeast’s incredible density and concentration of activities. In a relatively small area, the Northeast possesses an array of assets that make the sheer scale and diversity of its economy possible: its geographic position as the Atlantic gateway to North America; an incredible concentration of large, dynamic cities relatively close to each other; an extensive transportation network, both within and between metro areas; a top-flight system of colleges and universities; and culture and outdoor recreation opportunities that rival anywhere.

But while these confer advantage, they do not guarantee prosperity. Having survived the decline of manufacturing as a major part of its economic base, the Northeast faces a number of serious challenges. These include growth that lags behind the nation, a weakening position in several knowledge-based “supersectors,” and the pressing need for affordable housing near jobs and transit. There is also the story of enduring poverty, often concentrated among African-Americans and Hispanics in cities and inner-ring suburbs, and widening disparities in income. Today, these populations often lack the education needed to gain jobs in a post-industrial, knowledge-based economy, and lack access to most of the job growth, which is occurring outside of city centers and beyond the metropolitan core.

At the same time, the middle class – the vital center of a healthy economy – is shrinking. Daunting housing costs have forced many middle-income families to take on extra jobs and live farther from their workplaces, compromising their quality of life and thus the competitiveness of the Northeast megaregion. For low-income and middle-income families, the economic heft and relative wealth of the megaregion is a mixed bag. The presence of large numbers of high-income people exacerbates the affordable housing crunch by driving up prices, and goods and services tend to be more expensive as well. But the Northeast also has its advantages. Low and middle-income residents have access, at least in theory, to huge job markets in the five metro areas, with demand for all kinds of labor. They also have access to more public goods than in many other parts of the U.S. Such goods include low-cost mass transit systems, public parks, deep wells of talent in medicine and other professions, and public higher education. The challenge – besides the substantial cost of maintaining public goods – is achieving equal access to these megaregional assets, so that the benefits of living in the Northeast outweigh the costs for those on the lowest rungs of the economic ladder.

The Northeast faces a number of serious challenges, including growth that lags behind the nation, a weakening position in several knowledge-based “supersectors,” and the pressing need for affordable housing near jobs and transit.

Another indicator of the Northeast’s integration is its concentration in the sectors that comprise the knowledge-based economy. Using location quotients, RPA’s analysis of the Northeast economy reveals that the megaregion is specialized in five “supersectors”: information, financial activities, professional and business services, and education and health services, as well as the loose category of “other services.” The Northeast’s strength in these areas means

\[\text{Location Quotient} = \frac{\text{Employment in Northeast in a sector}}{\text{Employment in the United States in a sector}}\]

A location quotient of one indicates that both economies have the same percentage of their workforce employed in a given sector. A location quotient greater than one, then the economy in question is said to be “specialized” in this sector. The economic activity of the sector exceeds the level necessary to support local needs, thus exporting goods and services to other parts of the country and the world.
that the megaregion is well-positioned to benefit from the continuing national shift away from agriculture, resource extraction, and manufacturing and toward a service-centered economy. However, in two crucial supersectors, information and financial activities, the Northeast has been losing its edge over time, and in two others it has stagnated (Figure 4). At the same time, the megaregion’s degree of specialization in the other five sectors, in which its concentrations of employment are weaker than the U.S., have either declined or failed to increase appreciably. The larger picture is of an economy that is strong in the right places but is losing its edge over time, as megaregions in the South and West grow faster and trade on their own advantages, such as low cost of living and warm climates.

Complementary Specializations

Within the Northeast, the five metros have developed economic specializations, overlapping but distinct, which reinforce each other and help make the megaregional economy more than the sum of its parts. Washington, of course, specializes in the operations of government, with a host of related industries: law and lobbying firms, nonprofit policy and advocacy, and information technology. New York’s bread and butter has long been the financial services sector, including the large investment banks; its other key specializations include corporate law as well as a vast range of media and cultural enterprises. Boston is renowned for its unrivaled concentration of colleges and universities, and not surprisingly, the area is strong in medical research, especially biotech, and health care services generally. Philadelphia and Baltimore both have strengths in health care and education; in addition, Philadelphia maintains a financial services sector that serves as a lower-cost alternative to Manhattan.

Suburban areas and satellite cities also have important niches: Wilmington is a hub of credit card companies; Stamford has become a major center for financial companies and corporate headquarters; and New Haven, Connecticut and Cambridge, Massachusetts are each home to a high number of architecture and design firms. When considered in tandem with the megaregion’s compact size and multimodal transportation network, two factors that make the Northeast “smaller,” this tendency toward complementary specialization begins to look like a major advantage.

Density and Downtowns

Density and mobility are particularly important assets to the Northeast economy, because they attract businesses that depend on the ability to meet face-to-face with partners, clients, and investors, on short notice and at little expense. The dense urban fabrics of Northeast cities, with their high-profile business districts and mass transit systems, help facilitate this need by allowing intense concentrations of businesses within easy reach of each other. They also offer plenty of amenities – restaurants, nightlife, cultural activities, and professional sports, to name a few – to provide the occasion for meetings outside the conference room. CB Richard Ellis’s Office Vacancy Index provides a measure of the relative health of central business districts in the five metropolitan regions. (The index is the percentage of all space in multi-tenant office buildings that is vacant, excluding government-owned, medical, and non-competitive buildings.) For the second quarter of 2006, every Northeast CBD except Baltimore’s posted a lower vacancy rate than the national average of 12.2. Midtown Manhattan, the largest CBD in the country, and downtown Washington were both especially strong.

Strong central business districts are not the whole story, though. Like the rest of the country, the Northeast has seen white-collar jobs slowly dispersing away from CBDs into office parks and corporate campuses on the metropolitan periphery. About half of all office space in the U.S. is in the suburbs, up from a quarter 20 years ago.

The vacancy index also assesses the suburban portions of major metro areas, providing another useful basis for comparison. Suburban office vacancy rates tend to be somewhat higher than downtown rates. In mid-2006, the national average for CBDs was 2.4 percentage points lower than the suburban average. In the Northeast, however, four of the five metros (Baltimore was again the exception) had larger gaps between downtowns and suburbs than the nation. Boston and Midtown Manhattan, in particular, had discrepancies with their surrounding suburbs almost three times as large. The mostly thriving CBDs of the

Figure 4. Change in Specialization 1990 – 2004

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Less than US  More than US

Location Quotient

five metros continue to loom large over the megaregional economy as they outperform their counterparts across the U.S. But the relatively large lag of suburban office markets in the Northeast suggests that the megaregion could benefit from more and better transportation links between employment centers big and small.

**Concentrations of Poverty**

Poverty in the Northeast remains highly concentrated in urban areas, especially in mid-sized and large cities. In the first half of the 20th century, huge numbers of immigrants and African-Americans came to Northeastern cities in search of decent jobs and found them in the busy factories, docks, and other enterprises related to the industrial economy. Though many of the immigrants and their descendants rose into the middle class and left the cities in the decades after World War II, large numbers of African-Americans remained even as opportunities for upward mobility dried up along with the manufacturing base. Meanwhile, most job growth in recent decades has taken place in sectors like health care and information technology, producing jobs that require higher education and specialized skills, and in service sectors such as retail and food service, where jobs tend to be low-paying and lack benefits. The megaregion’s major cities—especially Boston, New York, and Washington—have gained high-income residents and seen housing prices soar in recent years. In the midst of this welcome prosperity are points higher than the national average, while circumstances still bleak. All five of the major cities have poverty rates seven to 10 percentage points higher than the national average, while the megaregion-wide rate of poverty comes in below the U.S. figure (Figure 5). And absolute numbers of people in poverty grew from 1990-2000, not just in central cities but their surrounding, suburbs as well (Figure 6).

The income gap between wealthier families and low and middle-income families has widened at a quickening pace since the early 2000s. At the same time, the national trend of growing income inequality seems to be accelerating faster in the Northeast than some other areas of the country. According to a joint study by the Center on Budget and Policy Priorities and the Economic Policy Institute, of the states with the biggest increases in income inequality between the top and bottom fifths from the early 1980s to the early 2000s, three out of five were in the Northeast. New York received the dubious distinction of having the biggest gap between top and bottom income levels of any state in the U.S.9 The yawning gap between rich and poor is strikingly visible in the juxtaposition of communities with vastly differing income levels, racial makeup, and quality of life. For example, in 1999, the median household income in the city of Chester, Pennsylvania (75 percent black), just southwest of Philadelphia, was $25,703. Just four miles away in the small suburb of Rose Valley (95 percent white), the median household income was nearly four and half times higher.10 Such stark divisions, and the shrinking middle they imply, undermine the Northeast’s claim to economic opportunity and social mobility. The continuing erosion of the middle class threatens the fiscal stability of cities and suburbs alike by taking away the strongest element of their tax base. From 1970 to 2000, the five metros lost middle-income families, while the number of neighborhoods with middle-income character declined even faster; the New York metro area now ranks last of the 100 largest metro areas in its proportion of middle-income families.11 Polarization of wealth could also hamper the diversity that makes large cities thrive and on which their competitive advantage at least partly depends.

**Housing**

As the five metros complete their transition from industrial powerhouses to centers of a post-industrial, knowledge-based economy, the ramifications of this shift are being felt in the crucial area of housing. The supersectors of this new Northeast economy, principally education and health care, financial activities, and professional services, reward well-educated and creative workers, who in turn stoke demand for high-quality housing in central cities, suburbs, and exurbs alike. At the same time, housing supply is stunted by the many localities that resist new development for fiscal reasons or cultural reasons. The high cost of housing can hurt companies’ ability to attract top talent to the Northeast while also pushing out people in their twenties and thirties before they put down roots. At the same time, the new Northeast economy is generating business and personal services jobs for security guards, cooks, maintenance workers, and receptionists. These low- and moderate-income workers face great challenges in finding affordable housing near their jobs. As a result, many have been forced to give up on that last requirement, and the resulting longer commutes, increased congestion, and development of greenfield land have all taken a toll on quality of life in the megaregion.12 The five major Northeast metros dominate the list of metro areas with the largest increases in home prices from 2000 to 2005. At the moment, however, housing production in the Northeast lags way behind its considerable needs. In the year from June 2005 to June 2006, the rate of permits issued for new, privately-owned housing units declined by 19 percent in the Northeast, four percentage points more than the decline nationwide. While the rate of new housing units completed across the nation rose by two percent, it sunk by a full 15 percent in the megaregion.13 Clearly, the Northeast needs more housing. But not only this: The megaregion needs housing in a range of types and affordability levels, located whenever possible near transit, and making use of existing infrastructure and vacant land in town centers and cities. An increase in the supply of housing in these places will reinforce other critical long-term needs, like preservation of critical landscapes, a more comprehensive and flexible transportation network, and entry-level housing near jobs for working families.

Across the Northeast megaregion, almost one quarter of households carry a high housing cost burden— that is, they spend more than 35 percent of their income on housing. Included in that figure are 15 percent of households who pay more than half of their income on housing. (Figure 7) Within the megaregion, the high housing cost burden is felt most acutely in the New York Region at 29 percent, and is the lowest in the Baltimore metropolitan region at 21 percent. The rate of high housing cost burden increased during the last decade, and recent studies report that the trend has accelerated since 1999, the last year for which Census data is available. In the last few years, rising housing costs have been one of the main factors driving increases in the

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**Figure 5. Poverty Rates in Northeast Cities and U.S.**

![Poverty Rates](image-url)
Figure 6. Change in Number of Persons in Poverty at 2.5 Sq. Miles From 1990 – 2000

Source: U.S. Census 1990 – 2000
amount of income necessary for a family to meet their basic needs without assistance – a measure known as the “self-sufficiency wage” or “living wage.”

As housing prices in and around center cities continue their ascent, many low- and moderate-income households are leaving cities and inner-ring suburbs and traveling farther and farther into the metropolitan periphery in search of affordable places to live. In Figure 9 the dark and light red areas on the map denote places where the percentage of middle-income households (defined here as households earning between $30,000 and $75,000) decreased during the 1990s, while green areas represent gains in this category. The map indicates that middle-income families are increasingly located outside metro areas, while the number of middle income families in central cities as well as suburbs is declining. This demonstrates an overall polarization of incomes in the cities and suburbs, with both high-income and low-income families on the rise, as middle income families are pushed further out from the metropolitan core.

A related phenomenon sees the same category of people taking on extra jobs, complicating commuting patterns and spawning mini-rush hours at times of day not previously known for traffic congestion. These twin trends mean longer commutes and more vulnerability to rising gas prices for these households as well as greater congestion and pollution for everyone.

Besides fueling sprawl, low- and middle-income households are also leaving the megaregion in large numbers. During the 1990s and again from 2000 to 2004, the Northeast had a higher rate of net domestic out-migration than any other part of the U.S.15 To a certain extent, high housing prices simply demonstrate high demand – the fact that, despite the costs, many, many people still want to live in the Northeast. Yet signs abound that young adults and families are giving up and moving to parts of the country where the cost of living, including housing, is significantly lower.16 A recent New York Times analysis of Internal Revenue Service data revealed that New York-area migration to Central Florida, once the province of retirees, has surged among young and middle-aged families.17 If Northeastern metro areas cannot create the housing options and employment opportunities to keep these families from having to live far from their jobs, or pick up and leave altogether, the cost to the megaregion’s economic competitiveness will be enormous.

Education Gaps

The Northeast is well known for its impressive array of elite universities and colleges, including all eight Ivy League institutions. This tremendous asset draws talented young people from all over the country and the world to the Northeast for higher education, many of whom choose to stay after they graduate. In elementary and secondary education, the Northeast as a whole performs better than the nation in many categories but also shares national problems. Yet there is evidence that access to quality public education may be diminishing. The Northeast has the most expensive universities and colleges in the country, and costs for both have been rising steadily, especially the cost of attending public universities.18 According to the Census, only 44 percent of African-Americans in the Northeast and 32 percent of Hispanics attend college, compared to 57 percent of whites. Northeast states mostly come out ahead of the national average for reading achievement of eighth-graders in public schools, but for most of these states the average score in central cities was considerably lower than the statewide average.19

Where pockets of entrenched poverty persist, public schools continue to struggle, and polarization into groups of people with very low and very high levels of educational attainment remains more pronounced in big cities. Consider the gap in levels of educational attainment among adults age 25 and older (Figure 8). Nationwide, the number of people without a high school diploma exceeds the number with a graduate degree of some kind by about 11 percent. A much smaller disparity, six percent, prevails across the Northeast megaregion – more evidence that the Northeast is better educated than the nation. But in the five major cities taken together, the gap between those who lack even a high school education and graduate degree holders is almost 16 percent.20

The percentage of graduate degrees in the cities is only slightly less than the Northeast as a whole, so the difference is mostly caused by much higher proportion of people without the most basic level of educational achievement. The educational polarization found in the major cities of the Northeast is not an isolated phenomenon. Rather, it is indicative of a broad range of sharp inequalities in income, housing, vulnerability to disasters, and other areas.
Figure 9. Percent Change in Middle Income Families from 1990–2000

Source: U.S. Census 1990–2000
Mobility

The vast economy of the Northeast would be unthinkable without its network of transportation infrastructure, the most extensive in North America. Urban and suburban rapid transit systems allow the five major metro areas to capitalize on the dense urban fabric that is their historical legacy. Intercity passenger rail, operated by Amtrak, connects central business districts and plays a more important role here than anywhere else on the continent. An intricate mesh of interstate highways and local expressways gives coherence to sprawling metro areas and connects them with smaller cities and natural amenities up and down the coast. A host of major airports provide global gateways as well as major hubs for travel to every part of the United States. Major seaports facilitate ever-increasing trade with the rest of the world.

If this impressive array of infrastructure, accumulated over the course of two centuries, is the Northeast's inheritance, it comes with strings attached. Much of this system urgently needs repair and upgrading just to maintain existing levels of capacity, which are themselves increasingly insufficient to handle growth in population and economic activity. More capacity is sorely needed to prevent congestion from cutting any further into the megaregion's productivity and quality of life — two factors that largely determine its international competitiveness.

To cite just one example, there were hundreds of thousands more Northeast workers in 2000 with commutes of 45 minutes or more than in 1990, while in the same period the number of commuters who spend 25 minutes or less traveling to work has declined just as precipitously (Figure 10). To take full, synergistic advantage of its many strengths, the Northeast megaregion must improve both its internal connections as well as its links with the rest of the world.

High Use of Transit

One of the more noteworthy features of the Northeast is its high reliance on public transit — a fortuitous trait, considering rising oil prices and increasing doubts about the long-term sustainability of car-dependent sprawl. Taken together, the five major metro areas account for over two billion more annual passenger miles than every other transit system in the U.S. combined. Likewise, 12 of the 20 busiest intercity train stations in the country are in the Northeast, and in 2006 9.4 million people — almost 40 percent of Amtrak’s total ridership — used Northeast Corridor service. The Northeast Corridor serves as a crucial connector along the megaregion’s spine, providing the route for intercity rail as well as commuter services such as Metro-North, SEPTA, and NJ TRANSIT. Despite high transit use relative to the rest of the country, however, only 15 percent of commuters in the 12 Northeast states and the District of Columbia use transit to get to work. As jobs move out to the suburbs, fewer are located in places accessible by transit.

Investment in public transit has a long history in the Northeast. North America’s first underground urban rail system was constructed in Boston in the 1890s, and the Baltimore-Washington Camden Line is the oldest passenger rail route in the nation. Today, the New York City subway is one of the busiest in the world, and transit agencies from Washington’s Metro to Boston’s MBTA are posting ridership gains and nurturing ambitious plans for expansion. However, all this infrastructure comes at a formidable cost. Over the next five years, the five metros alone will invest $26.4 billion just to maintain their transit systems at current levels of service. Meanwhile, Amtrak’s Northeast Corridor suffers from an estimated $5 billion in deferred maintenance: the cost of bringing the Northeast Corridor back to a “state of good repair.” Eventually, such neglect is bound to have severe consequences — witness the massive power failure in late May of 2006, which shut down service along the entire corridor and stranded thousands of passengers.

Taken together, the five major metro areas account for over two billion more annual passenger miles than every other transit system in the U.S. combined.

Overlapping Commuting Patterns

Commuting patterns offer compelling evidence that the Northeast continues to cohere, with major implications for its transportation systems. In 2000, 8.5 percent of all commuters in the Northeast megaregion crossed state lines on the way to their workplaces in other parts of the megaregion. In itself, this is nothing new: 45 years ago, Gottmann noted an increase in commuter flows that defied the classic suburb-to-city center pattern and identified this trend as a significant indicator of integration within the Megalopolis. However, in more recent years the phenomenon of commuting from one part of the Northeast to another has gathered steam. From 1990 to 2000, the number of people who worked in the Northeast megaregion but outside their metro area of residence increased by 19 percent, more than twice the rate of increase in total number of workers. As the economic integration of the Northeast proceeds apace, so will the
need for a transportation network that can accommodate the daily movement of workers across metropolitan and state boundaries.

**Highway Congestion**

While congestion is apparent in every mode of the Northeast’s transportation network, nowhere is it more acute than on the megaregion’s highways. Between 1998 and 2003, vehicle miles traveled per capita in the 12 Northeastern states plus the District of Columbia increased faster than the nation. As anyone who has experienced rush hour on Washington’s Beltway or the Long Island Expressway already knows, road congestion in the five major metropolitan areas grows more intense with each passing year. The Texas Transportation Institute’s most recent study of 85 U.S. metro areas reports that from 1993 to 2003 the five Northeast metros added an average of 15.8 hours in annual delays per traveler – more than twice the average increase nationwide.

Highway congestion also affects the movement of goods through the Northeast, where most freight is moved by truck. Projections indicate that the amount of tonnage transported by truck on Northeastern roads will jump 70 percent by the year 2020, compounding highway congestion and doing serious damage to the megaregion’s economy. Overall, the annual cost of congestion in the Northeast, in terms of travel delays and excess fuel consumed, currently stands at $14.9 billion – almost one-fourth of the total cost to the nation. If the current trend continues unabated, by 2025 highway traffic in the megaregion will have grown 86 percent from present levels, and the costs – in the form of reduced productivity, air and water pollution, and diminished quality of life – will continue to mount.

**Inadequate Rail Service**

The Northeast’s rail infrastructure constitutes one of its greatest assets and poses one of its most daunting challenges. Besides the economic cohesion and congestion relief these systems provide, their relative efficiency confers a competitive advantage on cities like New York, Boston, and Washington in a time when the costs of energy – both financial and environmental – continue to swell. Transit ridership is on the rise across the Northeast, and New York and Washington have seen record highs in recent years. By the same token, over 700,000 passengers travel on Amtrak’s Northeast Corridor every weekday, including intercity and commuter rail service.

Intercity rail connects the megaregion’s biggest employment centers, the central business districts of the five metros, and it is considerably more energy efficient than air travel. Yet the full potential of the Northeast Corridor has yet to be realized because of the persistent lack of funding to meet critical infrastructure needs and the lack of a shared vision for the Northeast Corridor by Amtrak and the Northeast states. One challenge is that Amtrak uses Northeast Corridor fare box revenues to help subsidize operations in other parts of the country. As a result, it prioritizes maximizing revenue in the Northeast Corridor over maximizing ridership. An example of this is in 2005, Amtrak effectively discouraged intercity commuting by raising the cost of its monthly fare passes 59 percent in order to increase revenues. As a result, the number of daily commuters on the Northeast Corridor fell by 20 percent.

The lofty goal of three-hour train service between Boston and New York has been articulated in various acts of Congress since 1976; 30 years on, however, it remains unmet, despite the introduction of Acela Express service in late 2000. The higher-speed Acela Express has only recently been successful in raising ridership and revenue in the Northeast Corridor; it was plagued from the start by chronic mechanical problems – the result of manufacturing defects, pressure to cut costs, and federal safety regulations that required the new trains to be twice as heavy as the French TGV. Acela Express trains can reach speeds of 150 miles per hour, but due to congestion on the tracks, unreliable power systems, and problems with the train’s tilting mechanism, they average less than half that. All Northeast Corridor service is further constrained by the fact that Amtrak must share its routes with various commuter rail services as well as a number of freight railroads. On top of all this, ticket prices are discouragingly high: A one-way trip from New York to Washington on Acela Express can cost as much as $188, around $60 more than a shuttle flight, and takes an hour and a half longer.

A lack of broad-based political support remains the crux issue preventing intercity passenger rail in the Northeast from receiving steady and adequate levels of funding. At the federal level, the Bush administration has proposed transferring responsibility for the Northeast Corridor to a multistate compact that would then hire a private firm to operate the route. Meanwhile, in 2005 the railroad’s advocates in Congress managed to have its subsidy increased from a proposed zero to $1.31 billion. Without a consensus approach, the $5 billion in deferred maintenance will remain unaddressed, with dire long-term consequences for service. The contrast with our international competitors is striking: In per capita terms, the U.S. spends less than a tenth of what the U.K. and other European countries spend on national passenger rail.

While emerging megaregions around the world develop high-speed rail networks to connect metro areas, the Northeast lags far behind.

**Overtaxed Airports**

Airports fulfill the dual function of binding the Northeast to the rest of the country while serving as key links between the U.S. and the world. Together, the Northeast’s 10 largest airports account for 15 percent of all annual passenger enplanements in the U.S. Northeast airports also play a large role in moving travelers between its major metro areas, especially for business: On an average weekday, there are now 253 direct flights between Boston, New York, and Washington.

From 1993 to 2003 the five Northeast metros added an average of 15.8 hours in annual delays per traveler – more than twice the average increase nationwide.

The Port Authority of New York and New Jersey predicts that the New York area’s three major airports will reach their capacity limits in 15 years, and talk of a fourth airport in the New York region has resurfaced. Eight Northeast airports rank in the top 30 nationwide for annual enplanements, and the rate of growth at these airports from 2001 to 2004 was almost twice the national average. When it comes to congestion, the megaregion’s share is even bigger: Seven of the 20 U.S. airports with the most arriving flight delays, including three of the top five, are in the Northeast. In response to all this growth, runway expansion projects costing billions of dollars are underway at Washington Dulles, Boston Logan, and Philadelphia, and the Federal Aviation Administration has undertaken a complete redesign of the airspace in the New York and Philadelphia areas.

At the same time, low-cost and regional carriers continue to gain market share, and with them comes an increase in the number of short-range flights (less than 500 miles). Because these flights use smaller aircraft, they
Seaports and Goods Movement

Like its airports, the Northeast’s seaports are crucial collectors of economic activity. Eighteen percent of the nation’s maritime freight passes through Northeast seaports from Portland, Maine to Baltimore; Philadelphia handles more crude oil traffic than any other port in the nation. For the megaregion to remain the nation’s premier gateway to global markets, its ports and goods movement systems must respond to the exigencies of international trade. For example, at present most Asian goods destined for the eastern U.S. are shipped across the Pacific Ocean to West Coast ports and from there by rail across the continent (the so-called “land bridge”). In recent years, though, the economics of shipping have shifted to favor trans-Suez Canal routes to Atlantic ports using a new generation of gigantic “post-Panamax” container vessels. Now, as the trend extends to include the vast amounts of shipping generated by another megaregion, China’s Pearl River Delta, it presents the Northeast with a rare opportunity to more than double its share of waterborne trade. The Port Authority of New York and New Jersey is in the midst of a 10-year, $2.3 billion dredging project to deepen marine channels so that they can accommodate superlarge vessels.

A lack of broad-based political support remains the crux issue preventing intercity passenger rail in the Northeast from receiving steady and adequate levels of funding.
Land Use Typologies

Beyond the functional and recreational dimensions of the Northeast’s relationship with its natural environment lies an even more basic factor: the use, and misuse, of land. The megalopolis’ central cities, old and densely populated by American standards, are iconic urban places, and as such they contribute to the popular perception of the Northeast as essentially metropolitan in character. The Northeast does, in fact, include the nation’s most densely populated state (New Jersey) and city (New York). Yet sprawl – a pattern of low-density, car-dependent urbanization on the edge of settled areas – is also a part of the megalopolis’ history. The nation’s first mass-produced suburb, Levittown, was born in the potato fields of Long Island, and today places like Loudon County, Virginia and Pike County in Pennsylvania are the scenes of rapid exurban growth. A 2001 report from the Brookings Institution described the situation in the Northeast thusly: “Enormous land consumption, little population growth.” According to the report, between 1982 and 1997 the Northeast urbanized an average of almost one acre for each new resident.48 In recent years, even as the megalopolis as a whole loses residents to other parts of the country, it continues to devour land at an alarming rate.

While there has been much talk recently about a rebound in urban population, a phenomenon driven by empty-nesters and young professionals moving into downtowns and inner-city neighborhoods, the combined population growth of Northeastern cities is minimal compared with growth in the other parts of metro areas and the rampant growth on the metropolitan fringe.

The graph on the following page (Figure 12) shows population change in the megalopolis’ central cities, metro areas around central cities, and non-metro (exurban) areas since 1970 and projects future growth up to 2050. If current trends hold, the ongoing revival of central cities will continue to be dwarfed by much faster growth in existing suburbs and exurbs as well as prodigious amounts of new sprawl – (the equivalent of the present population of New York City spread out across the landscape). As the population has left central cities and...
dispersed into the urban periphery, jobs have also followed, intensifying activities located outside the central cities.

An RPA analysis of land use in the Northeast provides a more detailed picture of land use conditions in the Northeast today. The densest development is found in the compact urban cores of the five metros, as well as some of the megaregion’s second- and third-tier cities. At this density, public transit of all kinds as well as walking and biking, are highly viable options. Center cities take up just one-fifth of the total land area of the Northeast (here defined as the 12 Northeast states plus Washington, D.C.) but are home to 22 percent of its total population. Inner-ring suburbs – also known as “streetcar suburbs” because many such places grew up around streetcar lines – make up the next category. Places such as Newton, Massachusetts, just outside of Boston, and Upper Darby on Philadelphia’s Main Line are dense enough to allow for transit, walking, and biking, yet at a much more modest scale than center cities. Almost a third of the megaregion’s population lives in these first-generation suburbs, which consume only two percent of its land area.

Suburban development is everywhere in the Northeast, connecting older urban centers along highway corridors and beltways. While suburbs contain roughly the same percentage of the megaregion’s population as center cities, they cover 27 times as much land. Exurbs, the newest form of urbanization, take the trend of greater and greater land consumption to another level – 12 percent of the population living on an equal percentage of the land. Like the suburbs before them, exurban development frequently takes place on formerly agricultural or forested land. Both development types are typified by a separation of land uses, with a curvilinear, disconnected residential street network of loops and cul-de-sacs; commercial development is relegated to strip malls and regional shopping centers. At suburban densities, rail transit of any kind is impractical, while bus service is usually sporadic and underused and walking and biking are purely recreational activities; in exurban communities, these traits are even more pronounced. Both suburban and exurban development patterns make the car the only viable means of personal mobility.
Environment and Land Use

Implicit in the previous section’s discussion of mobility in the Northeast is the notion that physical infrastructure must be carefully planned and, of course, built. The forests, meadows, beaches, rivers, lakes, and agricultural lands of the Northeast are widely recognized as resources, but only recently have they been recognized as a special and uniquely valuable form of non-built infrastructure. This “green infrastructure” is defined as “strategically planned and locally managed networks of protected green space with multiple purposes.” Investments in preserving and managing green infrastructure yield huge benefits. Open spaces, from national parks to urban greenways, provide places for people to enjoy the outdoors, to play and exercise, and simply to take a break from urban environments of every stripe. They make for healthier and more productive people as well as more desirable places to live and do business. Meanwhile, the natural systems contained in green infrastructure act as an incredibly sophisticated filter for the entire megaregion, cleaning the water and air more efficiently than any man-made system. Recognizing this fact, in 1997 New York City forged an agreement with upstate communities to purchase up to $250 million worth of vulnerable land to protect its Croton watershed. The alternative was to spend $6 billion on a new filtration plant.59

From Maine’s Northern Forest to the Shenandoah Valley, from the Catskills and Berkshires to Cape Cod and Assateague Island, the Northeast is fortunate to possess a diverse wealth of beautiful yet fragile natural places (Figure 13). These jewels help define the Northeast, bestowing a powerful sense of place and connecting its inhabitants with nature and with each other. RPA has identified 15 of these critical, region-shaping landscapes, which can also provide natural habitats and damages infrastructure such as bridges and sewer lines. According to NASA researchers, water quality is measurably affected when the amount of impervious surface cover in a watershed reaches 10 percent, and at 25 percent stream life begins to die off. For comparison, impervious surfaces cover between 20 and 40 percent of Baltimore and its surrounding counties.51

As the accompanying map illustrates, the Northeast is set to develop an area larger than West Virginia by 2050 – increasing demand for water while cutting deeper and deeper into the natural systems that sustain this precious resource (Figure 14). A few major river basins supply water for the entire megaregion, and their tributaries flow across municipal, country, and state lines. The Delaware River Basin covers parts of four states and furnishes drinking water for nearly 15 million people, including about seven million in and around New York City.52 Since 1970, the suburban population of the basin has grown by more than half, while overall population has increased by 15 percent.53 The river and its tributaries are plagued by concentrations of contaminants caused by urbanization, and much of the basin remains under intense development pressure. Pollution caused by sprawl also threatens natural treasures like the Chesapeake Bay, where large swaths of water have lost the oxygen needed to support fish and other wildlife. An area of the bay’s watershed equal to five times the District of Columbia was covered with impervious surfaces during the 1990s.54 The Chesapeake, like Long Island Sound, Narragansett Bay, and other major bodies of water, is crucial to quality of life in the megaregion; in good health, they make the Northeast a more desirable place to live and work.

Sprawl and Water

The Northeast has benefited from a general improvement in water quality over the last several decades, thanks in part to landmark federal legislation such as the Clean Air and Water Acts. At present, however, the natural system that cleans and regenerates the megaregion’s water supply – the streams, rivers, estuaries, and bays that make up its watersheds – is breaking down under the stress of increased urbanization. As sprawl consumes thousands of acres of former meadows, forests, and agricultural land and converts them to roads, parking lots, and roofs, watersheds lose their capacity to absorb and filter water. This massive increase in impervious surfaces has turned streams and creeks into funnels for runoff, delivering storm water tainted with toxins from brake linings, lawn fertilizers, and other sources. (A single one-acre parking lot produces 16 times more runoff than a meadow.)50 The high speed and sheer volume of these surges also degrades natural habitats and damages infrastructure such as bridges and sewer lines. According to NASA researchers, water quality is measurably affected when the amount of impervious surface cover in a watershed reaches 10 percent, and at 25 percent stream life begins to die off. For comparison, impervious surfaces cover between 20 and 40 percent of Baltimore and its surrounding counties.51

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Land and Sky

In addition to water issues, vexing problems of air and soil pollution persist in the Northeast. Particulates from coal-fired power plants can travel long distances on the wind, so that the megaregion’s air quality is determined in part by emissions from point sources both near and far. In a recent Harvard study, air pollution generated by Maryland’s six largest coal-fired plants was found to cause 700 premature deaths each year, the vast majority in other Northeastern states downwind.55 Likewise, for years tons of sulfur dioxide and nitrogen oxides from a single coal plant in Ohio ended up in Northeast skies, bringing acid rain and lethal smog. The plant produced 60 percent as much pollution as all of New York’s plants combined until 2005, when a lawsuit initiated by the attorneys general of New York, New Jersey, and Connecticut resulted in an agreement to reduce emissions substantially.56 Still, 80 percent of all counties in the megaregion are in air quality “non-
Figure 13. Critical Landscapes and Estuaries of the Northeast

Source: RPA, adapted from the Appalachian Mountain Club
Figure 14. Projected Growth of Urbanized Area 2000 – 2050

Source: RPA GIS Model, Woods and Poole County Population Projections
Effects of Climate Change

The effects of global warming are already apparent in the form of more severe weather events, such as hurricanes, and more frequent and intense heat waves. An analysis of three different climate models predicts that under the most optimistic scenario, wherein the global transition away from fossil fuels happens relatively quickly, New York City will experience a doubling or even tripling of the number of days with temperatures over 90 degrees Fahrenheit. (The historical average is 14 days per summer.) Under the scenario in which fossil fuel use is not restricted, the models predict up to 60 days of such temperatures.\(^5\) Heat waves, like the ones that caused over 700 heat-related deaths in Chicago in 1995 and nearly 15,000 in France in 2003, will become more common, more intense, and longer-lasting. At the same time, 100-year floodplains are expanding up and down the East Coast as a result of rising sea levels, increasing the likelihood that densely populated areas will be hit with catastrophic flooding during this century. Whatever the worldwide response to climate change, the Northeast will face a barrage of ill effects from a warming climate and more violent weather patterns.

Several recent reports from Northeastern universities issue dire warnings about the effects of climate change on various parts of the megaregion. Researchers at Princeton’s Woodrow Wilson School estimate that between one and three percent of the land area of New Jersey will be permanently under water by the end of this century; almost eight square miles of developed shoreline lies below the elevation that the report predicts has an even chance of being permanently inundated.\(^6\) Another study listed the effects of climate change on the Boston metro area by 2100, ranging from storms with 100-year intensity occurring every 10 years to a rise in energy use due to a doubling in the number of days over 90 degrees Fahrenheit.\(^7\)

Further complicating matters, a 2003 report by the Woods Hole Oceanographic Institution raises the possibility that while global warming is raising mean temperatures and sea levels around the world, it may actually produce a marked cooling in the Northeast by disrupting the heat-carrying Gulf Stream.\(^8\)

What seems clear is that the effects of climate change will cross jurisdiction lines, multiplying across the entire megaregion. As a result, efforts to minimize and adapt to this new and difficult reality must be megaregional in scope, or they will be inadequate. In fact, such an effort has already been launched. In December 2005, seven Northeastern states entered into a pact called the Regional Greenhouse Gas Initiative (RGGI), which aims to freeze carbon dioxide emissions from power plants at current levels through 2015 and reduce them 10 percent by 2019.\(^9\) RGGI is also designed to encourage investment in cleaner fuels and technologies by allowing plants that emit less CO\(_2\) to sell credits to those that pollute more. Soon to include 10 states, it is the first government-mandated “cap-and-trade” system in the United States, and it has drawn attention and acclaim from around the world.\(^10\) The limits the pact imposes are modest, especially considering the magnitude of the threat posed by climate change, but they provide an innovative framework for collaboration between states on issues of critical importance.

As demonstrated by the recent experience of Hurricane Katrina, natural disasters can have disproportionate impacts on those less able to protect themselves. In a recent report on social vulnerability to climate change in the Northeast, authors Cox et al. developed a methodology to better understand how the effects of climate change may have different impacts according to race, income level, and type of urban environment.\(^11\) In order to estimate which parts of the Northeast would be most exposed to effects such as flooding and heat waves, they synthesized over 40 variables grouped around key themes such as material resources, lifelines that facilitate evacuation, age, and access to information. The results can be seen in the adjacent map of socioeconomic vulnerability (Figure 15). By overlaying this map on a map of the expanded 100-year floodplain, we can see that some of the most vulnerable populations are also the ones who stand to bear the brunt of future floods. Of course, the five major cities of the Northeast – with concentrations of poverty and other vulnerability factors resembling or greater than New York’s – are all located on or near the coast.
Figure 15. Index of Social Vulnerability

- High Vulnerability (least resistance)
- Moderate
- Low Vulnerability

Source: Cox et. al. 2007
Goverance

While the Northeast has made considerable progress in the realms of economic transition, multimodal transportation, and environmental stewardship over the last few decades, its structures of governance have lagged behind. The megaregion’s cities and states face a steady ebb in their influence over critical spending decisions in Washington, along with counterproductive competition between local governments for scarce revenues and a relative lack of strong institutions to address issues of common concern. Now, as the need for cooperation on urgent issues such as sprawl, climate change, and transportation becomes ever more apparent, the Northeast has begun to develop the means to take effective action on a megaregional scale.

Declining National Political Influence

As the Northeast has lost population relative to other parts of the U.S., especially the booming South and West, its political influence at the federal level has also declined. In the 1950s, Northeastern states (not counting Maine and West Virginia, which contribute only a small part of their population to the megaregion’s urban core) accounted for 129 of 435 seats in the U.S. House of Representatives; after the 2000 census, that number was down to 100, and it will probably decrease further after 2010. (In addition, the District of Columbia has no voting representation in Congress.) The shrinking size of the Northeast’s Congressional delegations puts the megaregion at a disadvantage in the competition for federal funding for transportation infrastructure and other spending categories. Other evidence of the Northeast’s diminishing role in national politics is more anecdotal. Seven of the last 10 U.S. presidents have hailed from the South or West, while the last president to come to the White House from a Northeast state was John F. Kennedy over four decades ago. Compounding this long-term trend, in recent years the Northeast has lost clout in Congress due to the vicissitudes of party politics, a development that highlights the megaregion’s vulnerability to political shifts outside its control.

Smart Growth as Policy

Throughout the Northeast, an emergent philosophy of urban development is slowly transforming the way government deals with land use and the built environment. Confronted with the mounting costs of sprawl – road congestion, pollution, loss of open space, fiscal recklessness, to name just a few – states are reinventing traditional planning apparatus to promote principles of smart growth. In essence, smart growth accepts the desirability of growth but calls for it to be better designed and more sensibly distributed on the landscape. By channeling growth into compact, mixed-use development around transit in town centers, inner-ring suburbs, and cities, smart growth steers away from the negative impacts of sprawl while fostering more attractive and healthier communities.

Northeast states are now facing up to the challenge of putting principles into practice. In Massachusetts, former Governor Mitt Romney established the Office for Commonwealth Development to organize the work of state agencies in housing, environmental protection, transportation, and energy around smart growth goals. The new “superagency” implemented the commonwealth’s first-ever long-range transportation plan, and its smart growth zoning initiative offered financial incentives to communities that allow denser development close to transit. Several other states, such as New Jersey, Maryland, and Delaware, have created state planning offices with mandates to promote smart growth; others have policies, such as Rhode Island’s historic preservation tax credit and Maine’s Growth Management Act, that help provide the legal and financial supports for better, more efficient use of land and existing infrastructure. But all these efforts share a common limitation: Sprawl does not respect state lines, especially in the Northeast, where metro areas frequently include parts of two or more states. In order to avoid a balloon effect – push down in one place, and it pops up somewhere else – the megaregion’s various state and metropolitan planning bodies may need to pursue a more coordinated approach.

Several factors threaten to make such an approach more difficult, however. The Northeast has a tradition of home rule – the delegation of authority from states to local (e.g. county and municipal) governments, sometimes including functional powers such as land use regulation. Eight of the 12 Northeast states have home rule, and all of these use the stronger “charter” form, which allows municipalities to write their own local constitutions as long as these do not conflict with state or federal law.66 While home rule can allow strong local action to curb sprawl, as in Arlington County’s strategy of concentrating growth around Northern Virginia Metrorail stations, the fragmentation and narrow perspectives it engenders can stand in the way of addressing growth dynamics on the necessary metropolitan scale.67

Local Government and Land Use

The most pervasive consequence of this fragmentation can be seen in the troubled relationship between municipal finance and land use. Throughout the megaregion, communities of all sizes share a common problem: an over reliance on local revenue sources, especially property taxes, that promotes inequality and sprawl. Pressed for funds and desperate to reduce taxes, local governments feel compelled to pursue the kind of growth that will generate the most tax revenue. This leads to the infamous “ratables chase,” also known as fiscal zoning, wherein municipalities zone open land for commercial and high-end residential development in the hope of yielding maximum revenue with the least associated cost in services.

The new development consumes farmland and open space while increasing pressure for housing, causing the cycle to begin again. Communities compete against each other to attract fiscally desirable development, spending precious funds on incentives while adding little new activity to the larger metro area economy. They often resist the development of much-needed affordable housing for similar reasons, fearing that such housing will not bring in enough property tax revenue to pay for the schools and other services they require.68 The result of all this jostling for position, according to author Myron Orfield, is that people with the greatest need for public services are concentrated in communities that are the least able to fund those services.69 Meanwhile, wise land use decisions become a casualty of a broken system for funding local government.

Metropolitan Planning Organizations

Another layer of governance is the Northeast’s metropolitan planning organizations. MPOs, as they’re known, were created by the U.S. Congress in the early 1970s and have been strengthened by successive federal transportation acts. They act as a sort of filter for federal and state transportation dollars, with broad powers to coordinate spending for the sake of more efficient and better integrated regional transportation systems. MPOs sometimes take on other duties, such as economic development and
limited land use planning, but in general they lack the mandate to implement long-range strategies for their metro area. Some exist simply to ensure compliance with federal law, while others are much more assertive—for instance, working to transfer so-called “flexible funds” from highway construction to recreational trails or transit projects. They also suffer from a chronic inconsistency in their size and scope. Some MPOs, like the Boston Metropolitan Planning Organization and Washington’s National Capital Region Transportation Planning Board, oversee entire metro areas with millions of people and dozens of municipalities. Others, such as Connecticut’s eight MPOs, carve out relatively minor jurisdictions in places where the true metropolitan context is actually much larger—e.g., the Greater Bridgeport MPO, which falls within the New York metro area. MPOs are seriously constrained, but they do demonstrate how federal funding can be used as a carrot to encourage strategic planning on a new scale.

**Precedents for Megaregional Planning**

How do the towns, cities, counties, and states of the Northeast begin to think and act in ways that advance their common, long-term interests? If a megaregion isn’t a new level of government, then what form does it take? The answers are beginning to be visible in a range of efforts that have taken shape in the Northeast over the last few decades, picking up speed in recent years. One of the most prominent is the previously mentioned Regional Greenhouse Gas Initiative (RGGI), a cooperative agreement between ten Northeastern states to reduce the carbon dioxide emissions that cause global warming. RGGI’s proposed cap-and-trade system follows a worldwide trend toward using market-based methods to fight climate change; recently, California Governor Arnold Schwarzenegger and British Prime Minister Tony Blair announced a joint effort using market-based methods to fight climate change. Arnold Schwarzenegger and British Prime Minister Tony Blair announced a joint effort using market-based methods to fight climate change. Arnold Schwarzenegger and British Prime Minister Tony Blair announced a joint effort using market-based methods to fight climate change.

The Port Authority of New York and New Jersey offers an older, more established example of a creative response to a set of issues that transcend political boundaries. The Port Authority was formed in 1921 in recognition of the fact that regional mobility in the New York metro area, as well as the need to advance common port interests, required streamlined governance and a unified strategy. Today the Port Authority manages four bridges, two tunnels, all three major airports, seven seaport facilities, and the PATH rail transit system. The agency is building a new landmark PATH station that will anchor the redeveloped World Trade Center site, and it recently agreed to take responsibility for constructing the World Trade Center Memorial and nearby museum and visitor center. Over time the Port Authority has broadened its outlook, in recognition of the central role mobility will always play in the health of the metro area economy. Once concerned primarily with the building and maintenance of discrete pieces of infrastructure, the agency has become a leader in long-range planning for the region.

As noted earlier, the megaregion’s critical landscapes are some of its most valuable assets, and they rarely fall within a single state’s borders. The following are three examples of programs that cross state lines to protect and preserve threatened natural places in the Northeast:

- The Highlands Coalition. The Highlands are a section of the Appalachian Mountains that stretches from eastern Pennsylvania to northwestern Connecticut. Its ridges and valleys, covered with thick forests and interspersed with lakes and streams, are an oasis of natural beauty in the middle of one of the most urbanized areas on the continent. Over 11 million people rely on Highlands sources for their drinking water, and 14 million visit its parks every year. The landscape also acts as a natural greenbelt for metropolitan New York as well as an important wildlife corridor between the Berkshires and the Blue Ridge Mountains. Composed of over 150 conservation groups, the Highlands Coalition works to gain funding for land preservation while advocating regional growth management and educating communities on the importance of this remarkable resource.

- The Long Island Sound Study. Formed in 1985, the Study is a partnership between Connecticut, New York, and the U.S. Environmental Protection Agency, along with advocacy groups like Save the Sound. As an estuary, Long Island Sound is a crucial feeding, breeding, and nursery area for many ocean species; at the same time, the recreational, fishing, and maritime activities that take place in the Sound generate more than $5 billion annually for the regional economy. The Study partners have reduced nitrogen discharges into the Sound, restored hundreds of acres of wildlife habitat and dozens of miles of river migratory corridors, and sponsored many public education and cleanup efforts.

- The Chesapeake Bay Program. The Bay Program consists of Maryland, Virginia, the District of Columbia, and Pennsylvania, as well as the Chesapeake Bay Commission, the EPA, and various citizens’ groups. In addition, Chesapeake 2000, an agreement intended to guide restoration activities throughout the Bay watershed through 2010, provides for the headwater states of Delaware, New York, and West Virginia to become more involved in the partnership. The Chesapeake Bay is the largest estuary in the U.S. and receives about half of its water from a 64,000 square-mile watershed. The Bay’s water quality and habitat have been seriously degraded by various pollutants, especially nutrient pollution, and rapid development in the region has only aggravated the problem.

All of the above-mentioned relationships are somewhat improvised, forged in response to pressing challenges that demand a scope of action beyond the reach of individual state and local governments. In the process, however, they lay the groundwork for even more sophisticated and ambitious partnerships in years to come.
The Northeast has a choice about the future direction of its growth and what type of megaregion it wants to be. Current land use and travel trends are leading us toward a dystopian vision of the megaregion—one in which the boundaries between regions have blurred because of sprawled development. In this vision, commutes lengthen; air quality, water quality, and landscapes are degraded, and none of the agglomeration effects of the Northeast’s incredible concentration of economic activities are realized because of the mitigating factors of road congestion, inadequate infrastructure, high housing prices, and inefficient goods movement.

In the alternative scenario, an alliance of Northeast interests—be they governors, regional and civic leaders, or Northeast mayors—provide the leadership to secure investments in transportation infrastructure and coordinated land use policies to chart a different direction for the Northeast. In this ambitious vision, we would create capacity for a new generation of growth in the Northeast’s cities and surrounding suburbs with infill development, strengthening the vitality, diversity, and prosperity of these places. It would be accompanied by investments in public transportation and the public realm from the scale of the municipality to the megaregion. The overall effect would be a network of regions connected by a high-speed rail stations in the center cities, more frequent and expanded regional rail services, and local transit feeder networks. The strengthened urban core would be surrounded by protected landscapes and drinking water supplies, and would drastically reduce its carbon footprint. And the impact of greater redundancy, capacity, and reliability of our regional and intercity transportation networks would be to enhance communications, synergies, and commerce among the complimentary specializations of the Northeast regional economies.

But how do we get there? Expanding the Northeast’s collection of informal and ad-hoc coalitions into more permanent and formal relationships will require broad recognition on the part of states and regions of the challenges we face at the megaregional scale, in addition to continued regional coordination and smart policies at the local levels. The intent of this report is to highlight the challenges experienced at the megaregion scale and enhance our understanding of the benefits that may be gained from cooperative approaches to planning, investment, and regulation at the scale of the Northeast.

Multi-state partnerships to address megaregional issues will not arise only out of a sense of obligation to the greater good. Cooperating states must recognize the benefit of acting in partnership with their neighbors, or conversely, they must recognize the risk of not acting collectively to address issues such as traffic congestion and loss of open space. The key is to effectively convey the urgency of these issues that threaten the Northeast’s long-term economic competitiveness and quality of life. In the absence of federal leadership on many of these issues, the Northeast states have the opportunity to act proactively to secure their common future. Below we outline a selection of issues that could set in motion greater cooperation among the Northeast states.

**Northeast Corridor Mobility**

The most immediate opportunity for multi-state action in the Northeast is decongesting and improving the transportation networks that knit the megaregion together. The Northeast is choking on traffic on its interstates, in its air- and seaports and on its roads. Collective action is needed to decongest these systems, create new capacity for improved passenger and goods movement, and provide a framework for economic development for the next half century.

The benefit of investing in such a system is to create the most accessible, highly connected, and energy efficient megaregion of the country. The Northeast is uniquely positioned to reach this goal because of its existing urban density with “peaks” in the five largest cities. (Figure 16)

- Intercity Rail: The Northeast states should work together with Amtrak to improve the reliability, frequency, speed and price structure of intercity and commuter services on Amtrak’s Northeast Corridor stretching from Richmond, VA to Portland, ME. The immediate priority is to adopt multi-year funding authorization and appropriations for Amtrak in Congress, leading to a state of good repair and secure annual funding. Over the long term, the Northeast states and Amtrak should work together to develop a vision for the Northeast Corridor’s operations and capital investments, toward the goal of a world-class high-speed rail link between Washington and Boston, with connecting services to Harrisburg, Albany, Springfield, Hartford, Richmond and Portland. These investments will improve the economic competitiveness of the Northeast and help it reach greenhouse gas emissions reduction targets. Improving service on the spur lines can help promote revitalization of the Northeast’s older industrial cities and transit oriented development around station areas.
Highways: The Northeast states should work through the I-95 Corridor Coalition to create pricing, information and other systems needed to reduce traffic congestion on I-95 and other key highway corridors. The states should investigate the efficacy of creating new Truck Only Toll (TOT) lanes and High Occupancy Toll (HOT) lanes in the most congested segments of these highways and increased use of intelligent transportation systems, including the removal of toll plazas. Collaboration among Northeast metropolitan regions and their congressional representatives is also important to shape the next transportation authorization bill in Congress so that it provides the needed funding to maintain the Northeast’s mature roads, bridges, and transit systems.

Airports, Seaports and Goods Movement: The Northeast states should collaborate on measures to reduce air- and seaport congestion to move goods more efficiently and effectively. Solutions should focus on improving connections between modes, removing bottlenecks, and enhancing the landside connections to maritime ports to move logistics functions inland. Research is currently underway by the I-95 Corridor Coalition to explore the effectiveness of short sea shipping at the Northeast’s smaller coastal ports to reduce truck-based goods movement on I-95. Investments in intercity and high-speed rail will also provide an alternative to air travel for regional trips.

Reducing Greenhouse Gases

The goal of reducing the Northeast’s contribution to global climate change provides an additional motivation for promoting many of the transportation, urban planning and environmental goals described in this report. Leadership on global climate change can also be an economic competitiveness strategy: witness the burgeoning new technologies of alternative energy and the opportunity for research, development and manufacturing of these new standards and the private and public sector benefits of energy efficiency programs.

The Northeast’s existing Regional Greenhouse Gas Initiative provides a model for multi-state cooperation to reduce greenhouse gas emissions, but falls short in scope by only addressing power plant emissions. To more aggressively reduce greenhouse gases, the Northeast states should commit to reducing emissions from mobile sources, commercial, residential and government uses, in addition to more ambitious targets for reducing power plant emissions. Within the coming decades, federal policy may institute a pricing mechanism to put a greater cost on greenhouse gas emissions, whether through an expanded cap-and-trade program or a carbon tax. The Northeast megaregion will be better positioned for low-carbon growth if it makes the investments now in compact development and a robust public transportation network.

Smart Growth Compact

Several of the Northeast states already have some form of state smart growth or growth management program, designed to promote more compact land use and transit-oriented development. Most of these state systems utilize incentives to promote improved local and regional planning. To avoid the “balloon effect” described above, and to encourage more compact forms of development to meet climate goals, the governors of the Northeast states could adopt a smart growth compact, pledging to strengthen existing programs by strengthening incentives and aligning policies across states to achieve a threshold of common objectives.

One of the objectives of an interstate compact should explicitly seek to revitalize bypassed and underperforming cities and areas. Along with transportation improvements in the Northeast Corridor, coordinated land use and economic development strategies should provide new tools to create jobs and affordable housing in these places by exploiting expanded markets and new development opportunities.

Innovation Economy – Eds and Meds

The Northeast has the world’s largest concentration of world-class research universities and teaching hospitals and one of the world’s largest pools of venture capital. The Northeast states should collaborate to create region-wide innovation networks of universities, entrepreneurs and venture capitalists designed to promote innovation on its campuses, attract and retain the best talent from around the world, and to promote transfer of new technologies to companies and entrepreneurs in the Northeast.

Regional leaders are smart to recognize the contribution of “eds and meds” to their center city economies and do their best to support their development and expansion. Investments focused around these anchor institutions can help revitalize communities formerly impacted by “town and gown” divides, if done correctly and with the support of the community. The revitalization of West Philadelphia over a number of years due to concerted efforts by University of Pennsylvania in collaboration with the surrounding neighborhoods is an excellent case study for this practice.

Critical Landscapes and Estuary Conservation

The Appalachian Mountain range, which defines the natural edge of the megaregion’s urbanized areas, contains fifteen or more large ecological systems. These systems provide and protect the Northeast’s clean drinking water, clean air, and high quality of life. Only a handful of these systems are protected by effective state and federal growth management programs. The rest are threatened by suburban sprawl, waterfront and second home development. The Northeast states should commit to protecting all of these systems through effective land use planning and conservation programs. A first step is to identify and build support for a vision of critical Northeast landscapes and estuaries with an education and advocacy campaign, which may be undertaken at the beginning by a coalition of existing environmental advocacy organizations in the Northeast.

Final Thoughts

The different areas described above provide a starting point for collaboration among Northeast states, to be built into stronger and more formal partnerships. Ultimately, to compete in the national and global economy, the Northeast must pursue its comparative advantage more systematically. That advantage is derived from providing a high quality of life, being a leader in the knowledge economy, on energy and climate change issues, providing a healthy environment, and efficient, robust transportation networks surrounded by densities that can support walking and transit use. These goals, which span political boundaries, will require new partnerships and governance systems at the megaregion scale.
Endnotes


3) Ibid.


12) Regional Plan Association and Citizen's Housing and Planning Council. 2006. "Balanced Housing for a Smart Region."


23) Gathered from most recent capital plans and annual reports posted on the websites of WMATA, Maryland MTA, SEPTA, NYC Transit, and MBTA.


41) Gathered from shuttle pages of US Airways, Delta, and American Eagle websites; also included new Jet Blue service as reported in recent newspaper articles. "Flights" are one-way, city-to-city flights.


44) Oak Ridge National Laboratory Transportation Energy Data Book.


52) Delaware River Basin Commission. (www.state.nj.us/drbc/tocdrb.htm).


57) Regional Greenhouse Gas Initiative. (www.rggi.org/about.htm).


60) Rodin, Judith. 2007. T

61) The Highlands Coalition (www.highlandscoalition.org/thecoalition.htm).


63) Chesapeake Bay Program. (www.chesapeakebay.net).

America 2050

America 2050 is a national initiative to develop a framework for America’s future growth and development in face of rapid population growth, demographic change and infrastructure needs in the 21st century. A major focus of America 2050 is the emergence of megaregions – large networks of metropolitan areas, where most of the projected population growth by mid-century will take place – and how to organize governance, infrastructure investments and land use planning at this new urban scale. www.America2050.org

Regional Plan Association

Regional Plan Association (RPA) is an independent, not-for-profit regional planning organization that improves the quality of life and the economic competitiveness of the 31-county New York-New Jersey-Connecticut region through research, planning, and advocacy. For more than 80 years, RPA has been shaping transportation systems, protecting open spaces, and promoting better community design for the region’s continued growth. We anticipate the challenges the region will face in the years to come, and we mobilize the region’s civic, business, and government sectors to take action.

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