

Innovation Districts

A look at communities spurring economic development through collaboration

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for
New Jersey Future



August 2012

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Acknowledgements

I am grateful to the following people who provided their time and patience in contributing information, expertise, and resources to make this report possible:

- Chris Sturm, Senior Director of State Policy, New Jersey Future
- Elaine Clisham, Director of Communications, New Jersey Future
- Barry Bluestone, Russell B. and Andree B. Stearns Trustee Professor of Political Economy; Director of Kitty and Michael Dukakis Center for Urban and Regional Policy; Dean, School of Public Policy and Urban Affairs, Northeastern University
- Edward Bogucz, Executive Director, Syracuse Center of Excellence
- Jennifer Bradley, Fellow, Metropolitan Policy Program, Co-Director, Great Lakes Economic Initiative, Brookings Institution
- David N. Constantine, President, Ignition Consulting LLC
- Peter Fleischer, Executive Director, Empire State Future
- Linda Dickerson Hartsock, Director, Community Engagement and Economic Development, Syracuse University
- Lisa M. Hemmerle, CPA, Deputy Director for Economic Initiatives, Boston Redevelopment Authority
- David Hogenkamp, Project Manager, Empire State Future
- Angus Jennings, AICP, Director of Land Use Management, Town of Westford, MA
- Chris Jones, Vice President for Research, Regional Plan Association
- Michael Lake, Executive Director, World Class Cities Partnership
- Dan Levine, Principal, MetroCompare LLC
- Tracy Massel, Strategic Planning Department, New York City Economic Development Corporation
- Robert Puentes, Metropolitan Policy Program, Brookings Institution
- Elizabeth Schilling, Policy Manager, Smart Growth America
- Richard "Chad" Shearer, Research Analyst, Metropolitan Policy Program, Brookings Institution
- Daniel Spiess, Research Director, World Class Cities Partnership

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Executive Summary

"Innovation districts" are economic development tools that utilize partnerships with higher education institutions, businesses, and government to fuel job growth and redevelopment in targeted locations. Innovation districts are based on the premise that collaboration and productivity result from proximity, and therefore job creation and innovation can be fostered through the intentional clustering of businesses, institutions, ideas and people. Innovation districts have been adopted by a variety of host cities in order to revitalize their communities and diversify their economies.

Innovation districts offer valuable models for New Jersey, as the state seeks to attract economic growth. The first goal of the [draft New Jersey State Strategic Plan](#) is to “enhance opportunities for attraction and growth of industries of statewide and regional importance.” The plan recommends identifying specific locations for "Priority Industry Clusters" where state and local government can work with the private sector and higher education to spur growth. In this report, New Jersey Future profiles innovation districts that may offer good models for New Jersey’s Priority Industry Clusters, because they include the following elements:

- A goal of spurring job creation and innovation through investment in places and institutions.
- Formal collaboration between three kinds of partners: higher education institutions, the public sector and private enterprise.
- Geographic focus on investing in and improving a particular place that will serve as host to the innovation district. Ideally, the host location will be a city or another already-developed area with infrastructure and access to transit.
- Efforts to foster communication and collaboration, including compact, walkable design, and new or enhanced programs and institutions.
- A focus on a specific type of industry or industry cluster and/or a particular type of knowledge workers.

Through this project, we aimed to gain a greater understanding of how innovation districts function, how they originate and what results they have achieved. Existing innovation districts, though still relatively new, may provide New Jersey with novel approaches for reinvigorating its cities and improving its national competitiveness, given both the existing range of industry clusters and the presence of higher education institutions in the state.

This report profiles four innovation districts – three in the United States and one in Europe. Each district is examined based upon its public, private, and academic partnerships and the roles of each key player. The report also looks at the context of each area, including the location, presence of various kinds of infrastructure and transportation and the local economy and economic history, all of which offer insight into how the district developed.

The districts examined are:

- **22@Barcelona:** Barcelona may be the world’s best established and most well-known innovation district. Poblenou, a once dilapidated neighborhood on Barcelona’s waterfront, became the location of Barcelona’s 22@ District when the city began efforts to establish mixed-use development in the area in 2000. The city took an active role and invested €180 million (approximately \$226.8 million) in transportation and infrastructure modernization,

aiming to convert the area into a lively urban center where businesses and the community can collaborate. The majority of site development plans in the area are led by the private sector. Additionally, through partnerships with the private sector and higher education, the city has created multiple programs to increase networking. The city has aimed to establish clusters primarily in the information and computer technology (ICT), media, medical-tech, energy and design industries. As of 2010, the area holds over 7,000 companies. 22@Barcelona has been widely studied as a model strategy for economic development.

- **New York City's CornellNYC Tech Campus:** New York Mayor Bloomberg's *Applied Sciences NYC* initiative aims to establish new university campuses dedicated to applied science and engineering to create a source of talent to fuel the technology industry, while attracting more technology companies to the city. The consortium of Cornell and Technion-Israel Institute of Technology won the competition in 2011 and gained \$100 million for infrastructure and construction costs to develop the CornellNYC Tech campus on Roosevelt Island. The private sector has been minimally involved in the campus to date, with Google donating space to the campus for temporary classrooms beginning in September 2012. Further involvement is expected after the campus is completed in 2017 and anticipated spinoff development has begun in surrounding areas. Approximately 600 spinoff companies are expected to be created, generating an estimated 30,000 permanent jobs. It is unclear whether the companies' need to locate elsewhere in New York, rather than Roosevelt Island due to its small size, will have an impact on the success of the campus in spurring private sector investment.
- **Boston's Innovation District:** After transportation investments made the underutilized South Boston waterfront more accessible, businesses slowly began to move into the area, resulting in growing life-sciences and high-tech industry clusters. To accelerate that growth, the city not only encouraged mixed use development and a social networking infrastructure, but aggressively promoted the area with a communications strategy to brand the area as an "Innovation District" emphasizing a collaborative atmosphere with the motto "Work, Live, Play" to encourage community and business engagement. The city helps spread Innovation District success stories via blogs and by hosting and attending events, rather than focusing resources on large direct financial investments. Private-sector projects and partnerships support the district, encouraging startup formation. Currently, Babson College is the only university present and active in the area, though the greater Boston area is home to many universities. Since its designation in 2010, businesses have brought more than 3,000 jobs to the district. However, it's not clear the degree to which the city's initiatives have been responsible for the success of the Innovation District, since the area was already transitioning.
- **Syracuse's Connective Corridor:** Syracuse University took the lead in establishing the Connective Corridor, a two-mile strip connecting the higher education institutions in the area to downtown Syracuse. For this project, over \$40 million have been invested in transportation, transit and other smart transportation technologies to create tighter connections along the Corridor. The university aims to promote cultural tourism to enhance the living experience in Syracuse and attract more people and business into the area. Numerous related economic development efforts from the private sector support the corridor. The Connective Corridor provides a tight geographic focus for private-sector investment in Syracuse, which will hopefully help transform the area. For example, the Syracuse Technology Garden, a key partner of Syracuse University and an incubator on the

Connective Corridor, has launched more than 100 startups in five years, which have raised more than \$15 million in new capital. However, it is too early to judge the extent to which improving the cultural atmosphere and transportation will spur economic development.

Some common features occur across all of the studied innovation districts:

- Most host cities had made significant transportation and infrastructure investments, which modernized the area and increased access to and mobility within the district;
- All districts made an effort to foster collaboration among business leaders and to develop lively retail, cultural, and public spaces for residents, in a concerted attempt to attract and retain young university talent;
- Many districts (including Boston and NYC) formed in areas with a pre-existing concentration of firms in certain industries, and sought to accelerate this base, rather than starting from scratch.

However, each district also emphasizes a different key element of the definition of innovation districts, particularly in terms of partnerships and key players. For example, the CornellNYC Tech Campus features strong university and city involvement, while the private sector has played only a minimal role so far. Boston's Innovation District, on the other hand, thrives under private-sector development and spinoff projects although it lacks strong university involvement. Syracuse University has been the leader in establishing the Connective Corridor, with the city and private business as secondary partners; and while 22@Barcelona has strong university and private-sector involvement in the district, its city involvement surpasses that of the other innovation districts.

CornellNYC Tech Campus

Technion Cornell Innovation Institute



Figure 1: The proposed design of the CornellNYC Tech Campus. (Source: NYCEDC)

Project Summary

New York Mayor Michael Bloomberg named Cornell University and Technion--Israel Institute of Technology [winners of the Applied Sciences NYC initiative](#), allowing the consortium to construct the Technion Cornell Innovation Institute (TCII) on Roosevelt Island. The \$2 billion project establishes a 2 million-square-foot applied science and engineering graduate school that will encourage growth in the [technology sector based in New York](#).

Goals

The purpose of the CornellNYC Tech Campus project is to encourage and enhance the growing technology sector in New York and to stimulate economic development in the city by:

- Creating jobs and encouraging the formation of startup and spinoff companies;
- Boosting research and development by attracting new talent and breaking down barriers between academia and industry;
- Diversifying New York's economy by attracting information-technology firms to the region; and
- Fostering community involvement and New York public schools through programs and facilities provided by the university.

Timeline

Construction is scheduled to begin in 2014, with the campus opening in 2017. Classes, however, will begin in September 2012, in [donated space at an offsite location on 8th Avenue](#). By the end of 2043, [the campus is expected to hold up to 2,500 graduate students and 280 faculty members](#). Currently, community board and City Council members are involved in the [land-use approval process for the proposed campus development](#), which is expected to be completed in the fall of 2013.

Key Partners

The City

The *Applied Sciences NYC* competition, brainchild of the Bloomberg administration, aims to spur economic growth and development for New York, while invigorating the technology industry in the city. The mayor launched this initiative in the hopes that New York City would surpass Silicon Valley as the major technology hub of not only the nation, but also the world. *Applied Sciences NYC* relies on a strategy of establishing new university campuses dedicated to applied science and engineering to create a source of talent to fuel the technology industry. The new academic and industrial talent will in turn attract more information- technology companies and foster economic development in the city. The idea behind the *Applied Science NYC* initiative is characterized in this [graphic](#).

To attract proposals, the *Applied Sciences NYC* initiative offered three key assets: access to one of three city-owned sites, capital from the city, and the full support of the administration.

Seven qualifying applications were submitted from 17 institutions, including Stanford, Columbia, Carnegie Mellon and New York University.

Applications were evaluated on three criteria: economic impact and feasibility, respondent's qualifications and track record, and institutional connections to the city. Specifically, each applicant was judged on its research and development programs, its ability to encourage the formation of companies that show high potential for growth, the projected job creation and tax revenue generation from the campus, and the likelihood of diversifying New York's economy through an applied science sector.

Cornell, the winning bidder, will receive \$100 million for infrastructure and construction costs from the city, though the burden of financing the establishment will reside with Cornell. In addition to this funding provided by New York, Cornell received a \$350 million donation from alumnus Charles F. Feeney of Atlantic Philanthropies. Cornell, though it must cooperate with the city, is responsible for executing and planning the layout and development of the campus.

University Partners: Cornell and Technion

Cornell's ambitious proposal, the scale of which had appealed to the Bloomberg administration, involves eco-friendly initiatives paired with the creation of a graduate school. The plan proposes to create the largest net-zero building on the East Coast (in which the amount of energy produced will equal the amount of energy consumed) to anchor the campus. The campus will be organized around three hubs: Connective Media, Healthier Life and Built Environment. These hubs relate to different sectors of the neighboring economy and provide graduate students the opportunity to earn various master's and doctoral degrees.

Cornell's proposal also stresses community engagement: nearly 10,000 New York K-12 New York students and 200 teachers per year will have access to programming and teacher training. Students at the university will also be directly involved in local industry, as each student will be paired with not only an academic advisor but also an industry mentor, in an attempt to [transcend traditional boundaries between the academic and business communities](#).

The CornellNYC Tech Campus will also provide a \$150 million revolving financing fund from Cornell's endowment for startup companies in the city, further encouraging companies to locate into the vicinity.¹ Cornell was the only *Applied Sciences NYC* applicant to offer this venture fund, making the CornellNYC Tech Campus particularly attractive to the city.

Technion- Israel Institute of Technology, Cornell's partner in the endeavor, is the oldest university in Israel and is a leader in applied sciences--approximately 70% of its graduates are employed in the technology sector. Technion and Cornell will work together to conduct research, promote entrepreneurship, and establish a first-class applied sciences university.

Private Sector

Google donated 22,000 square feet of office space to Cornell to provide temporary space for classes beginning in September 2012, and to hasten the development of the New York technology district. Though Google will not receive any rights to any technology invented in the building, [Google has offered Cornell the option of expanding the space to 58,000 square feet.](#)

Though other businesses have not yet had any direct role in the initiative, their involvement in the campus is anticipated in further stages of the project and employees from private-sector firms are expected to be involved and work closely with students and faculty through research and entrepreneurship. Cornell's \$150 million revolving fund for startup companies is expected to jumpstart private investment.

Background

Location

Cornell has secured access to 11 acres of land on Roosevelt Island on which to develop the technology campus. The site is currently occupied by the city-owned Coler-Goldwater Hospital, which is scheduled to close in 2014. The university has leased the site located on the southern region of the island for 99 years, and will hold the option of purchasing it for \$1 when the period expires. This area will contain all academic facilities and spaces (classrooms, laboratories, community spaces, meeting rooms, etc.), housing for faculty and students, and space for private-sector partner research and development.

Transportation

Though Roosevelt Island was chosen as a location for the campus in part because of its accessibility, the projected influx of new commuters has raised transportation concerns for the future. Cornell is researching and developing plans to lessen the burden of commuting from Manhattan and Queens, and has expressed interest in a ferry service, in which the local community has also shown interest.

¹ "[Seeding the City with Entrepreneurs](#)", Technion USA, Spring 2012, pp. 6-7.

Currently, transportation to and from the Island consists of the following:

- Roosevelt Bridge, a vertical lift bridge with two traffic lanes, spans the east channel of the East River to 36th Avenue in Astoria, Queens, and is used by both pedestrians and vehicles.
- Roosevelt Island subway station (F train) connects the island to Manhattan and Queens. An "F Train Corridor" is expected to develop, as new businesses begin to locate to areas along this subway line.
- Roosevelt Island Tramway connects Roosevelt Island to Manhattan aerially, crossing the west channel of the East River. The tramway is generally the preferred method of transportation for residents and also serves as a popular tourist attraction.
- A minibus service provides transportation for people within Roosevelt Island, and MTA bus service further connects the island to Astoria, and indirectly to Manhattan.



Figure 2. "An Island Joins the Mainstream"
(Source: New York Times)

The island is generally car-free, as most people rely on public transportation. Cars, however, are not prohibited, though only short-term parking is available with a pass. Residents who own cars must park them in a parking garage, which is accessible from the vehicular bridge.

Spin-off Development

Cornell will commit space for incubators and some additional corporate space beyond that which will be used by students and faculty. However, this will not leave much room for private sector development on Roosevelt Island. The city has made necessary real estate inquiries to determine potential areas of spin-off development, though startup companies will be expected to establish and settle into locations on their own. The city anticipates that spin-off companies will locate in Long Island City (Queens), areas of Manhattan, and even areas of Brooklyn.²

Local Economy and Clusters

The city currently houses financial, media, real estate and health care industries, along with a prominent, though declining, manufacturing base. In 2010, 21.17 percent of the civilian population in New York County (which includes Manhattan, Roosevelt Island and various smaller islands) worked in the education, health, and social services industries, while 8.47 percent worked in the information industry.³ The CornellNYC Tech Campus brings the promise of further diversifying the local economy with a growing tech center. Mayor Bloomberg's interactive [Made in NY Digital Map](#) illustrates the technology boom that has already occurred in Manhattan, and some areas, such as Long Island City, are expecting spill over due to the need for

² Tracy Massel, NYCEDC, phone interview, June 2012

³ [NY County Demographics Summary](#), Real Estate Search Engine- CLR Search

cheaper space than space found in Manhattan, once the CornellNYC Tech Campus is established.

Similar Initiatives

Mayor Bloomberg has stressed the city will continue to research, and may select, other promising *Applied Sciences NYC* proposals. On April 23, 2012 New York University's proposed Applied Sciences Center was selected from the same initiative, though this second plan will not receive the \$100 million that was granted to the CornellNYC Tech Campus. The NYU plan includes the following:

- [Creation of a Center for Urban Science and Progress](#), to be located in downtown Brooklyn at 370 Jay Street, the old Metropolitan Transportation Authority headquarters building;
- Academic partnerships with Carnegie Mellon University, City University of New York, University of Toronto, University of Warwick and the Indian Institute of Technology, Bombay; and
- Private-sector partnerships with IBM and Cisco Systems Inc., which will each provide \$1million in financing per year.

Anticipated Results

The city is projecting the following economic benefits from the CornellNYC Tech Campus:

- Approximately 20,000 construction jobs and 8,000 permanent jobs are expected to result directly from the project.
- 600 spinoff companies are expected to be created, generating an estimated 30,000 more permanent jobs.
- \$7.5 billion in 2012 dollars and \$23 billion (nominal, or unadjusted rate that does not account for factors such as inflation) in economic activity is expected to be generated over three decades, with \$1.4 billion (nominal) in tax revenues.

Distinguishing Features

- **Strong university involvement:** Though the CornellNYC Tech Campus received funding from the city, this has largely been a university effort to design and maintain a campus that encourages connections with the business community. Students are expected to work closely with tech companies, and research and development facilities created by the university will be accessible to the private sector.
- **The *Applied Sciences NYC* competition:** Mayor Bloomberg's unique initiative outlined specific goals the city wished to achieve, and then allowed applicants to propose plans that would best meet those goals. This initiative not only encouraged collaborative planning efforts between universities, but forced higher education institutions to explore ways to also engage the private sector in NYC.
- **Tech-sector focus:** The *Applied Sciences NYC* competition explicitly stated the city's desire to diversify the city's economy by growing its technology sector, which is small compared to its financial and media industries.

Critical Questions

- Will the campus have the desired spill-over effect the university and city are anticipating?
- Given the small size of Roosevelt Island, where the campus will be located, spin-off companies will need to find space elsewhere in the city. Will this dilute the anticipated impact of the campus as the heart of an innovation district?

Boston's Innovation District



Figure 3: A rendering of the Innovation District along the South Boston waterfront (Source: Seaport District)

Project Summary

Launched by Mayor Thomas Menino in January 2010, Boston's Innovation District fosters business collaboration and entrepreneurship, in order to drive redevelopment and job growth among life sciences and other high tech industries. Inspired by [Barcelona's 22@](#) initiative, the Innovation District aims first to create an environment in which industries can thrive, and then to allow businesses to aggregate on their own. After transportation investments made the underutilized South Boston waterfront more accessible, businesses slowly began to move into the area. Then the city designated the 1,000-acre Innovation District to accelerate growth via public relations efforts, partnerships, and demonstration projects. Now, the district has become an area bustling with entrepreneurial startups and other notable firms. Since its inception in 2010, [100 new companies have brought over 3,000 jobs into the Innovation District.](#)

Goals

The purpose of the Innovation District is [to create an environment and an atmosphere in which entrepreneurs can "work, live, and play,"](#) thereby promoting collaboration and consequentially fueling economic development and job growth. In short, the idea is to create an "urban lab," where the landscape will encourage testing new technologies and will foster community and business engagement. Each aspect of the district's motto describes key components intended to make the Innovation District a success:

- **Work:** The city aims to cluster firms tightly so both small and large businesses intermingle, fueling job growth and productivity, and attracting and retaining talent from surrounding universities.
- **Live:** The city wants to provide flexible housing options for entrepreneurs who live active lifestyles. Working closely with developers, the city seeks to provide affordable housing options, particularly compact apartments, to cater to young people who spend more time "out and about" than at home.
- **Play:** The city has spurred investments in transportation and infrastructure to provide public collaborative space where entrepreneurs can share ideas, form partnerships, and attend programs. Additionally, the city has promoted the development of restaurants, retail stores,

parks, and marinas around the Innovation District and its waterfront, to provide workers and residents opportunities for recreation and a scenic view of the harbor.

Key Players

The City

The Menino administration and the Boston Redevelopment Authority (BRA) have played a key role in the development of the Innovation District.

The city has taken the forefront in public relations and communication efforts by publishing blog posts, running marketing campaigns, and hosting and attending publicity events. Spreading the word about the status of the Innovation District and the successes of particular firms has helped to attract involvement by businesses, nonprofits, and universities.

The city also provides support through the BRA, which plays a role in planning and zoning, encourages economic development projects (through financial means when necessary), and establishes incubator and networking sites. City incentives, provided through the BRA, include providing space rent-free or discounted, and providing loans.⁴ The majority of the land in the Innovation District is privately owned, thus the city is not responsible for its development. [The city, through the BRA, does negotiate and work with private-sector developers to ensure they will incorporate "innovative" components that will attract entrepreneurs and startups.](#)

Two such examples of how the city shaped private development are the Innovation Center and InnoHousing. The Innovation Center is a \$5.5-million venture from developers Boston Global Investors and Morgan Stanley that will create a hub for entrepreneurs to share ideas and host programs and special events. The 12,000-square-foot networking center will not only provide meeting and event space, but [will also provide training and mentorship programs for entrepreneurs.](#) The BRA negotiated for the Innovation Center's inclusion in the Innovation District's Seaport Square mixed-development project, aiding [the city's transformation into an "urban lab."](#)



Figure 4: Proposed design of the Innovation Center (Source: BRA)

The city's InnoHousing concept takes advantage of a growing demand for compact living by creating residential developments of 480 square feet or less. Catering to young people and to people who work long hours and solely need a place sleep at night, these small, affordable apartments provide their residents with the opportunity to be close to work, restaurants, and

⁴ "Boston Innovation District," [Michigan's Urban and Metropolitan Strategy](#), Public Sector Consultants and Brookings Institution, undated, p. 41.

retail. The city has mandated at least 15 percent of any residential development in the Innovation District must be InnoHousing units.⁵

The BRA has published an interactive [map](#) with a list, and the statuses, of all development projects in the area.

University Partners

[Babson College](#) is the only university presence so far in the Innovation District, having established the 3,500-square-foot F.W. Olin Graduate School in the district in the fall of 2011. Along with offering MBA courses in a location that is convenient for many of the Innovation District's entrepreneurs, the university will pool resources with organizations and businesses in the Innovation District. Furthermore, Babson hosts events for the city and is attempting to expand networking options for its students through partnerships with Boston World Partnerships and Fort Point Channel Business Association.

Private Sector

Even prior to the development of the Innovation District, Boston was home to a growing life-sciences industry, some of which had already moved to the South Boston waterfront. When the Innovation District was launched, this base helped attract more businesses to the area with the promise of partnerships and other collaborative efforts. A list of the companies that have moved into the Innovation District can be seen on a [business map](#) published by the City of Boston.

Vertex Pharmaceuticals is one example of a business relocating to the district. [Vertex is creating a 1.1 million-square-foot global headquarters in the Fan Pier neighborhood](#) of the Innovation District. This initiative has not only attracted other life-sciences companies, but has also been the impetus behind a three-year, \$1.5-million collaboration with Boston Public Schools. Vertex will enhance science education in South Boston by [providing 3,000 square feet of teaching-laboratory space staffed by Vertex employees](#); high school internship opportunities; university scholarships; and teacher-researcher fellowship programs.

The state has also played a role in aiding private-sector development projects through funding incentives. It provided Vertex with \$10 million in tax breaks for its move to Boston, in exchange for the company creating 500 additional full-time jobs; however, [if the company fails to meet that goal it will lose its tax breaks](#).

⁵ Lisa Hemmerle, BRA, phone interview July 2012

Partnerships

A variety of private and nonprofit partners have fostered new business formation in the Innovation District, including:

- **Spencer Trask Collaborative Innovations (STCI):** STCI, a network of private investors, formed an Open City Partnership with the city in 2010, in which [both parties agreed to create a platform to generate ideas and encourage innovation in both the public and private sectors](#). Through the [2010 "Welcome Home Challenge"](#), STCI funded a \$25,000 competition for startups to move or expand into the Innovation District. Businesses competed by promoting their businesses or business plans on web-based forums; then entrepreneurs, organizations, stakeholders, and the general public voted on which proposal would fit best in the Innovation District. Ultimately, My Life List, an online community providing social networking tools, won the \$25,000 prize.
- **MassChallenge:** This business accelerator was initially enticed to locate in the Innovation District by the city's offer of free Class-A office space, and now the entrepreneurial accelerator program is attracting other startups to the area. Using funding from state government and private firms, MassChallenge hosts competitions and programs that award free office space and funds to start-up firms.

Background

Demographics

The BRA has published an interactive [map](#) detailing statistics for Boston's population of more than 645,000 people. Known as a hub for colleges, Boston attracts a large student population and has seen large numbers of young people move into the city permanently. There has been a noticeable shift in the population composition from larger family households to non-family households. In 2008, 40 percent of households were single-person households. Additionally, Boston boasts the fifth most educated population among 30 of the largest cities in the U.S.A. In 2008, 41.3 percent of the adult population held at least a bachelor's degree. (Seattle had the most educated population in the country, with 53.7 percent of the population holding at least a bachelor's degree.) A list of the most educated cities can be viewed in a [report](#) published by the BRA. This supply of young talent is appealing to the city and to the private sector, as it is expected to fuel startups and other new companies in the Innovation District.

Location

The Innovation District consists of 1,000 acres of underdeveloped land. It was initially targeted for the South Boston waterfront because of the area's already-transitioning status. After the "Big Dig," a road infrastructure project that was completed in 2007, the city had an extensive highway system that connected its waterfront to Interstate 93, Logan Airport, and the Massachusetts Turnpike, thus setting the stage for redevelopment. With hotels and restaurants rising along the seaport, the area showed early signs of growth, though [prior to the Innovation District designation the area was vacant and filled with brownfields](#). There was also already a slow influx of businesses, particularly in the life-sciences, biotech, and clean tech sectors, into the vicinity from neighboring areas, thereby showing the city that the waterfront had potential to develop into a strong economic district.



Figure 5: A view of the South Boston waterfront before development of the Innovation District (Source: ECPA Urban Planning Initiative)

Residential Development

Residential development is a large component of the Innovation District, since the city has expressed a desire to provide entrepreneurs with homes close to their workplaces on the waterfront. Since 2010 the BRA's approved development projects with residential components have included Seaport Square and Fan Pier. Seaport Square is a "sustainable" neighborhood with cultural, civic, retail, and business space, and Fan Pier is a development that contains affordable housing and office space. However, with the increase in development, rents, which were initially some of the lowest in Boston prior to the creation of the Innovation District, have also increased in certain areas of the waterfront.

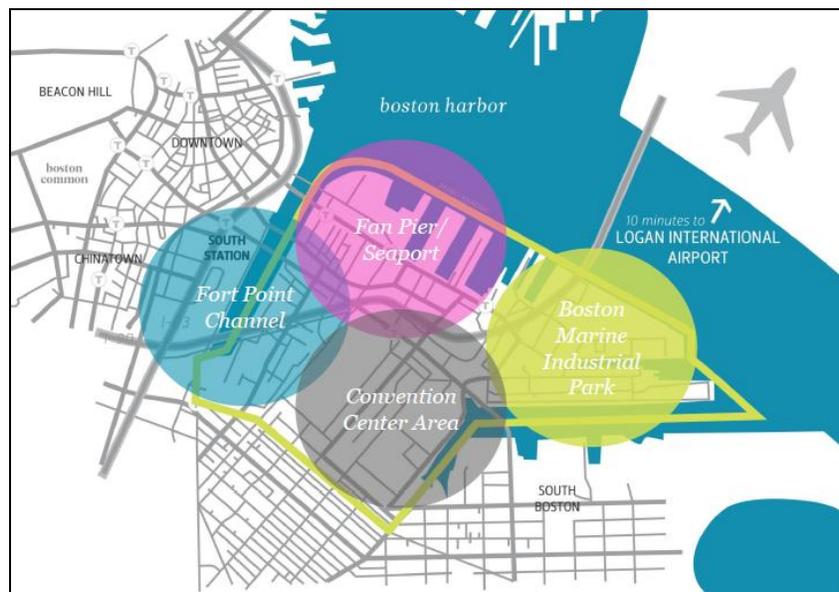


Figure 6: Major sections of the Innovation District. Seaport Square and Fan Pier lie in the pink region of the map (Source: Innovation District)

Transportation

The South Boston waterfront location was chosen for the Innovation District in part because of its transportation connectivity, which offers access to air, sea, road, and railway, including:

- **Logan International Airport:** Located in East Boston across the harbor from the South Boston waterfront, the airport is easily accessible from the Silver Line of the MBTA's subway system.
- **The Massachusetts Bay Transportation Authority (MBTA) Subway:** The "T" has five lines across Boston, with the Silver Line serving the Innovation District. From the opening of the Innovation District through 2011, [Silver Line ridership was up 7 percent on weekdays and 70 percent on Saturdays.](#)
- **Boat system:** Water taxis provide on-demand services from Logan International Airport and points on the waterfront. The MBTA also has several ferry routes on Boston Harbor.
- **Roadways:** The "Big Dig" restructured the highway system, which improved automobile access to the South Boston waterfront.

Local Economy/ Clusters

In the past half-century Boston's economy has shifted from its manufacturing origins to a professional service economy. The city has developed a strong financial services industry, including consulting and insurance firms; a strong education industry with 35 colleges, universities, and community colleges located in the vicinity; and most

recently a strong life-sciences cluster. In 2004, [Massachusetts General Hospital and Fidelity Investments were the largest private employers in the city.](#) The biotechnology sector has developed into a major hub in Boston, and [as of 2009 Boston remained at the forefront in the life-sciences industry in the country.](#) In fact, [over the past 17 years, Boston obtained more grant money from the National Institutes of Health than any other city, accumulating a total of \\$23.8 billion during that time.](#)



Figure 7: A small sample of the life science companies in the Innovation District (Source: Innovation District)

Results

- Since its designation in 2010, businesses have brought more than 3,000 jobs to the district.
- More than 100 companies have moved to the area.
- The [International BIO Convention](#) took place June 18-21, 2012 at the Boston Convention and Exhibition Center in the Innovation District. The convention included tours of Vertex's development and the Innovation Center, recruitment events, meetings between the mayor and business leaders, and the groundbreaking of Longwood Center, which will provide research and development space.

Distinguishing Features

- **Place-making and Lifestyle Strategy:** The city's investments are focused on creating an attractive, fertile environment for entrepreneurs, rather than on traditional direct economic development subsidies. The premise behind the Innovation District is that if the environment is attractive enough, businesses and knowledge workers will come to it.
- **Building on Strengths:** Prior to the Innovation District's designation, businesses were already beginning to cluster on the waterfront, thanks to dramatically improved accessibility provided by the "Big Dig" highway project. The city built on existing infrastructure investment and business activity, rather than trying to start from scratch.
- **Investing in "creating a buzz:"** Rather than making large investments in individual projects in the Innovation District, the city focused on attracting businesses by spreading Innovation District success stories via blogs, and by hosting and attending events; in addition to working closely with the private sector to encourage development, and establishing a social networking infrastructure.

Critical Questions

- Since this area was already in the process of transitioning, how much of an impact do the city's efforts have in accelerating investment in the Innovation District? What role do the considerable marketing and public relations efforts play in the success of the Innovation District?
- Do networking centers and public spaces have a measurable effect in spurring collaboration and aiding businesses?

22@Barcelona



Figure 8: An aerial view of the 22@Barcelona district (Source: 22@Barcelona)

Project Summary

In 2000, Barcelona began to transform its dilapidated waterfront district into a knowledge hub through a real estate redevelopment effort that started with rezoning the entire district and providing infrastructure investments to create physical improvements to better the atmosphere of the district. Additionally, the city focused on developing five key clusters in the information and computer technology (ICT), media, medical-tech, energy, and design industries. The result was 22@Barcelona, [an area that by 2010 held 7,000 companies, businesses, and shops](#). The city continues to promote programs encouraging growth and collaboration throughout the district. Now, 22@Barcelona serves as a model for urban design and planning for multiple cities around the world, including those in the United States.

Goals

From 22@Barcelona's inception, the city sought to [convert the area into a lively urban center where workers would not be confined to their corporate campuses](#), but would be more engaged in their community. The city's main priorities, as described by titles coined by the district, for this project are:

- **Urban refurbishment:** Redesign the dilapidated industrial land into a mixed-use area, with a diverse environment of research and development facilities, networking centers, green space, production centers, and housing.
- **Economic revitalization:** Establish clusters of industry, primarily in the information and computer technology (ICT), media, medical-tech, energy, and design industries.
- **Social revitalization:** Create an appealing business atmosphere not restricted to the local community, but that also extends to the international community, and that fosters collaboration among companies, universities, and cultural institutions.

Key Players

The City

The city sought to transform the obsolete industrial neighborhood of Poblenou through redevelopment efforts that would establish mixed-use developments. In 2000, the city approved a new urban planning ordinance that reclassified the district from the original 22a industrial zone to the new 22@ Barcelona. This [rezoning allowed for more construction](#), including public spaces, green areas and subsidized housing for young entrepreneurs, in addition to offices and business facilities.

In order to make the neighborhood more welcoming, the city understood it needed space on which it could build appealing collaboration sites, public spaces, and houses. The majority of the industrial land in the area was privately owned, so a zoning policy had been created for these areas, which were largely obsolete and abandoned, and were areas where the city anticipated redevelopment could occur. The policy allowed private landowners to exchange land for air rights, and thus increase their property values. The city mandated that 30 percent of the land would be donated to the district, and in exchange, the landowners could "build up"--that is, rebuild with a greater number of stories than the original structures had. Thus, though owners lose physical land, they retain their original property square footage.⁶ The goal was to provide incentives for landowners to update their properties, while aiding the city's redevelopment plans.

Currently, the city-owned Barcelona Activa has been aiding development in the innovation district. The local development agency uses government funds to invest in the local economy, and [matches the plans of entrepreneurs to the city's economic development goals to ensure success for both groups](#). Barcelona Activa not only has a role in the strategic planning of the district, but also provides businesses access to online resources to start up and grow, in addition to basic training for entrepreneurs. InnoActiva, a program sponsored by Barcelona Activa, aims to [increase access to public finance for research and development projects](#), particularly for small and medium sized companies.

A series of programs has also been established in the district, ranging from those that provide support for businesses to [those that aid the local community](#). 22@Plus, for example, is a group of programs and initiatives that provide businesses in the district with promotion services, networking, public financing, and [aid in finding proper space and facilities](#). These incentives have helped attract companies and startups.

University Partners

A number of [large Catalan universities were already located in the district](#), and others have relocated there, including Campus de la Comunicació de la Universitat Pompeu Fabra and the Universitat Oberta de Catalunya. Numerous training and research and development centers have been created with the aid of the higher education institutions, and many private development projects have been implemented by the universities. There are currently 10 universities and 12 research and development centers in the district.⁷

⁶ Michael Lake, World Class Cities Partnership, phone interview July 2012

⁷ ["22@Barcelona, the Innovation District,"](#) 22@ Barcelona, undated, p. 41.

Created by the district, the 22@Staying in Company program employs and provides internships for students from nearby universities, in order to attract and retain talent and maintain an educated knowledge base. This talent pool is not restricted to Barcelona. For example in a collaborative effort between the district and the Barcelona Chamber of Commerce, Industry, and Sailing, the MIT-Spain program from 22@Staying in Company helped companies in the district attract MIT graduates and postgraduates. Other programs from the initiative are not university-specific, but help companies attract graduates in particular industries or with specific degrees. Specifically, the 22@FP, a section of the 22@Staying in Company program, is a collaborative effort with training centers in the district to provide companies with students from professional training centers.

In 2008, in 19 percent of the companies in the district, over 75 percent of the employees were university graduates, and in 31 percent of the companies, at least 50 percent of employees were recent graduates.⁸

Private Sector

Many companies have collaborated with the city to promote specific projects and developments. The private sector has contributed €45 million of investment in the district's infrastructure, and [a majority of site development plans \(78 of 117\) are led by the private sector](#).

Business leaders and volunteers work together to improve the district, [with support from the city and other public sources](#):

- The **22@Network**, which currently has 66 companies as members, aims to increase competitiveness and the globalization of the businesses in the district.
- The **22@Update Breakfast** brings business leaders together monthly to share ideas and collaborate on projects. Taking place at different headquarters every month, the breakfast provides not only networking connections, but also a look at what firms have undertaken and at their facilities. The European Union co-funds this program.
- The **22@Volunteer** program is made up of current and retired members of 22@Network who, in addition to volunteering in community projects, help tutor new members of the innovation district in Spanish and Catalan. This has helped the district establish itself as an area where international companies can locate easily.

The average size of companies in the district is 25 employees; 48.62 percent of companies in 2008 had between one and five employees, and 3.75 percent had more than 100 employees.

⁸ "[Study of Economic Activity in the 22@ Barcelona District](#)," Universitat de Barcelona, January 2008, p. 8.

Eighteen percent of the land in the district is allocated for housing. In an attempt to preserve its historic architecture, 4,614 homes have been preserved and renovated, and the construction of 4,000 new state-subsidized housing units for new young workers has been listed as a goal for the district. 22@Barcelona has further diversified its residential options by providing temporary worker residences, and also allowing the conversion of buildings into "loft-type" housing units, assuming that they have a "degree of build-ability below that established for productive use" and that they are of architectural, historical, or artistic interest.¹¹ Thus, the city can provide an increasing number of residences while providing incentives to maintain its original architectural legacy.

Currently, 69 percent of the area has been revitalized.

Infrastructure and Transportation

In order to make the area appealing, the city has invested more than €180 million in [improving and modernizing infrastructure](#). This includes implementing a modern network of energy, telecommunications, heating, and pneumatic waste collection systems. The infrastructure plan also includes infrastructure improvements on 23 miles of streets. Additionally, sidewalks have been widened to 23 feet to promote foot travel, and the city has included 18 miles of bike lanes throughout the district, illustrated in this [map](#). The number of vehicle-accessible main and secondary streets has also been reduced in an attempt to decrease noise and air pollution. Furthermore, the Sant Andreu-Sagrera railway plan (from the Sagrera neighborhood in the Sant Andreu district of Barcelona) calls for a high-speed train station that will further connect Barcelona to France and aid commuters in the district.

Currently, [the innovation district is accessible through](#):

- **Public transport:** The district can be reached through a number of metro lines, by tram, and a network of busses that link the district to the rest of the city.
- **Automobile:** The district is connected nationally and internationally through a series of highways linked to Ronda del Litoral ring road, which also links the district to the Barcelona Metropolitan Network.
- **Airplane:** the internationally-focused district is close to Prat International Airport, and will be more closely linked to it by a series of RENFE high-speed trains.

¹¹ "[State of Execution](#)," Ajuntament de Barcelona, December 2009

Industry/ Clusters:

The [main goal of the city](#) is to establish the following industries in the 22@Barcelona:

- **Media:** The audiovisual sector, appealing to the city because of its "economic dynamism and historical significance," is located in Barcelona Media Park, which is an urban complex of offices, university training and residences for people associated with the communications sector.
- **Information and Computer Technology (ICT):** The city believes it can grow a successful ICT sector because of the established advanced infrastructure and the opportunity to connect the cluster to the media industry.
- **MedTech:** The city is aiming to boost growth in the biotechnology and biomedical engineering industries, and to build a cluster of national and international businesses. In order to develop specific projects promoting science and research, 22@Barcelona has partnered with many medical technology agents, such as Catalonia Bio and Parc de Recerca Biomèdica de Barcelona.
- **Energy:** To promote the energy sector, Campus Tecnològic i Empresarial de Barcelona b_TEC will house new "knowledge-based" space to address energy technology, mobility technology, water technology, and architecture and urbanism.
- **Design:** Barcelona's city center already established a design base, thus 22@Barcelona attempted to attract the industry to its district. The success of the design cluster is driven by the Barcelona Design Center and the city, and is an attempt to reinforce the Barcelona design "brand" internationally.



Figure 12: A graphic showing the five target clusters in the district (Source: 22@Barcelona)

These clusters, though located in distinct areas of the city, are still strategically located near each other, and close to the city center. Thus, interaction among the sectors will still occur, and will be aided by collaborative buildings, such as the Media-TIC building, which will link those two clusters by providing spaces for companies and research, and even provide space for the Open University of Catalonia.

Currently 74 percent of the firms in the district are associated in one of the five target industries.

Results

Since its inception in 2000, 22@Barcelona boasts [the following accomplishments](#):

- A 22.8 percent increase in residents since 2001, from 73,464 to 90,214.
- 1,300 new subsidized housing units created as of December 2011.
- More than 56,000 new workers as of December 2011.
- Between 2000 and December 2011, 4,500 new companies have moved into the district. Of these 47.3 percent are startups.
- 11 percent of new companies in 2008 were foreign.

Distinguishing Features

- **Livability focus:** The rezoning of the district for mixed-use development has allowed the city to create a revitalized atmosphere in a once heavily industrialized area. The new walkable, cultural, and community-oriented neighborhood provides an environment in which businesses and the local community can collaborate easily.
- **Strong city involvement in the community:** The city has maintained a multitude of programs, through the help of various partners, in the district to support businesses and create a collaborative atmosphere. The city provides significant incentives for businesses through these programs, and promotes academic-industry collaboration.
- **Industry-focused:** Barcelona focused on attracting companies from specific industries, after analyzing what types of clusters would be strategically helpful, and could realistically develop in the city.

Critical Questions

- How effective are the networking sites and public spaces in aiding businesses and encouraging collaboration?
- What are the main reasons why the district has been primarily attracting small business?
- Given the political reluctance towards large government involvement, can cities in the U.S.A. look to have the same level of investment in their innovation districts as the city of Barcelona does in the 22@ district?

Syracuse's Connective Corridor



Figure 13: A representation at a Connective Corridor bus stop of the cultural ventures Syracuse University aims to promote (Source: Syracuse in Focus)

Project Summary

Syracuse University (SU) has taken the leading role in revitalizing its city by heading a collaborative initiative that uses transportation improvements to connect universities and other downtown anchors. This [Connective Corridor](#) project, launched in 2005, is a two-mile strip that links three major universities on University Hill to the downtown central business district and its underutilized assets to help revitalize the area. The university has shaped the physical development of the Connective Corridor into an environmentally-friendly and walkable area which, when paired with cultural development, is helping to catalyze private-sector investments in the city. Public and private-sector groups have provided \$37.6 million in infrastructure improvements, and \$4.9 million in federal funds have been invested for Connective Corridor buses and smart transportation technologies. Related economic development efforts support the corridor, including the Syracuse Center of Excellence headquarters, which provides lab space and aid for clean-tech and energy businesses. Also, with the aid of medical and environmental higher education institutions, the area boasts a growing life sciences and energy cluster. By creating an attractive environment, the Connective Corridor provides a tight geographic focus for private sector investment in Syracuse.

Goals

The Connective Corridor aims to enhance the living experience in Syracuse by connecting major medical institutions, research and development centers, neighborhoods, cultural venues, and business districts. Ultimately, this transportation and urban revitalization project seeks to establish an "innovation ecosystem," that will:

- Create an outdoor "stage" to illustrate the city's assets and display products and technologies from local companies;

- Promote cultural tourism and population growth that will bring investment to the city and encourage economic development;
- Create an intellectual and physical infrastructure that fuels partnerships and utilizes local talent.

Key Players

Universities

Syracuse University's Office of Community Engagement and Economic Development has taken the lead in managing the Connective Corridor project. By marking several institutions as anchors along the Corridor, SU was able to establish a path between University Hill and downtown Syracuse that would highlight the city's cultural and industrial assets. Syracuse University, the State University of New York College of Environmental Science and Forestry (SUNY ESF), and SUNY Upstate Medical University have campuses on University Hill in the city. The Connective Corridor links these three institutions together and to the rest of the city. These universities have their own development projects along the Connective Corridor, many of which foster academic-industrial relationships, such as the Central New York Biotechnology Research Center, a collaborative project between SUNY ESF and Upstate Medical Center that establishes an incubator to help launch bio-tech and bio-medical companies.



Figure 14: The logo for the Connective Corridor. (Source: Connective Corridor)

The Connective Corridor project also attempts to retain students from the universities by making the city an attractive place to live and work. Internship and work networks are provided through SU's many partners, and multiple programs are also available to SU students to spur business development in the city. For example, the Student Sandbox Program, a college incubator, has launched more than 50 student ventures.¹²

SU also utilizes university talent in the Connective Corridor by having more than 400 students and faculty members working in collaboration with state, federal, and local partners on a variety of projects focused on the district. These projects range from creating public art for the Connective Corridor, to creating social media apps, to establishing green infrastructure. Students and faculty are also actively involved in creating and maintaining the Connective Corridor itself. For example, SU industrial design students helped [create an image for the area](#) with design team member *Pentagram*, a New York City branding firm. Marketing the corridor by emphasizing "USE" in Syracuse, the team created a logo and an identity for the area.

State and Federal Government

The state's main role in the Connective Corridor has come in the form of [securing state and federal financial assistance](#). In 2005, Sen. Chuck Schumer of New York announced \$5 million in public transit financing, while New York Congressman James Walsh announced \$5.8 million in

¹² Linda Dickerson Hartsock, Office of Community Engagement and Economic Development, Syracuse University, phone interview July 2012

federal funding for transportation improvements. In total, \$20 million of state funds from Empire State Development (ESD) and the Dormitory Authority of the State of New York (DASNY) have been allocated to the Connective Corridor project. ESD is New York's chief economic development agency, while DASNY is a state agency that provides financing and construction services to public and private institutions. The state also has several programs that award funds to individual private development projects that are occurring along the Connective Corridor. One such example is the Central New York Biotechnology Research Center, which secured \$5.6 million from the New York State Regional Economic Development Councils. This project was part of a larger strategic plan that won \$103 million for regional projects from New York Gov. Cuomo's Regional Council Initiative. Additionally, in April 2012 SyracuseCoE was awarded a \$3 million grant from this initiative toward a total project cost of \$8.7 million to build several labs and research facilities at the Syracuse Center of Excellence's headquarters, and to [create transportation improvements on the Connective Corridor](#).

Another funding source for the Connective Corridor is the façade improvement program from the Empire State Development Corporation, which has awarded 40 companies with grants totaling \$625,000 to [improve the physical conditions](#) of property along the Connective Corridor and to help create a distinct identity.

The City

The City of Syracuse worked closely with SU to improve the Connective Corridor, especially regarding transportation and public spaces. Additionally, the city, in partnership with SU, was instrumental in obtaining over \$42.5 million in external funding from public- and private-sector groups for infrastructure and transit investments, making it the largest public works project in Syracuse in the past 30 years. The partnership between the city and SU has also helped [attract \\$200 million in private investment](#). The city also [offers its own incentive programs](#), including tax exemptions, loans, and low-cost financing, which aid businesses and startups in the area.

Private Sector

Many businesses located along the Connective Corridor have catalyzed growth through their individual projects, some of which have received technical and financial assistance from SU and the city. Examples of these include, O'Brien and Gere, the Clean Tech Center, and Inns at Armory Square. Many of these private sector initiatives have been particularly successful in encouraging startup development and bringing a number of jobs to the Corridor.

For example, Syracuse Center of Excellence (SyracuseCoE), a consortium of private and public groups dedicated to clean energy technology and green innovation, has been a key partner for SU. With its headquarters (a \$41 million "living laboratory" project, with an [\\$8.7 million expansion under way](#)) located along the Connective Corridor, SyracuseCoE acts as an anchor and provides research and



Figure 15: Headquarters of the Syracuse Center of Excellence (Source: Connective Corridor)

development labs for clean-tech energy companies. For example, Ephesus Technologies, a new LED lighting innovation company, has tested its products using facilities at SyracuseCoE, and has used the Connective Corridor as a testbed for many of their products. The SyracuseCoE reported that approximately 643 jobs were created or retained at 41 firms and institutions with which it has partnered.

The Syracuse Technology Garden, an incubator and accelerator on the Connective Corridor and a key partner of SU, is another example of a downtown redevelopment project that now makes major contributions to the Connective Corridor. The Syracuse Technology Garden offers business incubation and acceleration services, hosts a variety of programs including the university's Student Sandbox, and offers space for businesses. The Syracuse Technology Garden has launched more than 100 startups in five years that have raised more than \$15 million in new capital.

Background

Location

The Connective Corridor is a two-mile strip that extends from University Hill, where college campuses are located, to downtown Syracuse. University Hill is lined with restaurants and other entertainment venues to cater to the student population, while downtown Syracuse includes Armory Square, a major retail and dining hub, and Hanover Square, home to historical sites and institutions. A [graphic](#) from the Connective Corridor illustrates projects that were completed by October 2011. The [SALT District](#) (Syracuse, Art, Life, and Tech) is an attempt by SU, with multiple other private and public partners such as SyracuseCoE, to revitalize Near Westside, a neighborhood near the Connective Corridor filled with vacant real estate. The area has experienced severe dis-investment, resulting in empty warehouses and abandoned department stores that are now being redeveloped into lofts, artists' studios and creative centers for the artistic community. There will also be some residential developments to accommodate people moving into the city, such as empty-nesters and young entrepreneurs, who wish to be near Connective Corridor assets.

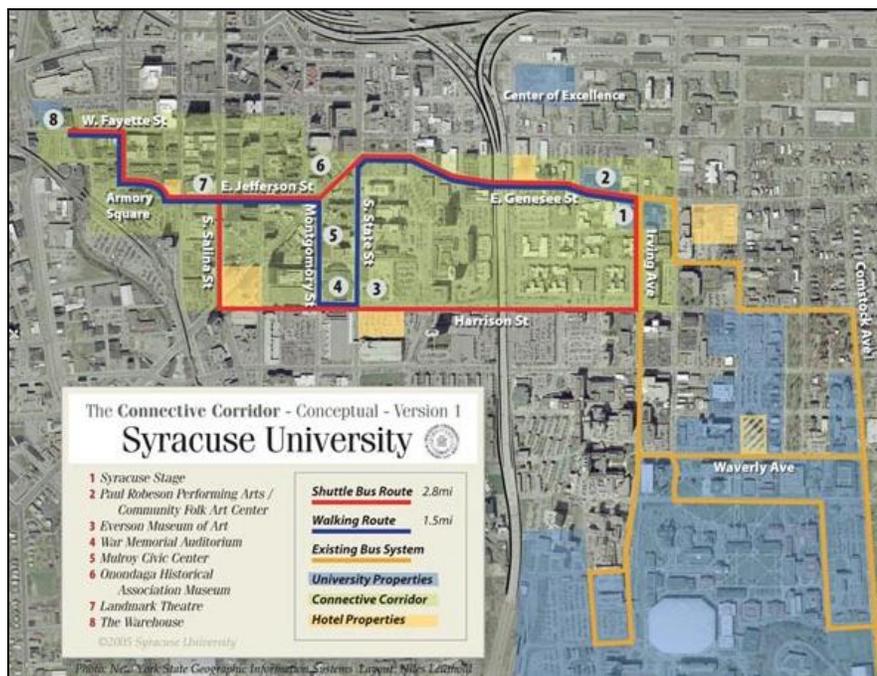


Figure 16: Rendering of the area. The Connective Corridor is displayed in light yellow, while University property is in light blue (Source: Syracuse University)

A [map](#) of the SALT district illustrates the opportunities of being in the area, such as being located close to arts and cultural venues, businesses, and community centers.

Transportation

Transportation improvements are a major focus along the Connective Corridor. SU aims to transform the area into a well-connected route that links the city and the universities. A free public bus service is provided along the Connective Corridor route through \$4.9 million of federal funding to encourage university students and faculty to participate and interact with SU's partner institutions. The main Connector route is being transformed with granite curbing, new bike lanes, green space and landscaping, pavers, and more. University Avenue has been converted from one-way to two-way traffic in order to increase access to University Hill.

Various other partners of SU have pledged to help improve the physical infrastructure in the Connective Corridor project. The [Connective Corridor Portal](#), a transportation testbed at SyracuseCoE, will include a bus kiosk; parking for 99 cars including charging stations for electric cars; bike racks; water bottle refilling stations; and "photovoltaic arrays for producing electricity."

Local Economy/ Clusters

Initially a manufacturing hub, Syracuse is transitioning into a service and knowledge-based economy. Businesses in the city represent a variety of industries ranging from IT to law firms, though most are part of the same higher education and anchor institution clusters. SUNY ESF and SyracuseCoE have promoted growth in the clean-tech and energy sectors, and the presence of the SUNY Upstate Medical University has encouraged health-care and life-sciences clusters in the area. Currently, [SUNY Upstate Medical University and SU are the largest employers](#).

Results

Individual projects along the Connective Corridor boast their own economic growth figures and successes, including the following:

- The Clean Tech Center, a clean-energy incubator that is a part of the Syracuse Technology Garden, has launched over 24 new clean energy startups.
- O'Brien and Gere, an engineering firm, moved 350 engineers into the new \$30 million Washington Station building on the Connective Corridor.
- 75 new jobs have been created by Inns at Armory Square, a Marriott Courtyard and Residence Inn combined complex that is anticipated to open in May 2013 in the Corridor.
- Polaris Library Systems is relocating 75 information technology jobs after renovating a historic building on the Corridor for its offices.

Distinguishing Features

- **Focus on the environment:** The Connective Corridor aims to create a cultural venue that provides entertainment not only for residents, but also attracts tourists to the vicinity. By improving access and creating stronger ties to various areas of the city, the Connective Corridor promotes greater community engagement and provides a geographic focus for economic development in the city of Syracuse.
- **Strong coalitions:** Collaboration between higher education and anchor institutions has driven the growth of the Connective Corridor. The number of projects in the area has risen through

partnerships not only with the private-sector, but also with state and local agencies. Many of these collaborative projects have resulted in job growth and business development.

- **Strong university involvement:** SU took the lead in establishing and maintaining the Connective Corridor, and has played a role in the majority of private-sector projects along the Connective Corridor. Recognizing its role in the community, SU has encouraged **active student involvement** in the project and has helped to create networking opportunities for students and faculty.

Critical Questions

- How much of an effect will improving the cultural atmosphere and transportation ultimately have on economic development?
- Will the Connective Corridor succeed over time in attracting private investment and jobs, or attracting new residents (recently graduated students, empty nesters), in a significant way?
- Would the Connective Corridor be more successful if it focused on attracting firms from a particular industry cluster?

Conclusion

The innovation district case studies in this report offer insight into how other cities around the nation and the world are applying a strategic, place-based approach to economic development, and achieving some level of success. If New Jersey were to pursue an innovation-district strategy, it already has many of the fundamental assets that underpin the districts studied:

- It is [home to 31 four-year universities and 19 county colleges with two-year programs](#). Thus, many cities and companies in New Jersey have access to a large pool of young talent. Rutgers University, in particular, has a variety of colleges and campuses in New Brunswick, Camden, and Newark, and has already displayed private-sector involvement through the Rutgers-Camden Tech Business Incubator, the EcoComplex Environmental Incubator, a variety of research centers and institutes that stress faculty-student involvement with industry, and numerous other programs.
- The state boasts a strong [bio/pharmaceutical and life-sciences industry](#), housing major firms. Advanced manufacturing, finance, technology, health services, and leisure, hospitality and retail are also prominent clusters in the state. The life-sciences and technology industries, in particular, are supported by a highly educated workforce (two-thirds of employees hold at least a Bachelor's degree in the life-sciences industry, and 63 percent in the technology sector). Therefore, these industries might be able to further utilize the talent pool provided by New Jersey universities.
- There is a large variety of transit connections within the state and to New York City and Philadelphia. Though the majority of the state is auto-dependent, some cities are especially friendly to pedestrians and transit-users. Jersey City, for example, has [impressive transit-oriented development](#) with more than 98 percent of its households having access to transit (located within a quarter mile of a bus stop, or a half-mile to a railway station).

Just as importantly, however, the districts studied appear to be successful in part because incentives were directed at a combination of industry, institution, infrastructure, and the right location. The districts are all located in areas with strong smart-growth characteristics – compact housing along with a mix of other uses and public spaces; and easy access to cultural and entertainment amenities and to transit. Thus innovation districts are not the solution for every commercial center in New Jersey, but some places seem especially promising. To cite just one example, Newark could utilize the Rutgers campus, the University of Medicine & Dentistry of New Jersey and the New Jersey Institute of Technology to support private enterprise, particularly in the tech, finance, and insurance fields located there. It has a range of cultural and entertainment assets, including the Prudential Center, the Meadowlands Sports Complex and the New Jersey Performing Arts Center. And it has transportation infrastructure that connects it to the rest of the state, to New York, to the rest of the Northeast via Amtrak and even to the rest of the world via Newark Liberty International Airport. The right linking incentives could help to create a vibrant innovation district in the city.

Once adopted, New Jersey's [State Strategic Plan](#) should also offer a clear framework for moving such strategies forward both in Newark and in other locations.

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