

Politecnico di Milano – Politecnico di Torino

ALTA SCUOLA POLITECNICA

Mind Project – Summer 2016

From industrial local areas towards innovation districts: implementing, attracting and developing a new territorial structure for new economy and production in Milan region

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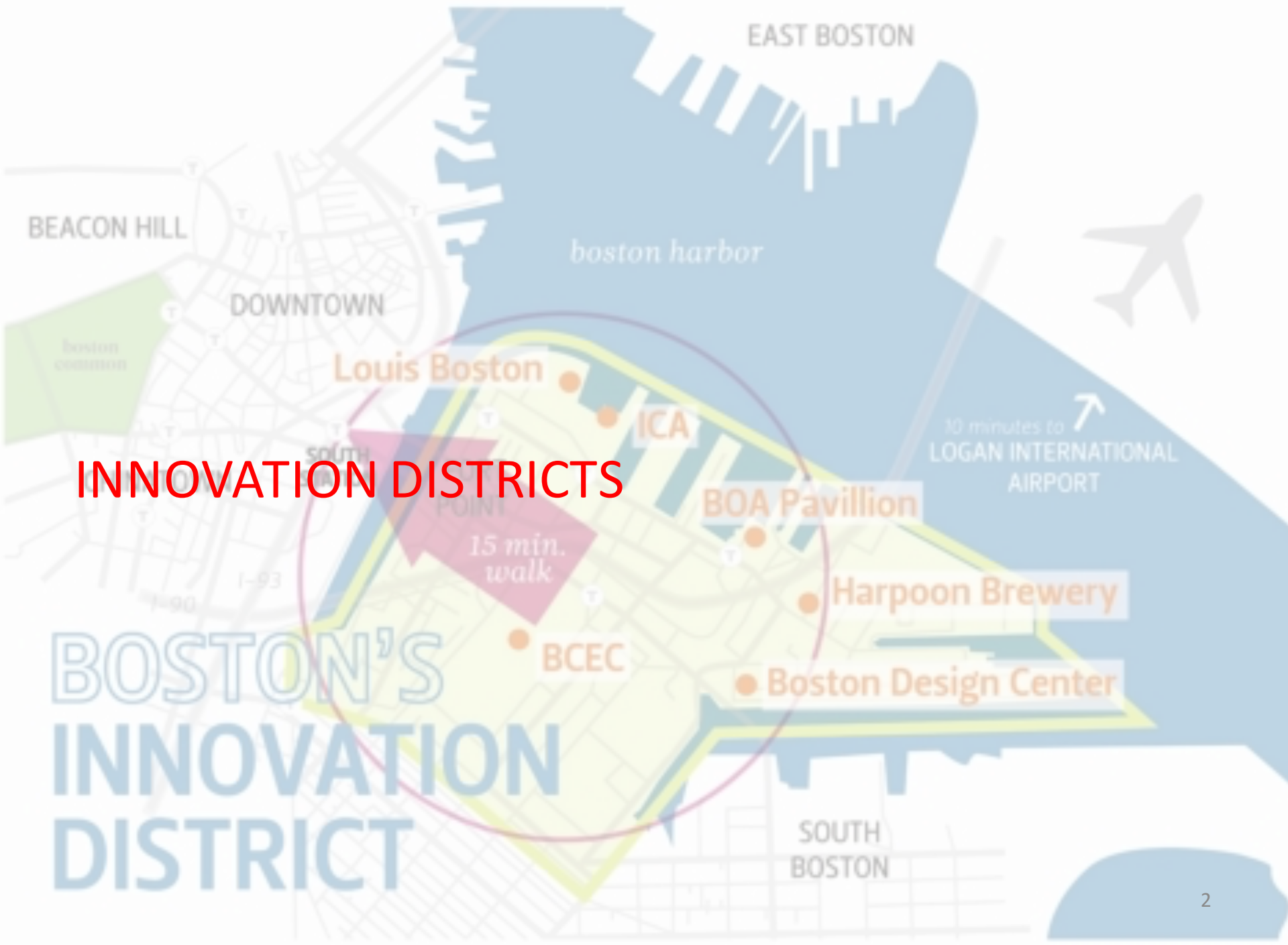
June, 28th 2016 – 2pm

INNOVATION DISTRICTS. What they are?

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INNOVATION DISTRICTS

BOSTON'S INNOVATION DISTRICT



A map of Boston's Innovation District, showing the area between East Boston, South Boston, and Downtown Boston. The map highlights the harbor, the airport, and several key locations: Louis Boston, ICA, BCEC, and the Boston Design Center. A yellow line indicates a corridor, and a purple line shows a boundary. A large blue circle is centered on the district. The text 'BOSTON'S INNOVATION DISTRICT' is overlaid in large blue letters. The background shows a stylized map of the city with various landmarks and transportation routes.

AS THE WESTERN WORLD SLOWLY EMERGES FROM THE GREAT RECESSION,
**A REMARKABLE SHIFT IS OCCURRING IN THE SPATIAL GEOGRAPHY OF
INNOVATION.**

FOR THE PAST 50 YEARS, THE LANDSCAPE OF INNOVATION HAS BEEN
DOMINATED BY PLACES *LIKE SILICON VALLEY—SUBURBAN CORRIDORS OF
SPATIALLY ISOLATED CORPORATE CAMPUSES*, ACCESSIBLE ONLY BY CAR, WITH
LITTLE EMPHASIS ON THE QUALITY OF LIFE OR ON INTEGRATING WORK,
HOUSING AND RECREATION.

BOSTON'S
INNOVATION
DISTRICT

A map of Boston's Innovation District, showing the area between East Boston, South Boston, and Downtown Boston. The map highlights the district's location relative to the harbor and surrounding neighborhoods. Key landmarks and institutions are marked, including the BOA Pavillion, BCEC, Boston Design Center, and Harpoon Brewery. A 15-minute walk radius is indicated around the district. The map also shows the location of Logan International Airport and the South Station transit hub. The text "BOSTON'S INNOVATION DISTRICT" is prominently displayed in the bottom left corner.

A new complementary urban model is now emerging, giving rise to what we and others are calling “innovation districts.”

These districts are **geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators and accelerators.**

They are also *physically compact, transit-accessible, and technically-wired and offer mixed-use housing, office, and retail.*

BOSTON'S
INNOVATION
DISTRICT

EAST BOSTON

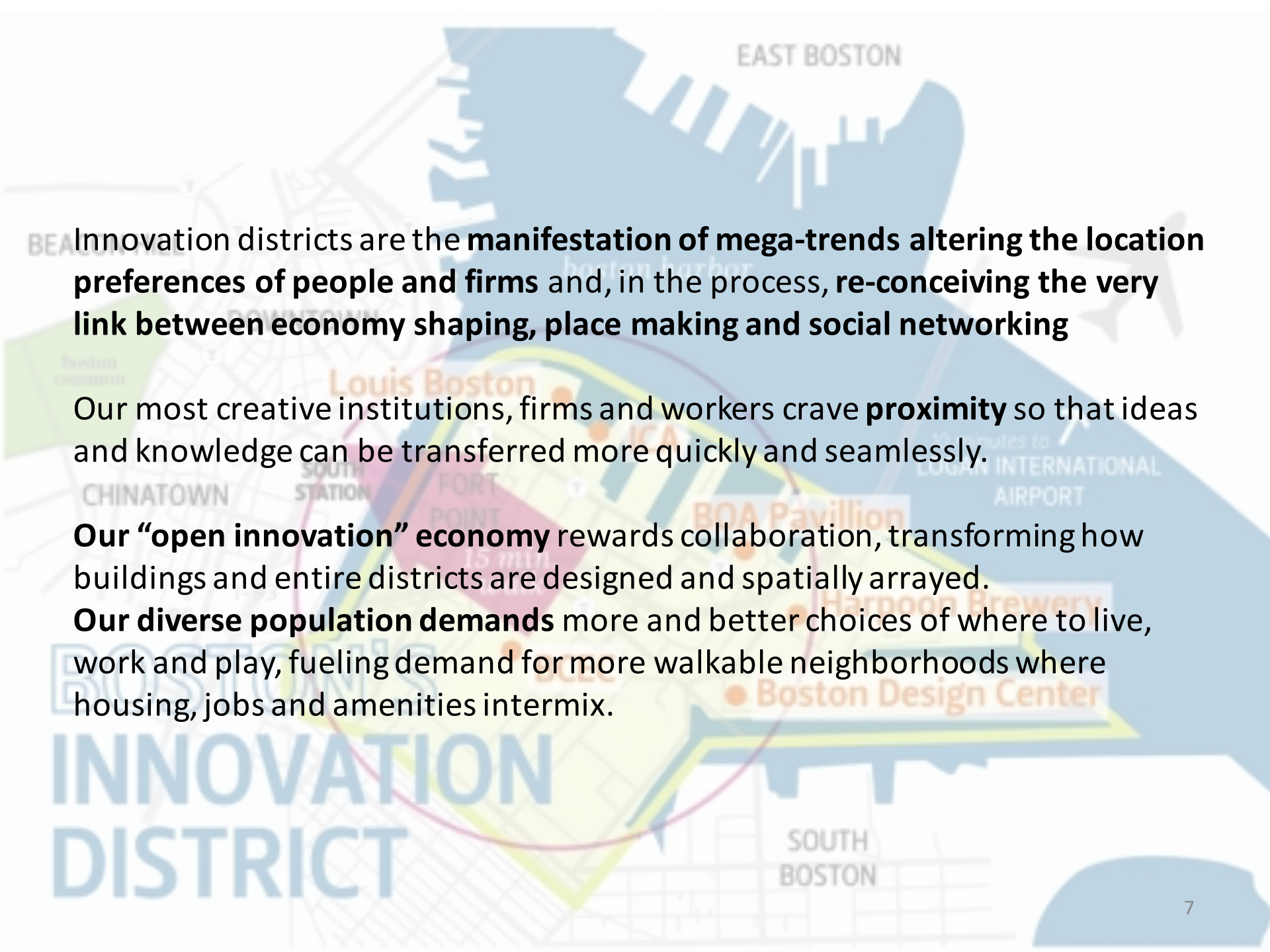


DISTRICT

SOUTH BOSTON



BOSTON

A stylized map of Boston's Innovation District, showing the harbor, downtown, and surrounding areas like East Boston, South Boston, Chinatown, and South Station. Key locations marked include Louis Boston, ICA, BOA Pavillion, Harpoon Brewery, and Boston Design Center. A large blue circle highlights the central area, and a yellow line indicates a path or boundary. The text 'INNOVATION DISTRICT' is prominently displayed in large blue letters at the bottom left.

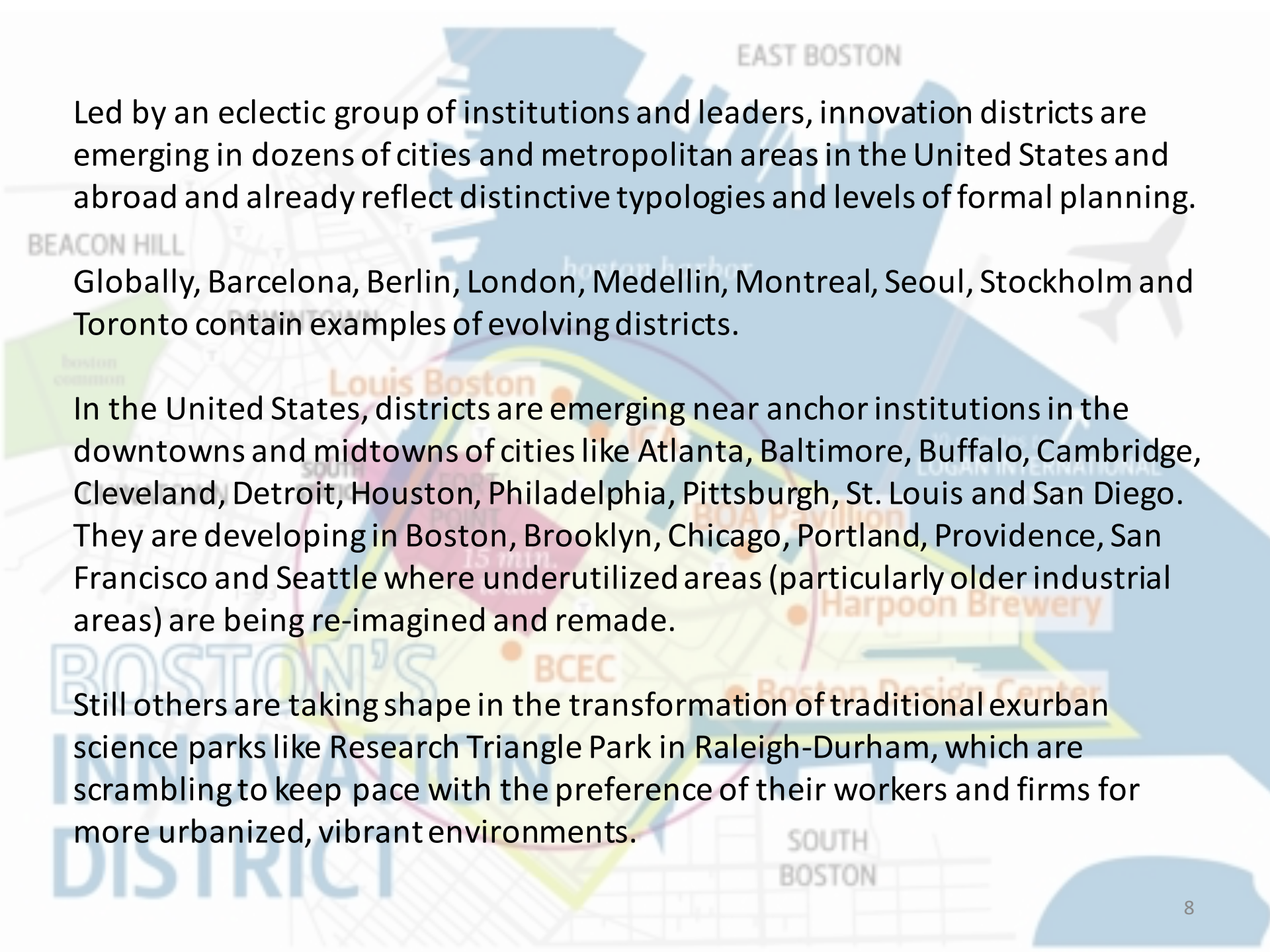
Innovation districts are the **manifestation of mega-trends altering the location preferences of people and firms** and, in the process, **re-conceiving the very link between economy shaping, place making and social networking**

Our most creative institutions, firms and workers crave **proximity** so that ideas and knowledge can be transferred more quickly and seamlessly.

Our “open innovation” economy rewards collaboration, transforming how buildings and entire districts are designed and spatially arrayed.

Our diverse population demands more and better choices of where to live, work and play, fueling demand for more walkable neighborhoods where housing, jobs and amenities intermix.

**INNOVATION
DISTRICT**

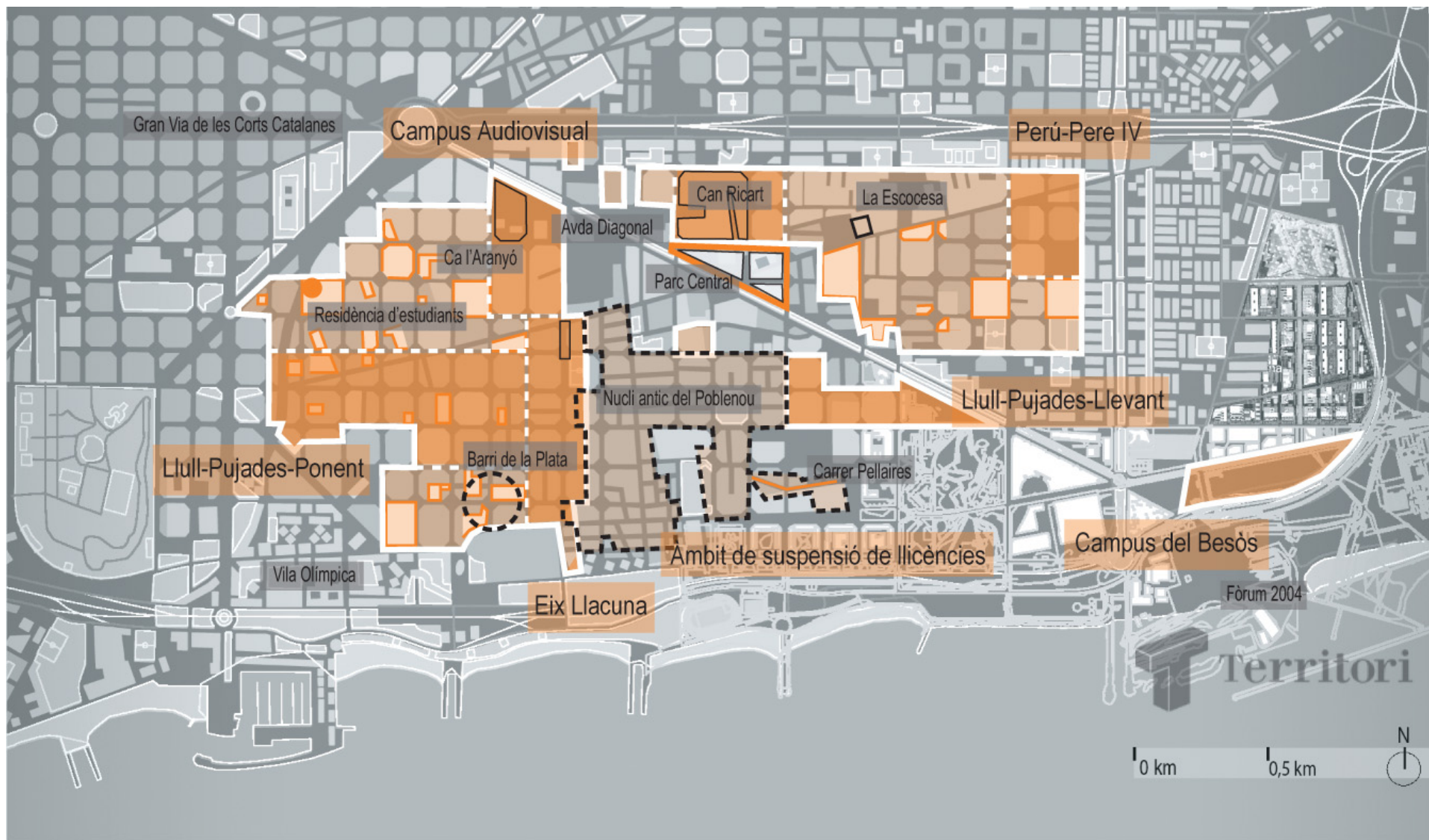


Led by an eclectic group of institutions and leaders, innovation districts are emerging in dozens of cities and metropolitan areas in the United States and abroad and already reflect distinctive typologies and levels of formal planning.

Globally, Barcelona, Berlin, London, Medellin, Montreal, Seoul, Stockholm and Toronto contain examples of evolving districts.


In the United States, districts are emerging near anchor institutions in the downtowns and midtowns of cities like Atlanta, Baltimore, Buffalo, Cambridge, Cleveland, Detroit, Houston, Philadelphia, Pittsburgh, St. Louis and San Diego. They are developing in Boston, Brooklyn, Chicago, Portland, Providence, San Francisco and Seattle where underutilized areas (particularly older industrial areas) are being re-imagined and remade.

Still others are taking shape in the transformation of traditional exurban science parks like Research Triangle Park in Raleigh-Durham, which are scrambling to keep pace with the preference of their workers and firms for more urbanized, vibrant environments.







A background map of Boston's Innovation District, showing areas like East Boston, South Boston, Chinatown, and Downtown. Key locations marked include ICA, Harpoon Brewery, and the Boston Design Center. A pink triangle labeled 'walk' is also visible.

Innovation districts have the unique potential to spur productive, inclusive and sustainable economic development.

At a time of sluggish growth, **they provide a strong foundation for the creation and expansion of firms and jobs** by helping companies, entrepreneurs, universities, researchers and investors—across sectors and disciplines—co-invent and co-produce new discoveries for the market.

At a time of rising social inequality, **they offer the prospect of expanding employment and educational opportunities** for disadvantaged populations given that many districts are close to low- and moderate-income neighborhoods.

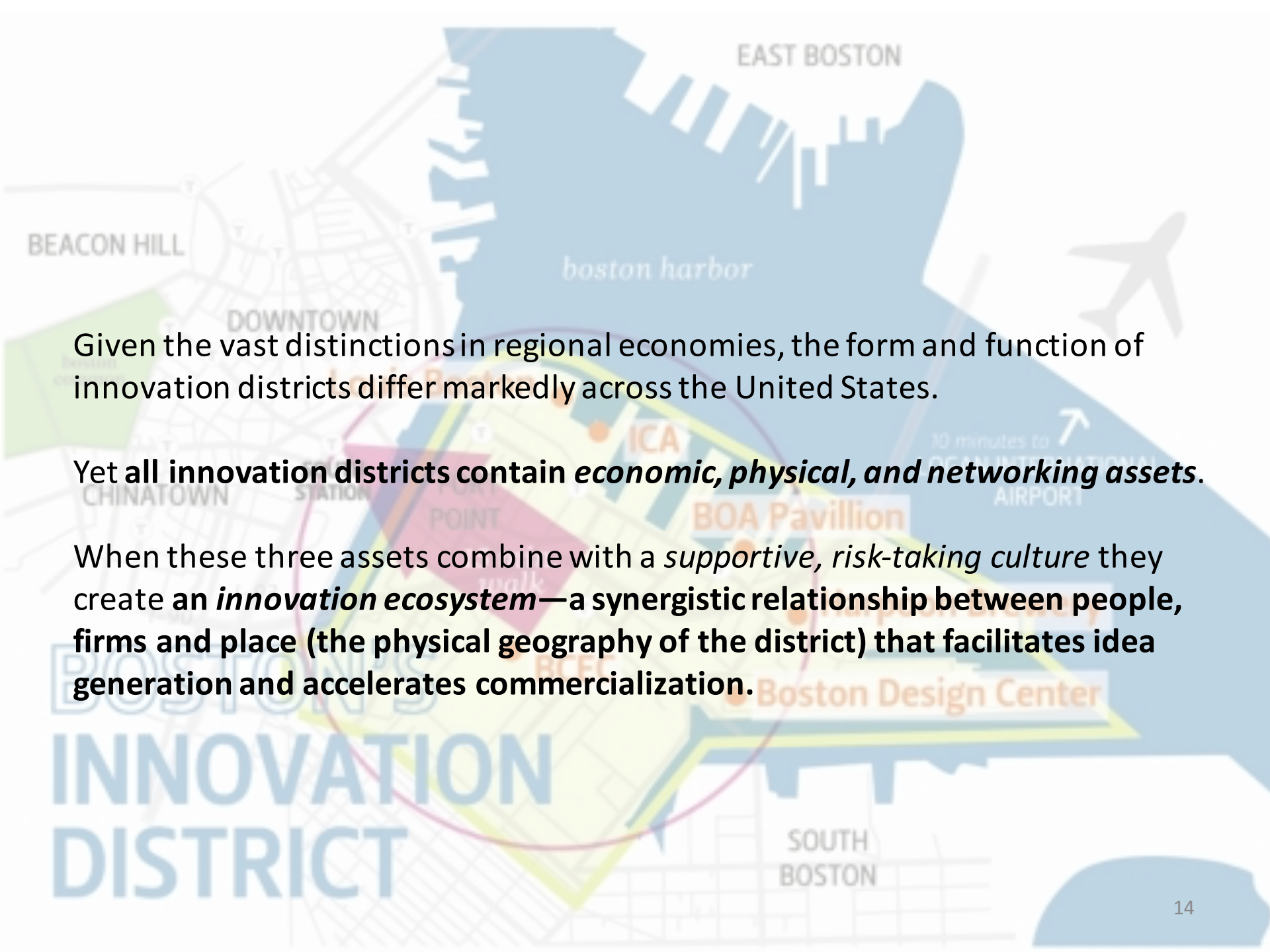
And, at a time of inefficient land use, extensive sprawl and continued environmental degradation, **they present the potential for denser residential and employment patterns**, the leveraging of mass transit, and the repopulation of urban cores.

A map of Boston's Innovation District, centered around the harbor. The map shows various neighborhoods including Beacon Hill, Downtown, East Boston, South Boston, Chinatown, and South End. Key locations marked include Louis Boston, BCEC, Harpoon Brewery, and Boston Design Center. A large blue circle highlights the Innovation District area. A stylized airplane icon is in the upper right. The text 'BOSTON'S INNOVATION DISTRICT' is prominently displayed in the lower left.

Where they are

Innovation districts constitute the ultimate mash up of entrepreneurs and educational institutions, start-ups and schools, mixed-use development and medical innovations, bike-sharing and bankable investments—all connected by transit, powered by clean energy, wired for digital technology, and fueled by caffeine.

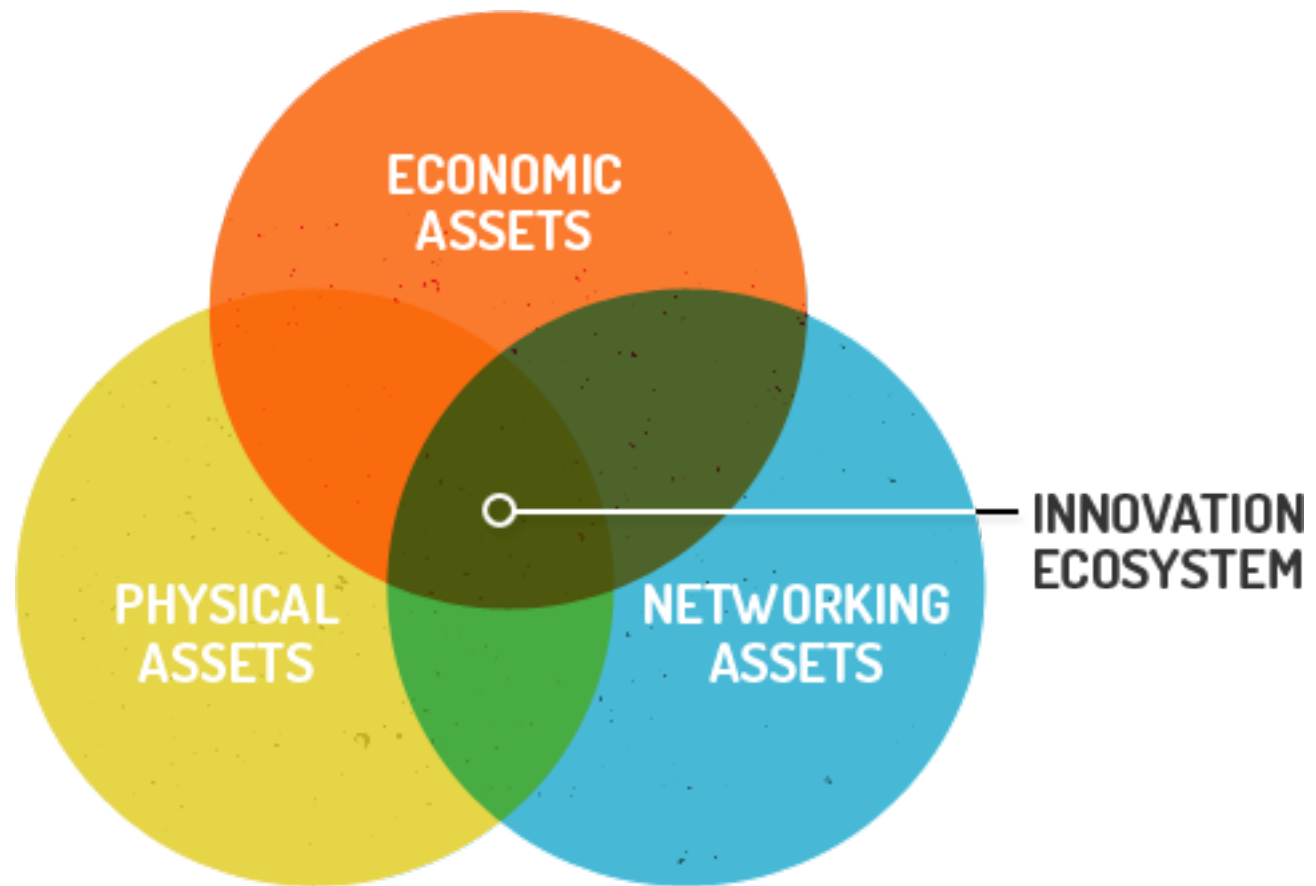
BOSTON'S INNOVATION DISTRICT

A map of Boston's Innovation District, centered on the area between Downtown Crossing and South Station. The map highlights the district with a yellow and green outline. Key locations marked include ICA, BOA Pavillion, and the Boston Design Center. The map also shows surrounding areas like East Boston, South Boston, Downtown, Chinatown, and Beacon Hill, as well as the Boston Harbor and Logan International Airport. A large, semi-transparent text 'BOSTON'S INNOVATION DISTRICT' is overlaid on the map.

Given the vast distinctions in regional economies, the form and function of innovation districts differ markedly across the United States.

Yet **all** innovation districts contain *economic, physical, and networking assets*.

When these three assets combine with a *supportive, risk-taking culture* they create **an *innovation ecosystem***—a synergistic relationship between people, firms and place (the physical geography of the district) that facilitates idea generation and accelerates commercialization.





1. Economic assets are the firms, institutions and organizations that drive, cultivate or support an innovation-rich environment.

Economic assets can be separated into three categories:

Innovation drivers are the research and medical institutions, the large firms, start-ups and entrepreneurs focused on developing cutting-edge technologies, products and services for the market.

Due to regional variations in industry strengths, each district is comprised of a unique mix of innovation drivers.


Tech driven industries most likely to be found in Innovation Districts include: high-value, research-oriented sectors such as applied sciences and the burgeoning “app economy”; highly creative fields such as industrial design, graphic arts, media and architecture; and highly specialized, small batch manufacturing.

A stylized map of Boston's Innovation District. The map shows the harbor, downtown, and surrounding areas like Beacon Hill, South Station, Chinatown, and South Boston. A yellow circle highlights the Innovation District area, which includes labels for BCEC and Boston Design Center. A purple line indicates a path or boundary. An airplane icon is shown in the upper right, and a text label indicates '10 minutes to LOGAN INTERNATIONAL AIRPORT'.

Innovation cultivators are the companies, organizations or groups that support the growth of individuals, firms and their ideas.

They include incubators, accelerators, proof-of-concept centers, tech transfer offices, shared working spaces and local high schools, job training firms and community colleges advancing specific skill sets for the innovation-driven economy.

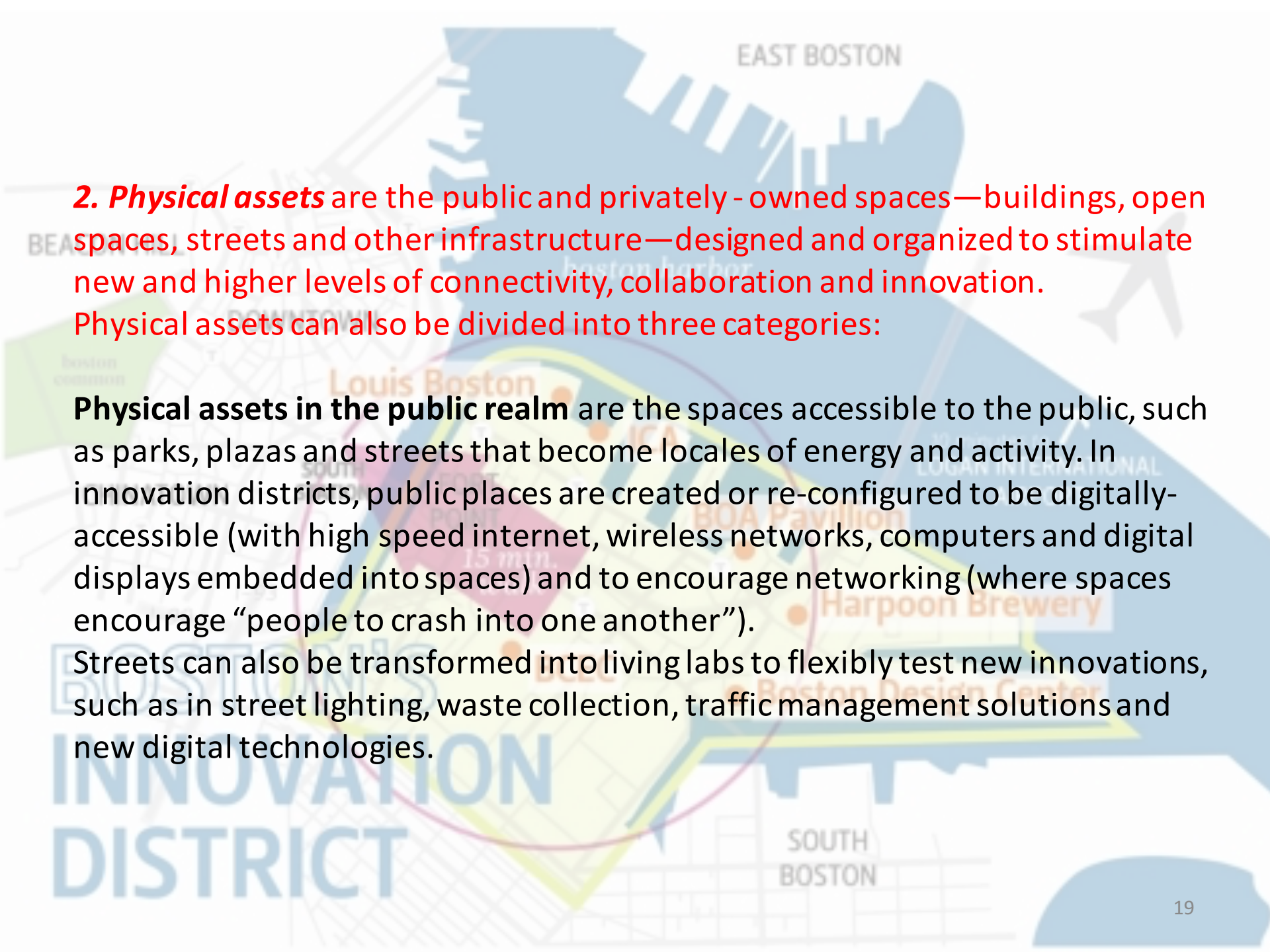
BOSTON'S
INNOVATION
DISTRICT

A map of Boston's Innovation District, centered on the area between South Station and the harbor. The map shows various landmarks and transit lines. A red circle highlights the core area, and a yellow circle highlights a larger area. Labels include BEACON HILL, DOWNTOWN, CHINATOWN, SOUTH STATION, FORT POINT, EAST BOSTON, boston harbor, ICA, BOA Pavillion, Harpoon Brewery, BCEC, Boston Design Center, and SOUTH BOSTON. A text box with a red border and a yellow background is overlaid on the map, containing the text "Neighborhood-building amenities provide important support services to residents and workers in the district." and "This ranges from medical offices to grocery stores, restaurants, coffee bars, small hotels and local retail (such as bookstores, clothing stores and sport shops)." The text "BOSTON'S INNOVATION DISTRICT" is written in large blue letters at the bottom left. An airplane icon is shown in the upper right, with text indicating "10 minutes to LOGAN INTERNATIONAL AIRPORT".

Neighborhood-building amenities provide important support services to residents and workers in the district.

This ranges from medical offices to grocery stores, restaurants, coffee bars, small hotels and local retail (such as bookstores, clothing stores and sport shops).


BOSTON'S
INNOVATION
DISTRICT

A background map of Boston's Innovation District, showing areas like East Boston, South Boston, and the harbor. Key locations marked include Louis Boston, ICA, BOA Pavilion, Harpoon Brewery, and the Boston Design Center. A 15-minute transit circle is also indicated.

2. *Physical assets* are the public and privately - owned spaces—buildings, open spaces, streets and other infrastructure—designed and organized to stimulate new and higher levels of connectivity, collaboration and innovation. Physical assets can also be divided into three categories:


Physical assets in the public realm are the spaces accessible to the public, such as parks, plazas and streets that become locales of energy and activity. In innovation districts, public places are created or re-configured to be digitally-accessible (with high speed internet, wireless networks, computers and digital displays embedded into spaces) and to encourage networking (where spaces encourage “people to crash into one another”).

Streets can also be transformed into living labs to flexibly test new innovations, such as in street lighting, waste collection, traffic management solutions and new digital technologies.



Physical assets in the private realm are privately-owned buildings and spaces that stimulate innovation in new and creative ways. Office developments are increasingly configured with shared work and lab spaces and smaller, more affordable areas for start-ups. A new form of micro-housing is also emerging, with smaller private apartments that have access to larger public spaces, such as co-working areas, entertainment spaces and common eating areas.

BOSTON'S INNOVATION DISTRICT



Physical assets that knit the district together and/or tie it to the broader metropolis are investments aimed to enhance relationship-building and connectivity.

For some districts, knitting together the physical fabric requires remaking the campuses of advanced research institutions to remove fences, walls and other barriers and replace them with connecting elements such as bike paths, sidewalks, pedestrian-oriented streets and activated public spaces.

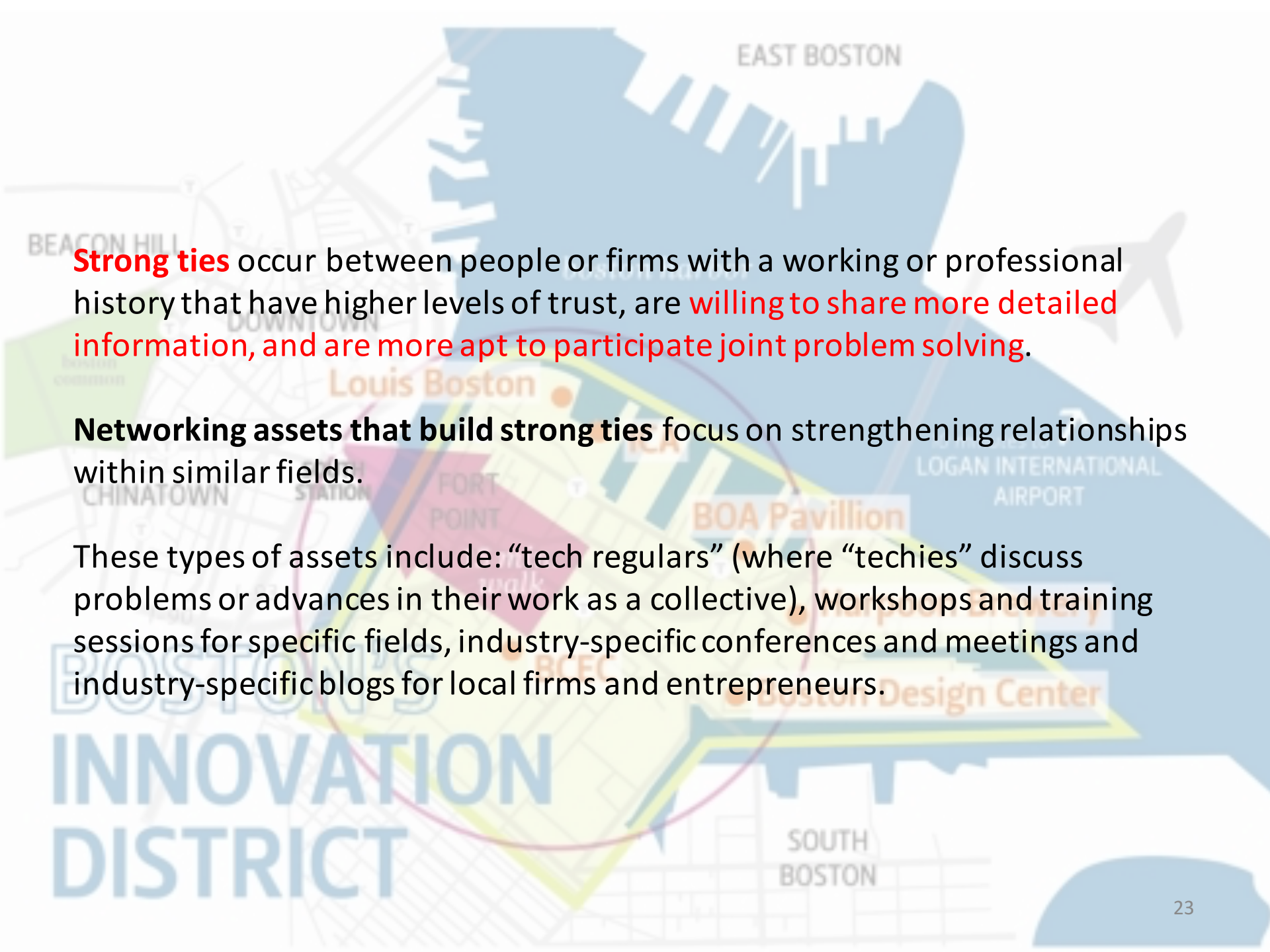
Strategies to strengthen connectivity between the district, adjoining neighborhoods and the broader metropolis include infrastructure investments, such as broadband, transit and road improvements.

A stylized map of Boston's Innovation District. The map shows the harbor area with labels for 'EAST BOSTON', 'BEACON HILL', 'DOWNTOWN', 'CHINATOWN', 'SOUTH BOSTON', and 'boston harbor'. Key locations marked include 'ICA', 'BCEC', 'Harpoon Brewery', and 'Boston Design Center'. A yellow line indicates a 'walk' route. An airplane icon is shown in the upper right, with text '10 minutes to ICA INTERNATIONAL AIRPORT' and an arrow pointing towards it. The title 'BOSTON'S INNOVATION DISTRICT' is written in large blue letters at the bottom left.

3. *Networking assets* are the relationships between actors—such as individuals, firms and institutions—that have the potential to generate, sharpen and accelerate the advancement of ideas.

Networks fuel innovation because they strengthen trust and collaboration within and across companies and industry clusters, provide information for new discoveries and help firms acquire resources and enter new markets.

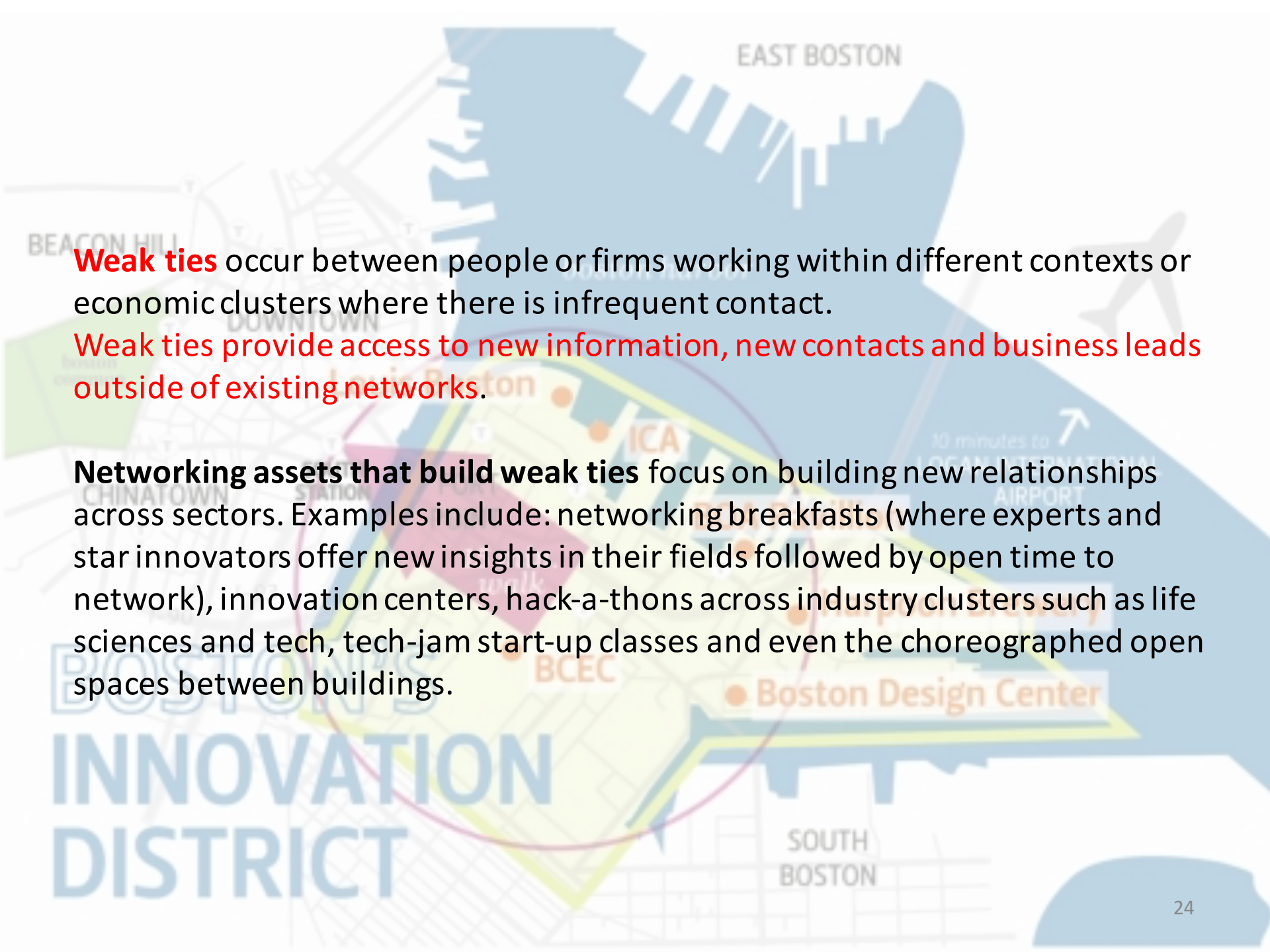
Networks are generally described as either having strong ties or weak ties.

A stylized map of Boston's Innovation District, showing various neighborhoods and landmarks. The map includes labels for East Boston, Beacon Hill, Downtown, Chinatown, South Boston, and Logan International Airport. Specific locations within the Innovation District are highlighted with colored circles and labels: Louis Boston (orange), BOA Pavillion (orange), and Boston Design Center (orange). A large blue circle is drawn around the central part of the map, encompassing the Innovation District. The text "BOSTON'S INNOVATION DISTRICT" is written in large, bold, blue letters at the bottom left of the map.

Strong ties occur between people or firms with a working or professional history that have higher levels of trust, are **willing to share more detailed information**, and are more apt to participate joint problem solving.

Networking assets that build strong ties focus on strengthening relationships within similar fields.

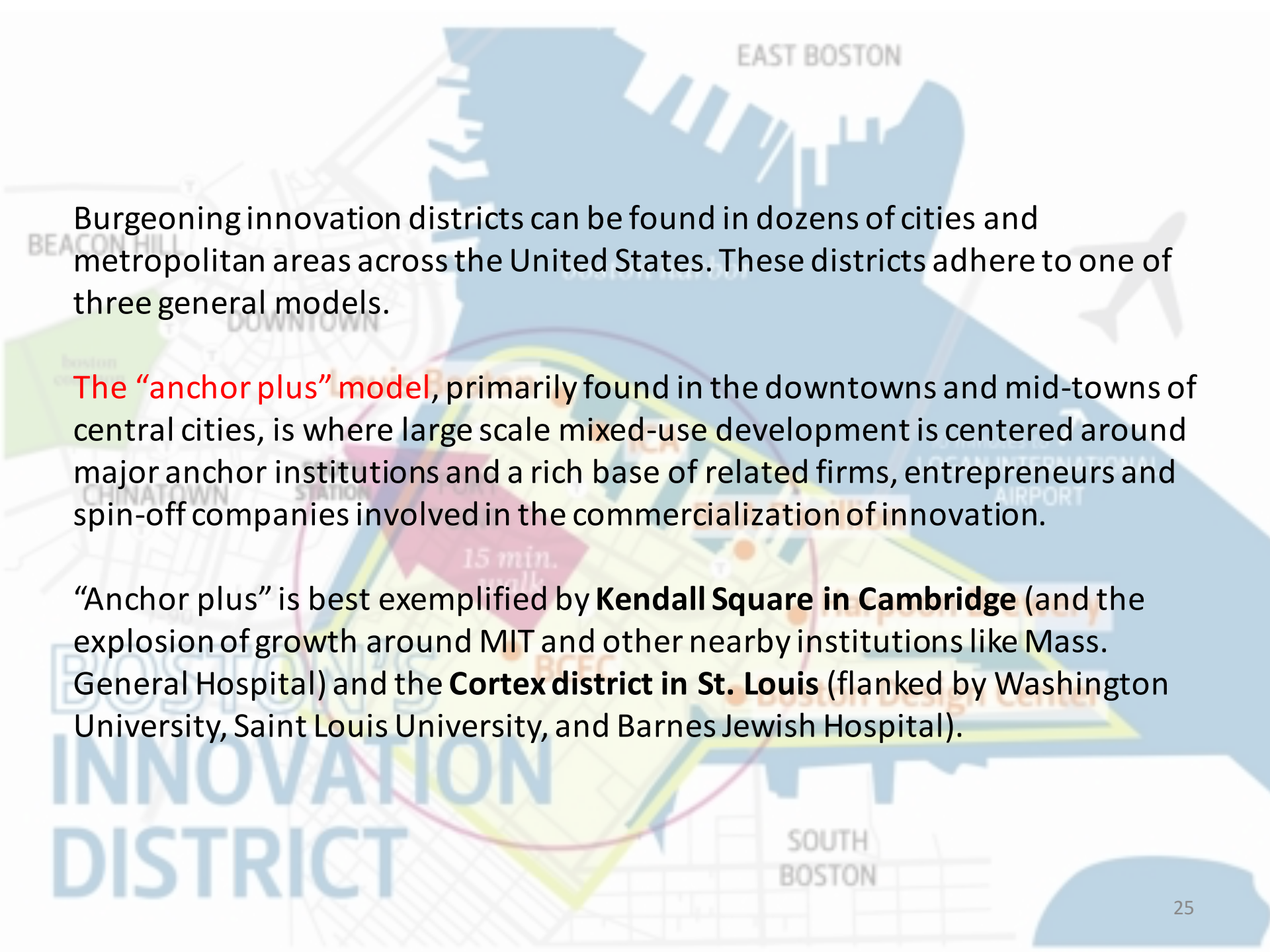
These types of assets include: “tech regulars” (where “techies” discuss problems or advances in their work as a collective), workshops and training sessions for specific fields, industry-specific conferences and meetings and industry-specific blogs for local firms and entrepreneurs.

A stylized map of Boston's Innovation District, showing the area between the harbor and South Boston. Key locations marked include East Boston, Downtown Crossing, Chinatown, South Boston, and the Innovation District itself. Specific points of interest like ICA, BCEC, and the Boston Design Center are highlighted. A yellow line indicates a route or boundary, and a purple circle highlights a specific area. A small airplane icon is shown in the upper right, with a note '10 minutes to Logan International Airport' and an arrow pointing towards the airport.

Weak ties occur between people or firms working within different contexts or economic clusters where there is infrequent contact.

Weak ties provide access to new information, new contacts and business leads outside of existing networks.

Networking assets that build weak ties focus on building new relationships across sectors. Examples include: networking breakfasts (where experts and star innovators offer new insights in their fields followed by open time to network), innovation centers, hack-a-thons across industry clusters such as life sciences and tech, tech-jam start-up classes and even the choreographed open spaces between buildings.



Burgeoning innovation districts can be found in dozens of cities and metropolitan areas across the United States. These districts adhere to one of three general models.

The “**anchor plus**” model, primarily found in the downtowns and mid-towns of central cities, is where large scale mixed-use development is centered around major anchor institutions and a rich base of related firms, entrepreneurs and spin-off companies involved in the commercialization of innovation.

“Anchor plus” is best exemplified by **Kendall Square in Cambridge** (and the explosion of growth around MIT and other nearby institutions like Mass. General Hospital) and the **Cortex district in St. Louis** (flanked by Washington University, Saint Louis University, and Barnes Jewish Hospital).

CORTEX


**Where our best and brightest
will live and work** page 12





Cortex Innovation Community Development Progress



 Complete / Under Construction

 Being Planned

EAST BOSTON



INNOVATION
DISTRICT

SOUTH
BOSTON



Where they are

The “re-imagined urban areas” model, often found near or along historic waterfronts, is where industrial or warehouse districts are undergoing a physical and economic transformation.

This change is powered, in part, by **transit access**, a **historic building stock**, and their **proximity to downtowns in high rent cities**, which is then supplemented with advanced research institutions and anchor companies.

This model is best exemplified by the remarkable regeneration underway in Boston’s South Boston waterfront and Seattle’s South Lake Union area.



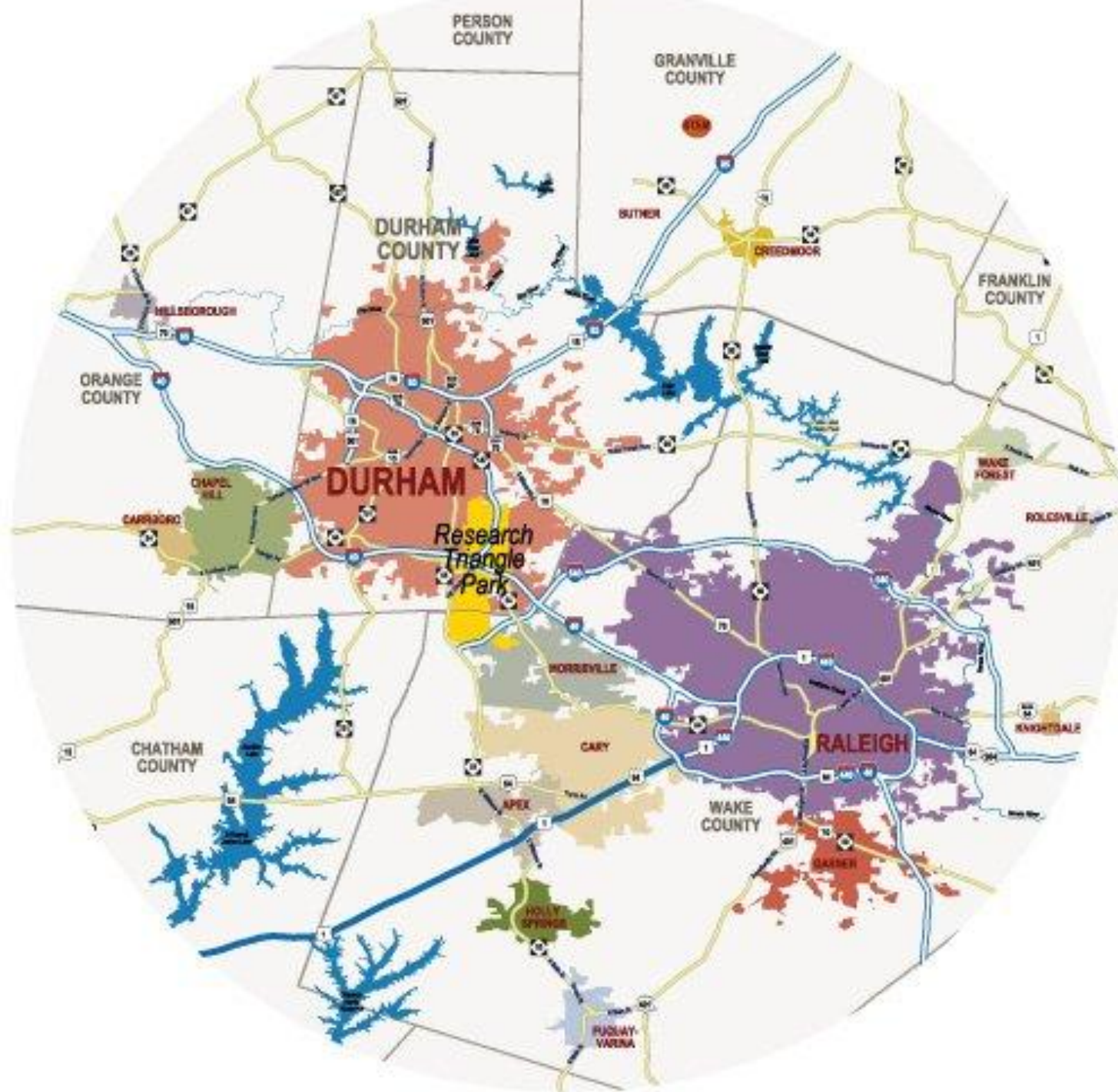


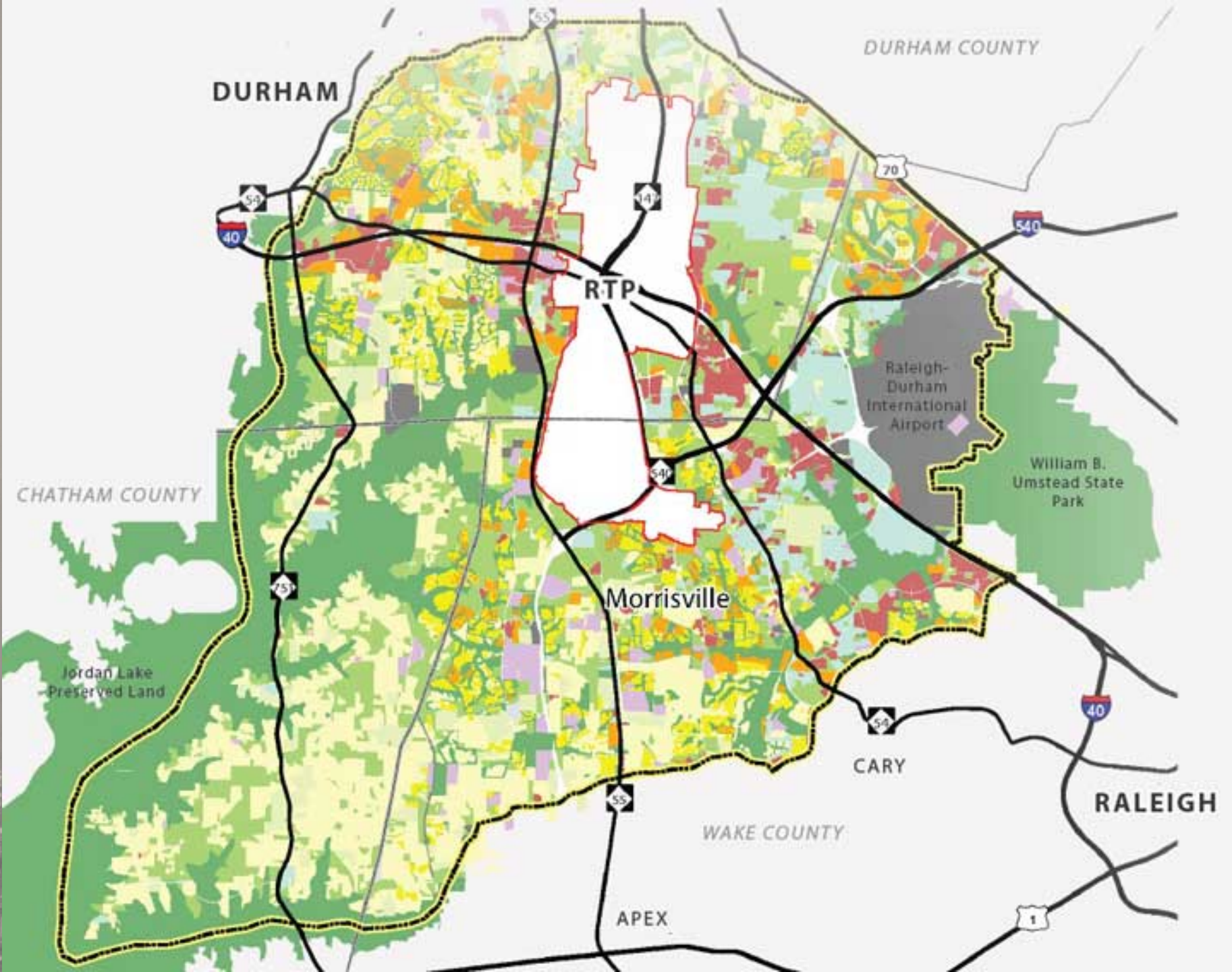


Where they are

The third model, “urbanized science park,” commonly found in suburban and exurban areas, is where traditionally isolated, sprawling areas of innovation are urbanizing through increased density and an infusion of new activities (including retail and restaurants) that are mixed as opposed to separated.

North Carolina’s Research Triangle Park, perhaps the 20th century’s most iconic research and development campus, is the strongest validation of this model. In November, 2012, RTP unveiled a new 50-year master plan that calls for a greater concentration of buildings and amenities, including the creation of a vibrant central district, the addition of up to 1,400 multi-family housing units, retail and the possible construction of a light rail transit line to connect the park with the larger Raleigh-Durham region.





RESEARCH TRIANGLE PARK North Carolina



MAY 2012



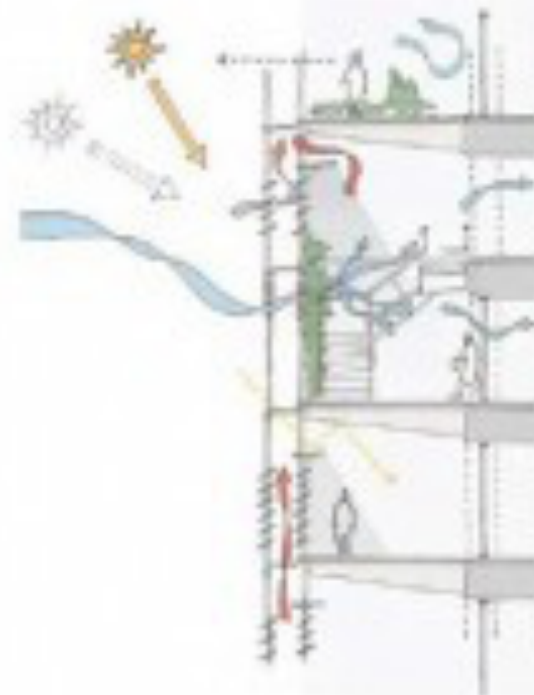
LEGEND

- ★ RTP Headquarters
- Available For Sale
- Park Center (Commercial, Office, Hotel)
- Park Research Center (Lab/Office)
- TUCASI Campus
- Research Triangle Park
- Natural Area Preserve
- Recreation Area















Phase 2

SERVICED APARTMENTS

Phase 1

RESEARCH PARK

Phase 2

RESEARCH PARK

Phase 2

AMENITIES

Retail, Food Court, Health Spa
Recreation/ Entertainment
Primary Health Centre
ATM
Montessori / Day Care Centre
Convention Centre

KENDALL SQUARE

Anchor-Plus • Cambridge

Anchored by the Massachusetts Institute of Technology (MIT), and connected by transit to Harvard, Mass General and other research and medical institutions, Cambridge's Kendall Square is today's iconic innovation district.

Since its founding in 1861, MIT has emphasized university/industry partnerships and the commercialization of ideas. Starting in the 1950s, the university has actively deployed university-owned land to support this goal. In the last two decades, this strategy has helped catalyze growth of a nationally significant life sciences/pharmaceutical cluster. It has also spurred the development of hundreds of small firms and attracted several major technology companies.

The Cambridge Innovation Center (CIC), founded in 1999 and housed in an MIT-owned building, is a good example of the interplay between the university and private sector. An independent organization, CIC has helped develop the modern concept of co-working while encouraging entrepreneurs and start-ups in its high quality environment. Firms at CIC have attracted billions of dollars of seed funding and later-stage investment.

Making Kendall Square a dynamic residential district with associated amenities is now a focus in Cambridge. Since 2005 nearly 1,000 new housing units have been built in the area, as well as many new restaurants and retail outlets.



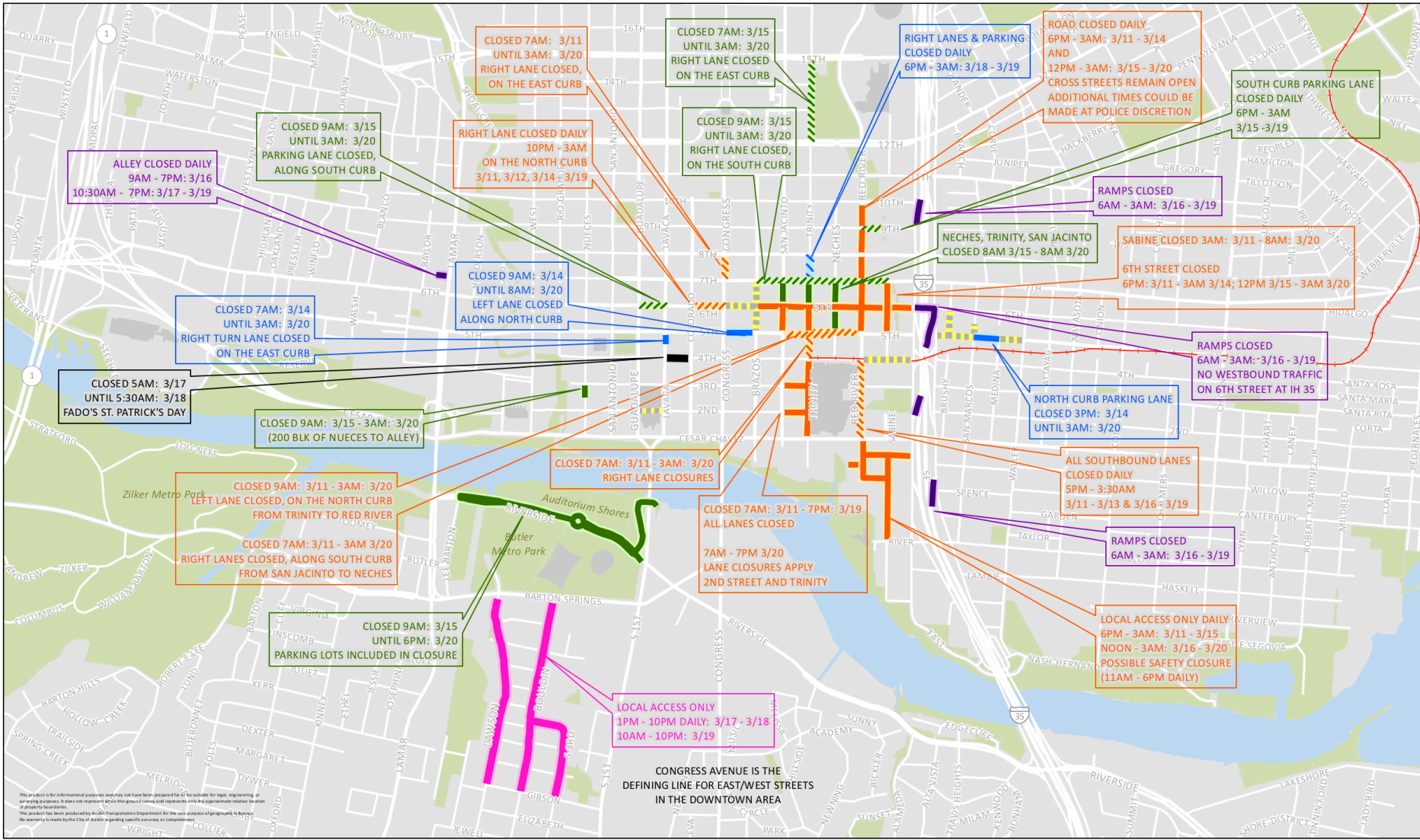




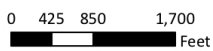
MEET THE NEIGHBORS

MIT has collaborations with ~700 companies located around the globe. However, increasingly companies are moving in, or starting up, next door. As this map (which contains only a partial listing) indicates, MIT is rapidly becoming a hub for technology companies. The Institute is also playing an active role in promoting this change, especially with its ambitious plans for Kendall Square.





- 3/11/16, FULL CLOSURE
- 3/15/16, FULL CLOSURE
- 3/17/16, FULL CLOSURE
- CLOSURES AT POLICE DISCRETION
- 3/11/16, PARTIAL CLOSURE
- 3/15/16, PARTIAL CLOSURE
- 3/18/16, PARTIAL CLOSURE
- 3/14/16, PARTIAL CLOSURE
- 3/16/16, FULL CLOSURE
- 3/17/16, LOCAL ACCESS ONLY
- METRO RAIL



SXSW 2016
STREET CLOSURES
 3/11/2016 - 3/20/2016
 Plotted: 2/22/2016







UNIVERSITY CITY

Anchor-Plus • Philadelphia

Home to the University of Pennsylvania, Drexel University, University of the Sciences and Children's Hospital of Philadelphia, University City is leveraging its assets in teaching, research, and medicine to become a hub of innovation and entrepreneurship.

The University City Science Center is a driving force behind this evolution. Founded in 1963 as the nation's first urban research park, today it comprises 31 member institutions throughout Pennsylvania, New Jersey, and Delaware. Penn Medicine is anchoring the newest UCSC building, and Drexel has opened its ExCITE Center and (in partnership with UCSC) a tech incubator in the area. Both are part of Drexel's Innovation Neighborhood project, which extends to 30th Street Station. All told, UCSC's 17-acre campus houses 2.5 million square feet of office and lab space, with business incubation, networking opportunities, and support services for a cluster of emerging and established companies in life sciences, nanotechnology, IT and other sectors.

University City's leaders are actively engaging with nearby neighborhoods. Drexel helped win a federal "Promise Zone" designation to revitalize Mantua, just north of the area. Penn and Drexel have also championed public education: Penn built and helps operate a nearby pre K-8 school, and Drexel is exploring a similar endeavor.



CORTEX

Anchor-Plus • St. Louis

The Cortex Innovation Community (Cortex) aims to make the core of St. Louis a platform for commercialization and entrepreneurship and “a lively setting for work, play and living.”

Cortex was formed in 2002 by a consortium of anchor institutions, which pooled local institutional and philanthropic funds with state tax credits and city resources. The goal is to transform a 200-acre corridor between St. Louis University, Washington University Medical School, and Barnes Jewish Hospital into a vibrant urban community and a center of research and enterprise, building on the city’s base of world-renowned plant and life sciences research.

Several pieces of the strategy are already taking shape. Cortex is aggressively working to build a cluster of innovation centers to attract investment and stimulate entrepreneurial growth. The founding of the BioGenerator (a sophisticated accelerator) has helped close the funding gaps challenging dozens of local startups.

The Cortex West Redevelopment Corporation, the city-designated master developer of the area, has also sparked 1.5 million square feet of office and research space, housing, infrastructure, and retail, leveraging \$500 million in public, private, and civic capital and creating 2,850 direct jobs to date; over 10,000 jobs are projected upon completion of the \$2 billion buildout.

DOWNTOWN, MIDTOWN

Anchor-Plus • Detroit

After decades of well-documented economic decline and population loss, Detroit intends to build on the assets of its Downtown and Midtown core by designating the area as an innovation district.

Current market momentum in the area reflects years of investment by dozens of public, private, and philanthropic organizations. Corporate relocations—most notably the headquarters of Quicken Loans—have fueled a downtown renaissance, sparking the growth and attraction of IT and other firms as well as the expansion of housing and retail. Midtown's resurgence can largely be attributed to anchor-driven expansions and focused efforts to restore the urban fabric. Today, the entire 4.3 square mile area comprises just 3.1 percent of the city's land area—yet it has nearly 55 percent of the city's jobs, and 11 percent of its business establishments. The soon-to-be built [M-1 streetcar](#) will both serve and boost this activity.

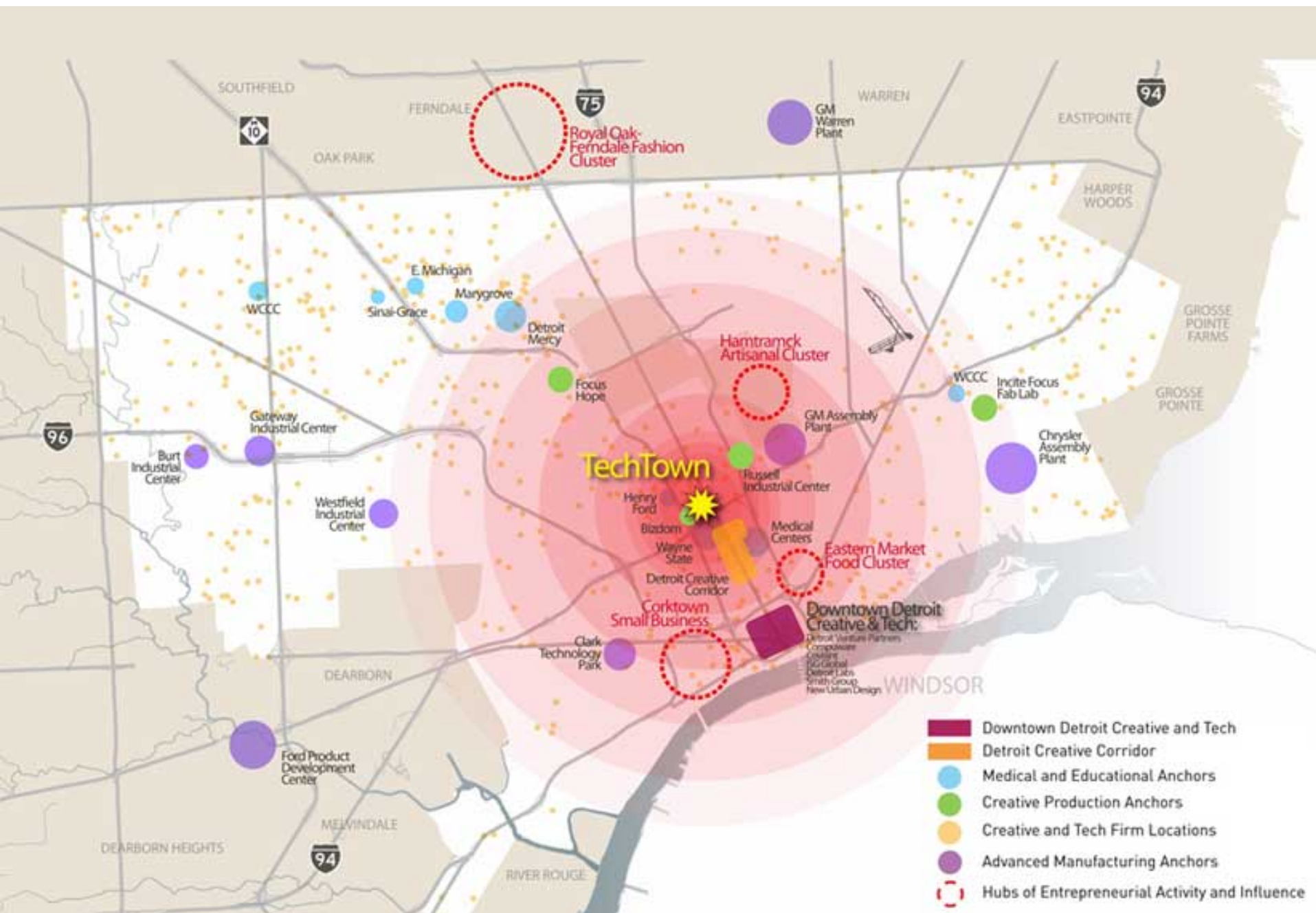
The Detroit Innovation District (DID) is officially designated by the city, supported by the state, and governed by stakeholders from anchor institutions, the private and civic sectors. The District represents Detroit's best potential to grow population and jobs in a way that both stimulates innovation and brings real value to residents and neighborhoods.

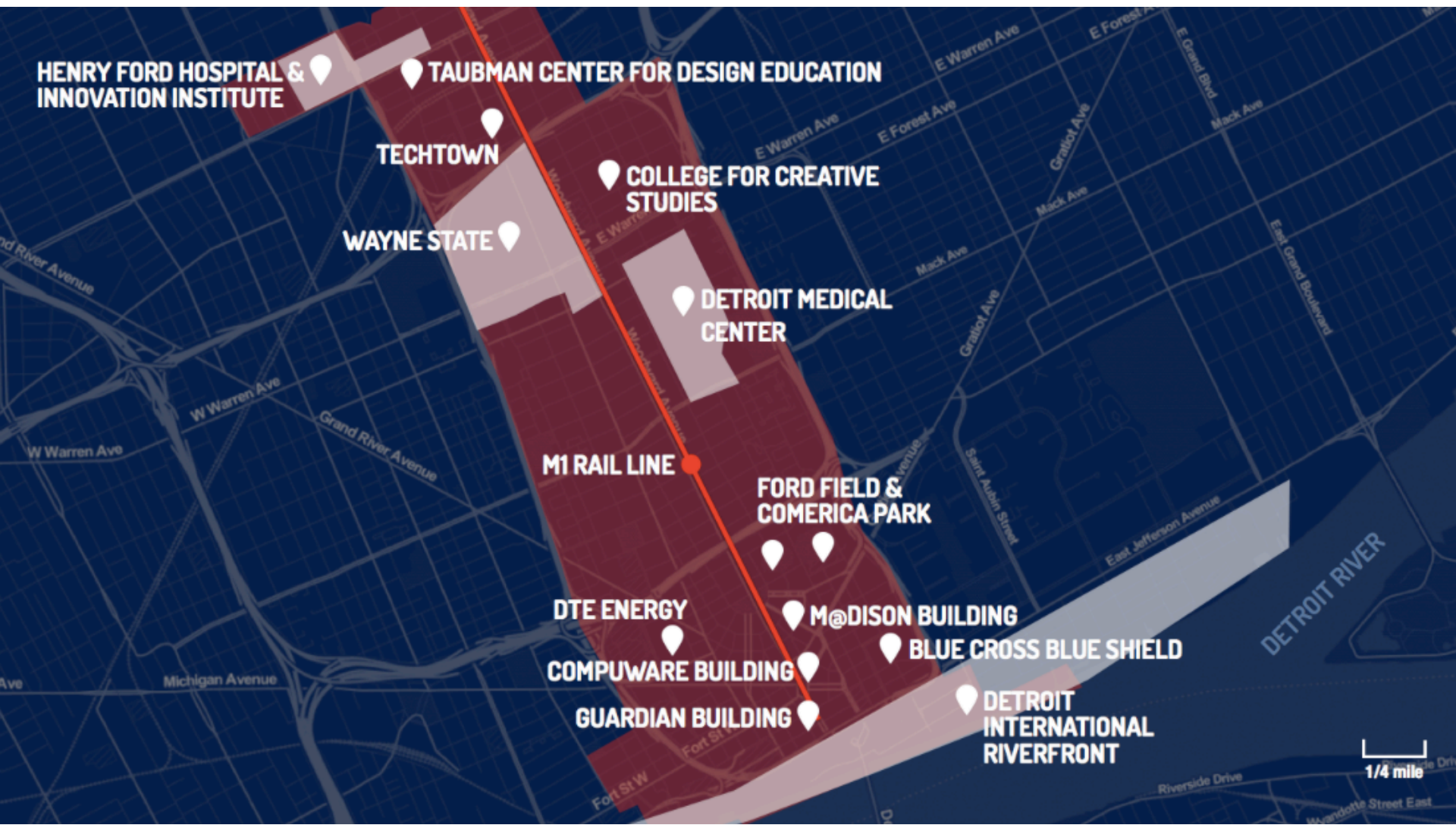
A stylized, abstract map of Detroit, Michigan, rendered in a vibrant, geometric style. The map is composed of various colored polygons and circles in shades of orange, yellow, pink, and teal. A prominent blue line represents the Detroit River, flowing along the bottom right edge. Several orange circles of varying sizes are scattered across the map, some containing smaller circles or lines. The word "DETROIT" is written in large, white, sans-serif capital letters across the upper left portion of the map. Below it, the words "innovation district" are written in a smaller, black, sans-serif font. At the bottom of this text block, the phrase "a New Economic Development Designation." is written in a small, white, sans-serif font. In the top left corner, there is a list of terms in a small, white, sans-serif font: "coordinated strategies • vibrant • welcoming • local innovation • regional connections • global networking • accelerated job growth • tax revenues • global exports • economic connections • D2B linkages • vibrant residential environments • neighborhood growth".

DETROIT

innovation district

a New Economic Development Designation.





HENRY FORD HOSPITAL &
INNOVATION INSTITUTE

TAUBMAN CENTER FOR DESIGN EDUCATION

TECHTOWN

COLLEGE FOR CREATIVE
STUDIES

WAYNE STATE

DETROIT MEDICAL
CENTER

M1 RAIL LINE

FORD FIELD &
COMERICA PARK

DTE ENERGY

M@DISON BUILDING

COMPUWARE BUILDING

BLUE CROSS BLUE SHIELD

GUARDIAN BUILDING

DETROIT
INTERNATIONAL
RIVERFRONT

1/4 mile



EXISTING INSTITUTIONAL ANCHORS

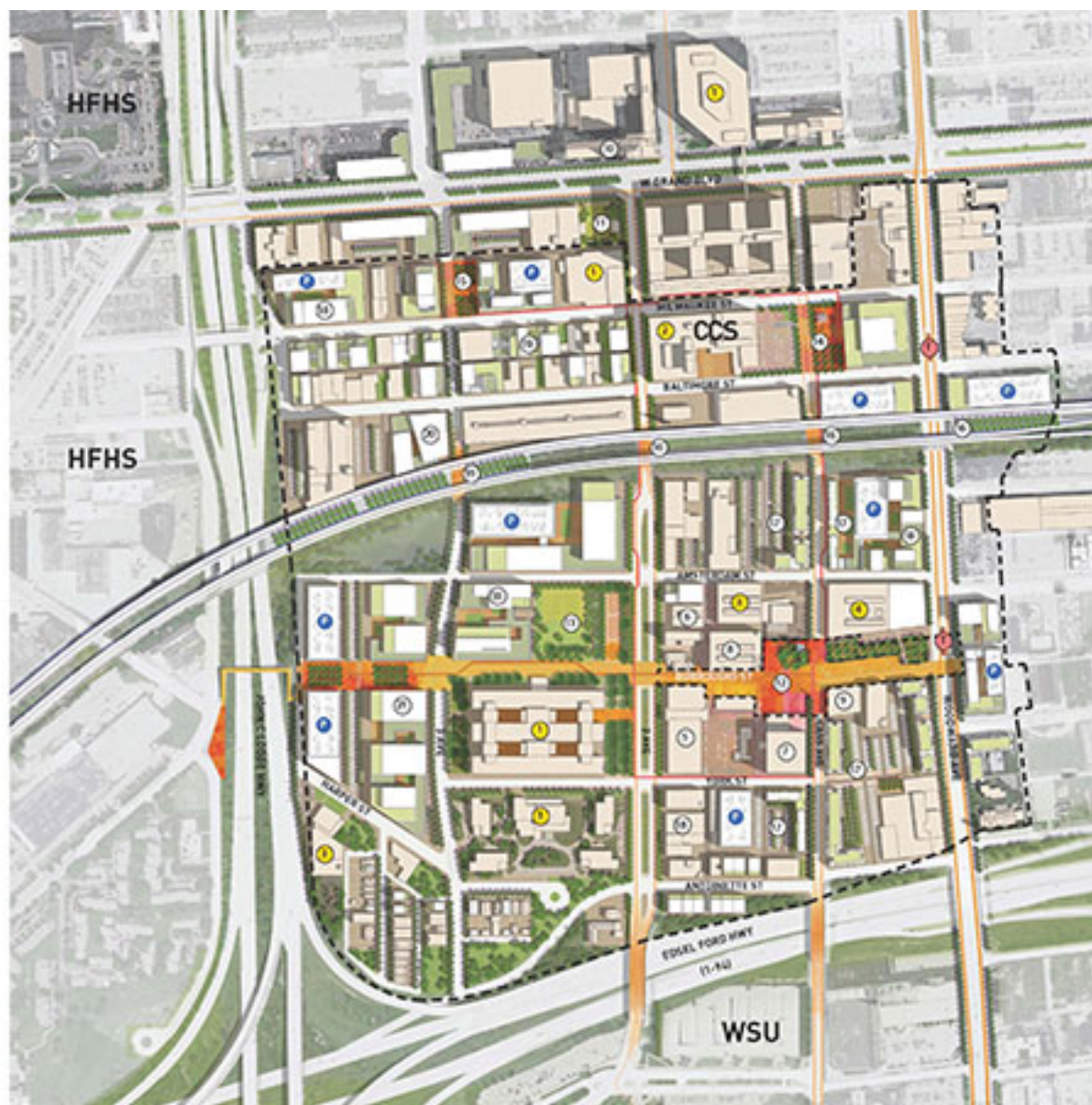
- 1 Henry Ford Health System (HFHS)
- 2 College for Creative Studies (CCS)
- 3 University Prep Academy
- 4 WSU Medical Biological Research Bldg (M3K3)

OTHER PROGRAMS

- 5 Next Energy
- 6 Detroit Children's Museum
- 7 Criminal Justice Bldg (Incubator)
- 8 Tech 1 (Incubator)
- 9 Wayne State University Police
- 10 Fisher Building
- 11 New Center Park

PROPOSED INTERVENTIONS

- 12 Core Plaza
- 13 Community Park
- 14 CCS Plaza
- 15 North Plaza
- 16 Viaduct Improvements
- 17 Residential (Live / Work)
- 18 Co-working Space
- 19 Mixed-use (Live/Work, Galleries)
- 20 Rapid Prototyping Facility
- 21 Small Batch Manufacturing
- T Light Rail Transit Stop



SOUTH LAKE UNION

Re-imagined Urban Area • Seattle

The rapid revitalization of South Lake Union (“SLU”)—from a run-down, low-rise warehouse district a mere decade ago to a vibrant, mixed-use engine of housing, transit and global technology and life science firms today—stands out as one of the most dramatic urban transformations in the United States.

The transformation has been spearheaded by Vulcan Real Estate, a company owned by Microsoft co-founder Paul Allen. In the aftermath of a failed referendum to approve a public park, Vulcan began to assemble distressed properties in the area. In the early 2000's, it persuaded the University of Washington to locate its medical and bioscience campus in SLU. UW and the existing Fred Hutchinson Cancer Research Center fueled the growth of health care and life science firms. In the late 2000s, Amazon decided to locate its global headquarters in SLU, accelerating growth in not only housing and retail but also entrepreneurial businesses.

The growth of SLU has been marked by a close public/private partnership—including key public investments to build transit, fix congestion, and enhance energy—as well as extensive engagement of local neighborhoods and residents. Growth has been iterative and incremental and built on trust and collaboration.

RESEARCH TRIANGLE PARK

Urbanized Science Park • Raleigh-Durham

Recognizing that the 20th century model of suburban science parks demands an update, [Research Triangle Park \(RTP\)](#) leaders are working to urbanize portions of the 7,000 acre park and its environs.

Hailed as a center of innovation since the late 1960s, by the mid-2000s RTP stakeholders became concerned that the park's sprawling structure and closed research environment could hinder its long term success. In response, in 2012 the RTP foundation released a new 50-year [master plan](#) for physically remaking the area, with the purpose of both enticing workers to live nearby, and keeping and attracting firms that want to benefit from the "random collisions" that density and open innovation offer. "Many of today's knowledge workers expect amenities and opportunities to connect and share ideas in a socially dynamic setting," the plan observes. "The independent campuses at RTP, mostly hidden behind trees, do not reflect this trend."

Build-out of the urbanization plan will begin with Park Center, a nearly 100 acre site at the heart of RTP that will be redeveloped to include high-density residential and mixed-use buildings. RTP is also advocating for a new commuter rail system that would connect the park to the downtowns of Raleigh and Durham.

A map of Boston's Innovation District, showing the area between East Boston, South Boston, and the city center. The map highlights the harbor, the city skyline, and various landmarks. A yellow circle marks the Innovation District, with a pink triangle indicating a 15-minute walk from the harbor. Labels include 'EAST BOSTON', 'boston harbor', 'SOUTH BOSTON', 'Louis Boston', 'ICA', 'BIA Pavillion', 'Harpoon Brewery', 'Boston Design Center', '15 min. walk', '10 minutes to LOGAN INTERNATIONAL', and 'BEACH'.

How to grow

First, **build a collaborative leadership network**, a collection of leaders from key institutions, firms and sectors who regularly and formally cooperate on the design, delivery, marketing and governance of the district.

In advanced innovation districts in Barcelona, Eindhoven, St Louis and Stockholm, leaders found the Triple Helix model of governance to be fundamental to their success.

The Triple Helix consists of structured interactions between industry, research universities, and government.

A map of Boston's Innovation District, showing the harbor, downtown, and surrounding areas. The map highlights the Innovation District in yellow and green, with various landmarks and transportation routes marked. Labels include BEACON HILL, DOWNTOWN, CHINATOWN, SOUTH STATION, FORT POINT, EAST BOSTON, SOUTH BOSTON, BOA Pavillion, Harpoon Brewery, BCEC, and Boston Design Center. A large blue circle indicates a 15-minute transit area. A small airplane icon is shown near Logan International Airport, with a note '10 minutes to LOGAN INTERNATIONAL AIRPORT'. The text 'BOSTON'S INNOVATION DISTRICT' is prominently displayed in the bottom left.

How to grow

Second, **set a vision for growth** by providing actionable guidance for how an innovation district should grow and develop in the short-, medium- and long-term along economic, physical and social dimensions.

Most practitioners cite the importance of developing a vision to leverage their unique strengths—distinct economic clusters, leading local and regional institutions and companies, physical location and design advantages and other cultural attributes.

A stylized map of Boston's Innovation District. The map shows the harbor area with labels for East Boston, Downtown, South Station, Chinatown, Fort, South Boston, and Logan International Airport. A large blue area represents the harbor. A yellow and green highlighted area in the center represents the Innovation District. Within this area, two specific locations are marked with orange dots and labeled: 'BCEC' and 'Boston Design Center'. A large, semi-transparent blue circle is centered over the Innovation District. In the bottom left corner, the text 'BOSTON'S INNOVATION DISTRICT' is written in large, bold, blue capital letters. In the top right corner, there is a small grey airplane icon. The overall background is a light blue and white grid representing the city's street layout.

How to grow

Third, **pursue talent and technology** given that educated and skilled workers and sophisticated infrastructure and systems are the twin drivers of innovation.

Pursuing talent requires attraction, retention and growth strategies; integrating technology requires a commitment to top notch fiber optics (and, in some places, specialized laboratory facilities) to create a high quality platform for innovative firms.

A map of Boston's Innovation District, showing the harbor, downtown, and surrounding areas. The map highlights the Innovation District in yellow and green, with various landmarks and transportation hubs labeled. The text 'BOSTON'S INNOVATION DISTRICT' is prominently displayed in large blue letters at the bottom left. The map includes labels for East Boston, South Boston, South Station, Chinatown, Fort Point, Downtown, Beacon Hill, and Logan International Airport. Specific locations within the Innovation District are marked with orange dots and labeled: BOA Pavillion, Harpoon Brewery, BCEC, and Boston Design Center. A large airplane icon is shown in the upper right corner, and a large blue shape representing the harbor is in the upper center.

How to grow

Fourth, **promote inclusive growth** by using the innovation district as a platform to regenerate adjoining distressed neighborhoods as well as creating educational, employment and other opportunities for low-income residents of the city.

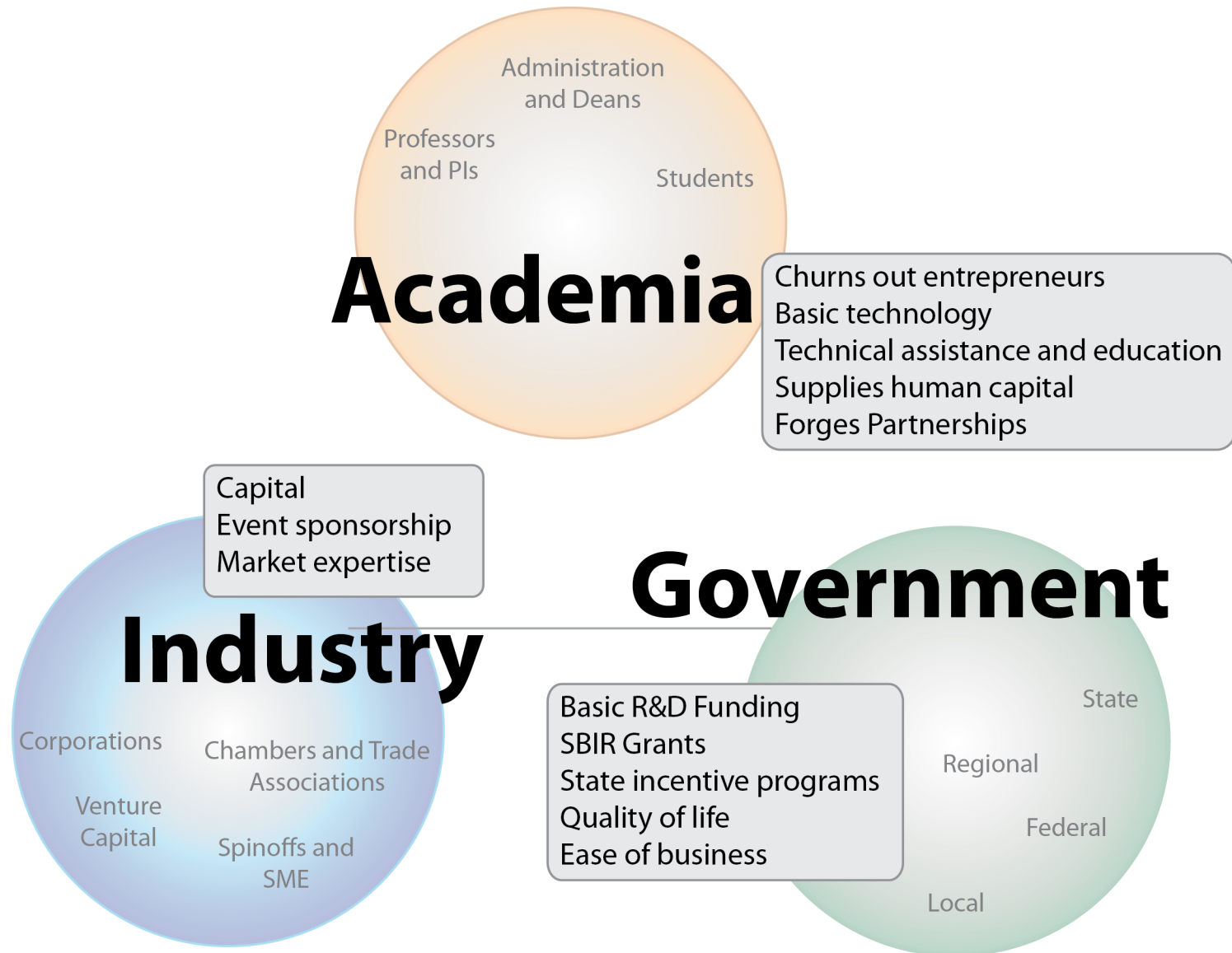
Strategies in places as disparate as Barcelona, Detroit and Philadelphia have particularly focused on equipping workers with the skills they need to participate in the innovation economy or other secondary and tertiary jobs generated by innovative growth.

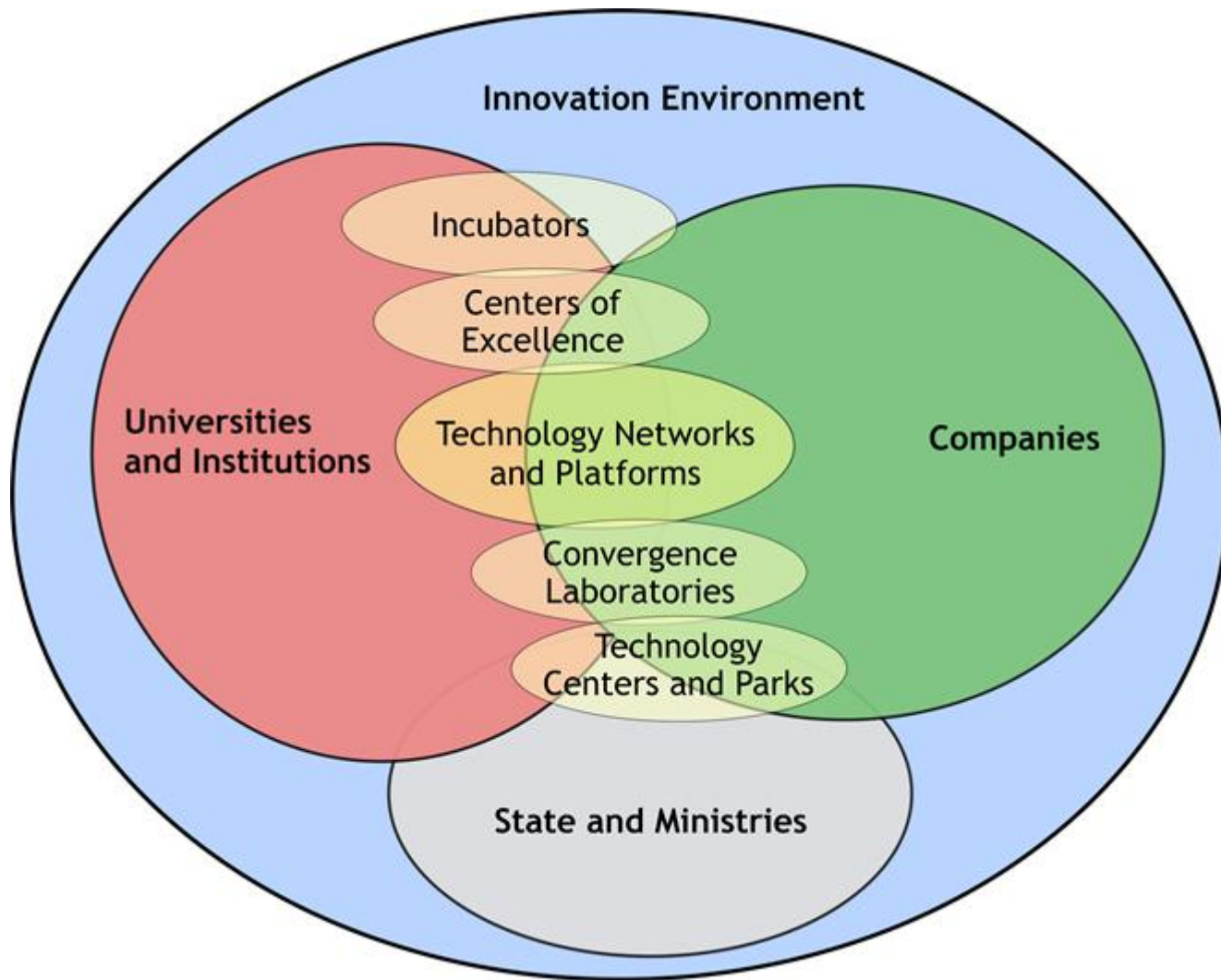
A map of Boston's Innovation District, showing the area between East Boston, South Boston, and Downtown Boston. The map highlights the harbor, the airport, and various landmarks like the Harpoon Brewery and Boston Design Center. A pink circle indicates a 15-minute walk area. The text 'BOSTON'S INNOVATION DISTRICT' is prominently displayed in the bottom left.

How to grow

Finally, **enhance access to capital** to support basic science and applied research; the commercialization of innovation; entrepreneurial start-ups and expansion (including business incubators and accelerators); urban residential, industrial and commercial real estate (including new collaborative spaces); place-based infrastructure (e.g., energy, utilities, broadband, and transportation); education and training facilities; and intermediaries to steward the innovation ecosystem.

Districts in Cambridge, Detroit and St. Louis have successfully re-deployed local capital to meet these needs.









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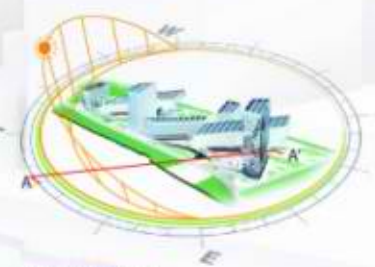
RAIN GARDENS
- REDUCE STORMWATER RUNOFF
- IMPROVE WATER QUALITY

TREES
- PRESERVE AS MANY MATURE, EXISTING TREES AS POSSIBLE
- REDUCES HEAT GAIN
- CLEANS AIR

GREEN ROOF
- CAPTURES + RETAINS RAINWATER
- SUSTAINS PLANT LIFE + NATURAL HABITAT
- REDUCES HEAT ISLAND EFFECT + COOLING LOADS

EFFICIENT BUILDING ENCLOSURE
- LOUVER SYSTEM TO REDUCE HEAT GAIN AND GLARE
- OPERABLE WINDOWS

BUILDING INTEGRATED PHOTOVOLTAICS
- EFFICIENT ENERGY SOURCE



SUN ARC DIAGRAM
- CAMPUS BUILDINGS FACE FULL ARC OF THE SUN
- MAXIMIZING SOLAR ENERGY + DAYLIGHT

VOID SPACE
- ALLOWS DAYLIGHT TO REACH INTERIOR SPACES
- PROVIDES A VISUAL CONNECTION TO COLLABORATIVE INTERIORS
ROOSEVELT ISLAND SHUTTLE BUS

RAINWATER CISTERN
- USED FOR LANDSCAPE IRRIGATION

PHOTOVOLTAIC TREE LIGHT
- NEW TYPE OF HYBRID SHADE + LIGHT STRUCTURE

COMMUNITY GARDEN
- PROVIDES FARMING SPACE
- PROMOTES HEALTHY LIVING BY PROVIDING FRESH PRODUCE

HEAT & POWER PLANT

CENTRAL GEOTHERMAL HEAT PUMPS

EFFICIENT MEP INFRASTRUCTURE
- RADIANT CEILING PANELS
- DISPLACEMENT VENTILATION
- OPERABLE WINDOWS
- RAISED FLOOR SYSTEM

GEOTHERMAL FIELD
- EFFICIENT HEATING + COOLING SYSTEM

PROPOSED