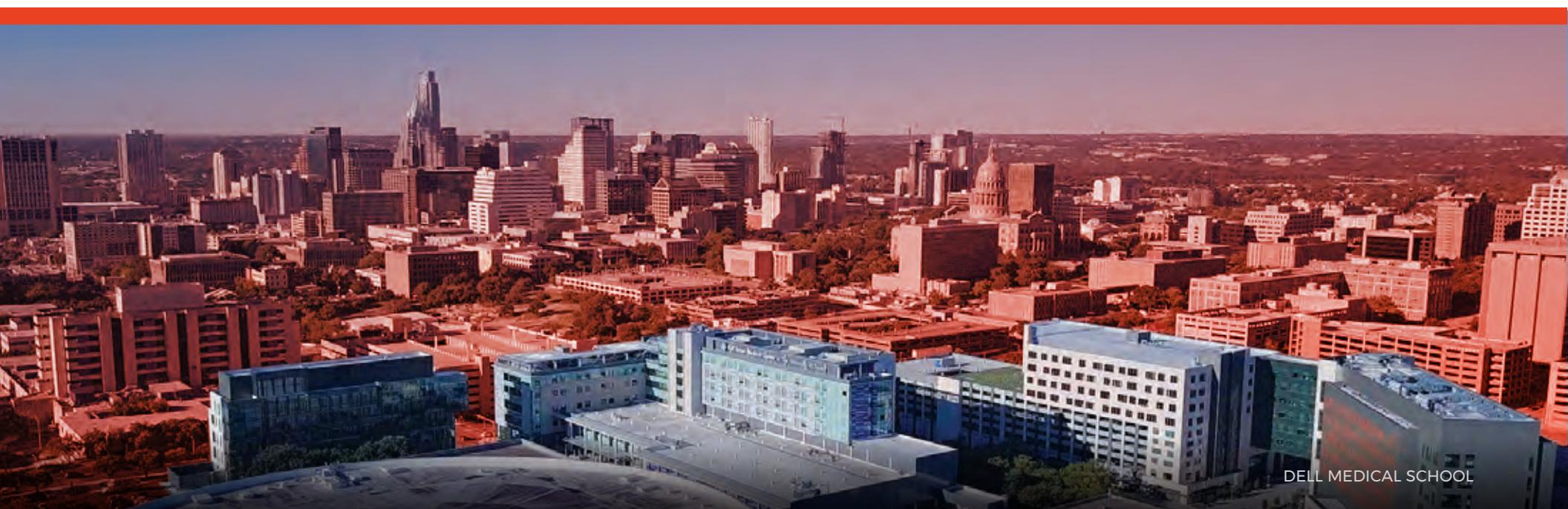


AUSTIN'S INNOVATION DISTRICT

KEY FINDINGS: MARKET DEMAND AND ECONOMIC IMPACT ANALYSIS



DELL MEDICAL SCHOOL

Analysis prepared by HR&A Advisors, Inc. and Perkins + Will
Commissioned by Downtown Austin Alliance and Capital City Innovation



Study Acknowledgements

This study was prepared by HR&A Advisors, Inc. and Perkins+Will on behalf of the Downtown Austin Alliance and Capital City Innovation, Inc. The **Downtown Austin Alliance** leads a broad range of programs and initiatives that create, preserve, and enhance the value and vitality of downtown Austin and they commissioned this study in early 2019. **Capital City Innovation, Inc.** was founded by The University of Texas at Austin, Seton-Ascension Health, and Central Health and now includes the Downtown Austin Alliance and Opportunity Austin. This highly collaborative process was guided by a dedicated steering committee that came together to create a plan for collective action to advance the vision of the Austin Innovation District. This study involved contributions from a broad range of stakeholders and would not have been possible without the expertise and insight of the following individuals and entities.

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Study Context

This study was designed to assist CCI and its partners with developing a strategy for guiding the emergence and growth of the Austin Innovation District. Over a 4-month scope of work, the HR&A Team conducted a comprehensive market analysis, analyzed the incremental impacts of district development, and prepared a high-level action plan to inform next steps in district development. The goal was to guide the creation of inclusive, place-based, and market-guided economic development and real estate strategies that would unlock value and opportunity for the Downtown neighborhood anchored by the University of Texas at Austin's new Dell Medical School, Dell Seton Medical Center, and the Central Health Downtown campus.

PROJECT SCOPE OF WORK



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MARKET ANALYSIS

REGIONAL ECONOMY

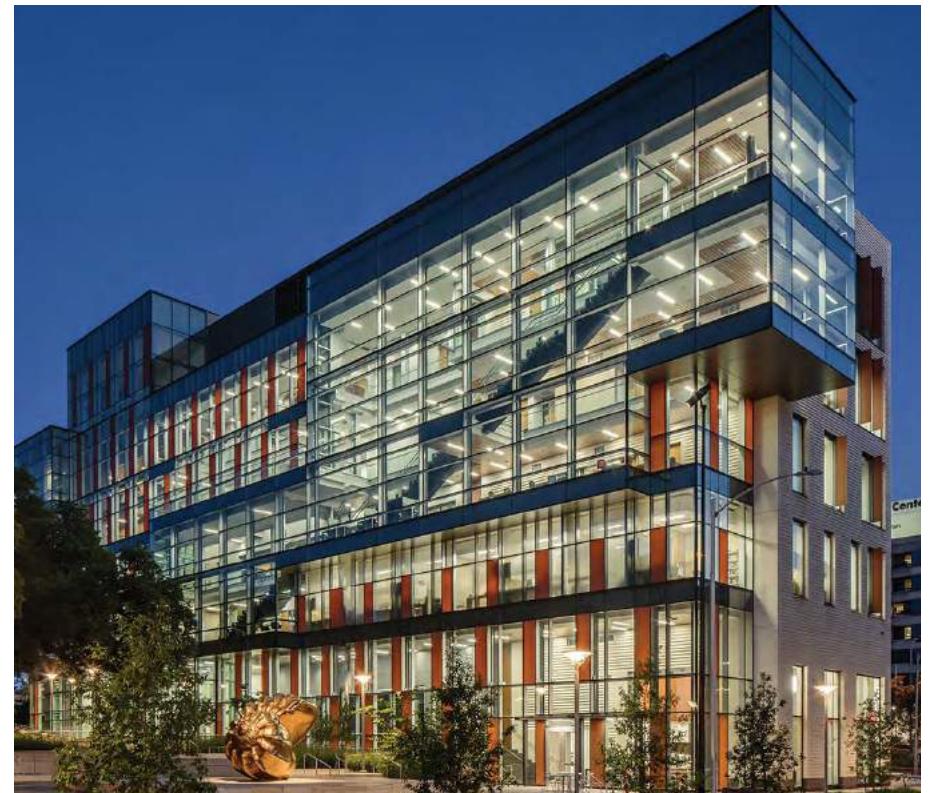
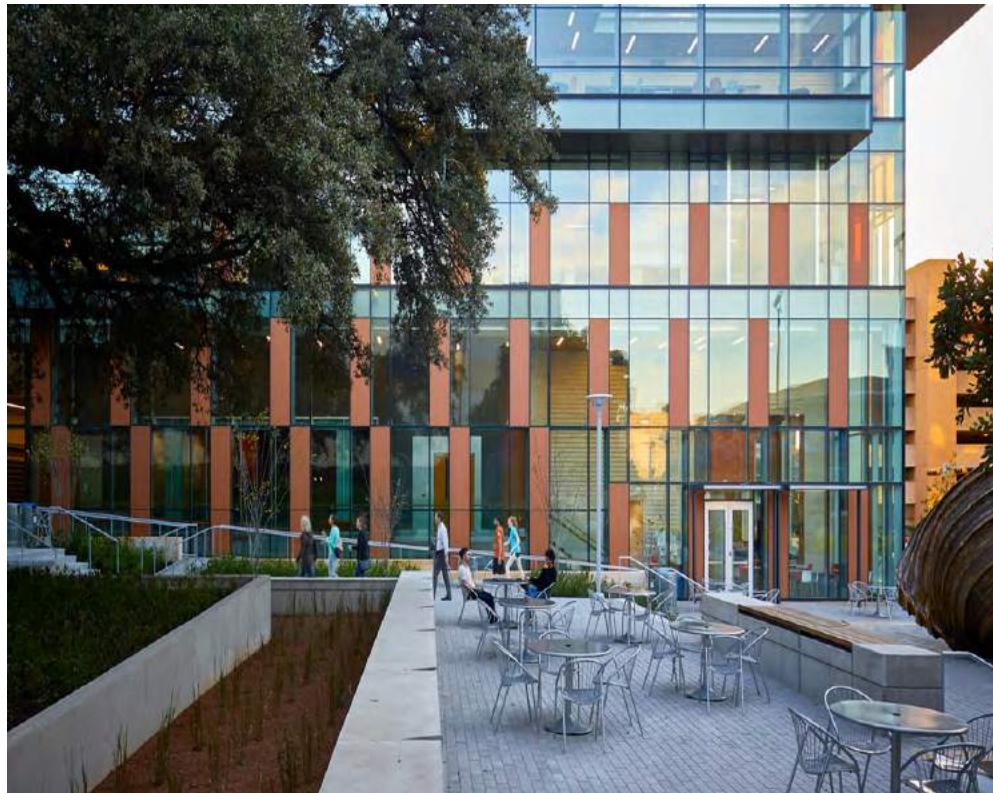


The Austin MSA is one of the country's fastest-growing regional economies, with growth concentrated in high-paying, knowledge-sector jobs.



Since 2010, employment in the Austin MSA has grown by more than 31% from 850,000 to 1,120,000 total jobs. Growth has primarily been concentrated in high-paying, knowledge-sector industries such as Professional Services, Healthcare, Information, and Advanced Manufacturing. Economists assert that Austin's future economic outlook continues to look bright and strong sectors like Technology as well as emerging sectors like Healthcare and Life Sciences are all poised for continued growth.

The establishment of UT Dell Medical School has created an opportunity to position Austin at the cutting edge of health innovation.



Created in 2012 with the support of Travis County and the backing of State officials, the UT Austin Dell Medical School is the **first new medical school at a Tier 1 university in half a century**. UT Dell Med's mission is focused on inclusive, community-based approach to healthcare and the school is committed to **redesigning existing models of health delivery in a way that better serves society**. This significant investment **presents an opportunity to foster the growth of an Innovation District anchored by the school that accelerates innovation and cross-industry collaboration in Healthcare, Life Sciences, and Technology**.

We evaluated three clusters to better understand the evolution of Austin's economy and the opportunity to support a Health & Life Sciences Innovation District.



Technology is Austin's premier industry cluster and it has a highly concentrated, growing, and mature ecosystem.

	2010 Technology Jobs	2018 Technology Jobs	Growth %	Share of 2010 Total Jobs	Share of 2018 Total Jobs	% In-region Purchases	% Imported Purchases	2018 Location Quotient	Competitive Component
Austin	52,000	84,000	63%	6%	8%	87%	13%	2.24	45%
Boston/Cambridge	167,000	198,000	19%	6%	7%	84%	16%	1.98	1%
San Fran.	132,000	224,000	70%	6%	8%	84%	16%	2.45	52%
Philadelphia	95,000	95,000	0%	3%	3%	58%	42%	0.91	(17%)
Durham	31,000	27,000	-11%	10%	8%	65%	35%	2.18	(29%)
Atlanta	104,000	121,000	17%	4%	4%	75%	25%	1.24	(1%)

HR&A compared Austin to five peer geographies that include an Innovation District. In Austin, the **Technology industry is by far the strongest industry cluster** in the region and from 2010 to 2018 it grew by 63%, which is **second only to San Francisco's growth of 70%**. Ballooning from 52,000 to 84,000 jobs, Technology accounts for 8% of total jobs in the Austin MSA and has a location quotient of 2.24, indicating that the **industry cluster is highly concentrated in the region** relative to the rest of the country. Only San Francisco (2.45) and Durham (2.28) have higher location quotients. Additionally, 87% of the purchases that support the Technology industry are made in-region, the most of any peer geography. This indicates that there is **deep and expansive Technology ecosystem in the Austin MSA**. While Austin was traditionally strong in hardware and semiconductors, the industry has diversified to include a widespread focus on software. Over the last decade, **Health Tech has emerged as a growing subsector** in this cluster. As medical treatments, healthcare delivery, and the study of life becomes increasingly digital, new and innovative startups have begun to operate at the intersection of industries that were once siloed.

Source: EMSI; Note: The Competitive Component is equal to the total % growth in a given industry less the national % growth in the same industry – if positive, this indicates the industry is growing more in the given region than at the national level, and if negative, this indicates the industry is growing less in the given region than at the national level.

Healthcare has recently experienced significant growth in Austin but there is more opportunity for Austin to expand to the levels of peer geographies.

	2010 Healthcare Jobs	2018 Healthcare Jobs	Growth %	Share of 2010 Total Jobs	Share of 2018 Total Jobs	% In-region Purchases	% Imported Purchases	2018 Location Quotient	Competitive Component
Austin	42,000	60,000	44%	5%	5%	29%	71%	0.76	27%
Boston/Cambridge	222,000	256,000	15%	9%	9%	38%	62%	1.23	(1%)
San Fran.	141,000	173,000	22%	7%	6%	93%	7%	0.91	6%
Philadelphia	229,000	261,000	14%	8%	9%	36%	64%	1.21	(2%)
Durham	40,000	44,000	8%	13%	12%	60%	40%	1.76	(8%)
Atlanta	124,000	166,000	34%	5%	6%	35%	65%	0.82	17%

In 2018, Austin's Healthcare industry cluster represented 5% of total employment with over 60,000 jobs. **Healthcare in Austin has grown by 44% since 2010, outpacing all peer geographies.** The competitive component also indicates that this cluster is growing 27% faster than the nation overall. Growth in Healthcare is **tied to population growth** and from 2010 to 2017, the Austin MSA's population grew by 23%, ranking it among the fastest growing metro areas in the country. Today, 29% of the total \$800 million purchases made by this industry are made in-region. If this share was increased to 40% (on par with Boston/Cambridge) then this would divert approximately \$303 million back into the Austin MSA economy. Although this cluster is growing, it is still has **the lowest share of jobs and regional concentration among all peer geographies.** However, recent investments in UT Dell Med may begin to shift this trend and are already attracting companies like Merck to Austin. Large-scale disruption in Healthcare caused by advances in Technology will also continue to reshape how we think about healthcare delivery and outcomes, expand the possibilities for inter-industry collaboration, and facilitate accelerated growth of the cluster in Austin.

Source: EMSI; Note: The Competitive Component is equal to the total % growth in a given industry less the national % growth in the same industry – if positive, this indicates the industry is growing more in the given region than at the national level, and if negative, this indicates the industry is growing less in the given region than at the national level.

Life Sciences are nascent in Austin but recent growth trends and the relationship to Austin's Technology sector suggest it is poised to expand and mature.

	2010 Life Science Jobs	2018 Life Science Jobs	Growth %	Share of 2010 Total Jobs	Share of 2018 Total Jobs	% In-region Purchases	% Imported Purchases	2018 Location Quotient	Competitive Component
Austin	4,600	5,300	17%	1%	0%	45%	55%	0.71	6%
Boston/Cambridge	53,900	66,500	23%	2%	2%	71%	29%	3.35	12%
San Fran.	31,100	50,700	63%	1%	2%	70%	30%	2.79	52%
Philadelphia	43,800	41,200	-6%	2%	1%	48%	52%	1.99	(17%)
Durham	11,400	11,700	3%	4%	3%	57%	43%	4.94	(8%)
Atlanta	8,400	8,700	4%	0%	0%	29%	71%	0.45	(7%)

In the Austin MSA, the Life Sciences industry cluster has a **small share of overall employment with 5,300 jobs representing 0.5% of total employment in 2018**. This places it second to last in terms of Life Sciences cluster employment rankings among peer geographies. Austin's Life Sciences industry has a **location quotient of 0.71** which is ahead of only Atlanta (0.45) and less than half the relative concentration of the next lowest Philadelphia (1.99). However, there is reason to believe that Life Sciences has the potential to become more engrained in Austin. The Life Sciences industry cluster **grew by 17% from 2010 to 2018, more than any other peer geography save for established hubs in Boston/Cambridge and San Francisco**. The competitive component reveals this **outpaced national growth** in Life Sciences by 6% while Philadelphia, Durham, and Atlanta all had negative values for the same metric. As evidenced by the **low shares of industry purchases made in-region (45%)** compared to places like Boston/Cambridge (71%) and San Francisco (70%), Austin's Life Sciences industries have a less mature ecosystem. As Life Sciences continues to grow, there will be opportunities for it to further integrate with Technology and Healthcare to develop a robust ecosystem that will bring more purchases into the region, spur economic growth, and position Austin at the vanguard of this evolving field.

Source: EMSI; Note: The Competitive Component is equal to the total % growth in a given industry less the national % growth in the same industry – if positive, this indicates the industry is growing more in the given region than at the national level, and if negative, this indicates the industry is growing less in the given region than at the national level.

As the national economy grapples with the convergence of these clusters, Austin's strengths in Technology have positioned it to capitalize on this opportunity.

“Trends Influencing Life Sciences Innovation: artificial intelligence, machine learning, internet of things...”

- Digitalist Mag (Aug 2018)

“Digital technology is transforming the life sciences industry...”

- Wearable Technologies (Feb 2019)

“Just as data and the intelligent interpretation of that data changed the face of retail, a similar revolution is happening in healthcare as science, technology and regulation all advance to change how and where patients' health and wellness needs are met...The technology trends that have the greatest near-term impact on the life science industry as it reconfigures itself to deliver patient and economic outcomes includes: data veracity, frictionless business and citizen AI...”

- American Pharmaceutical Review (Oct 2018)

“Increasingly, life sciences organizations are moving towards structured data and content management, automated extraction and translation, natural language processing, and the use of artificial intelligence for predictive analytics...”

- Accenture (Mar 2019)

“From cloud computing to robotics to virtual reality to blockchain, the potential impact of tech on the rapidly-evolving life sciences space is enormous...”

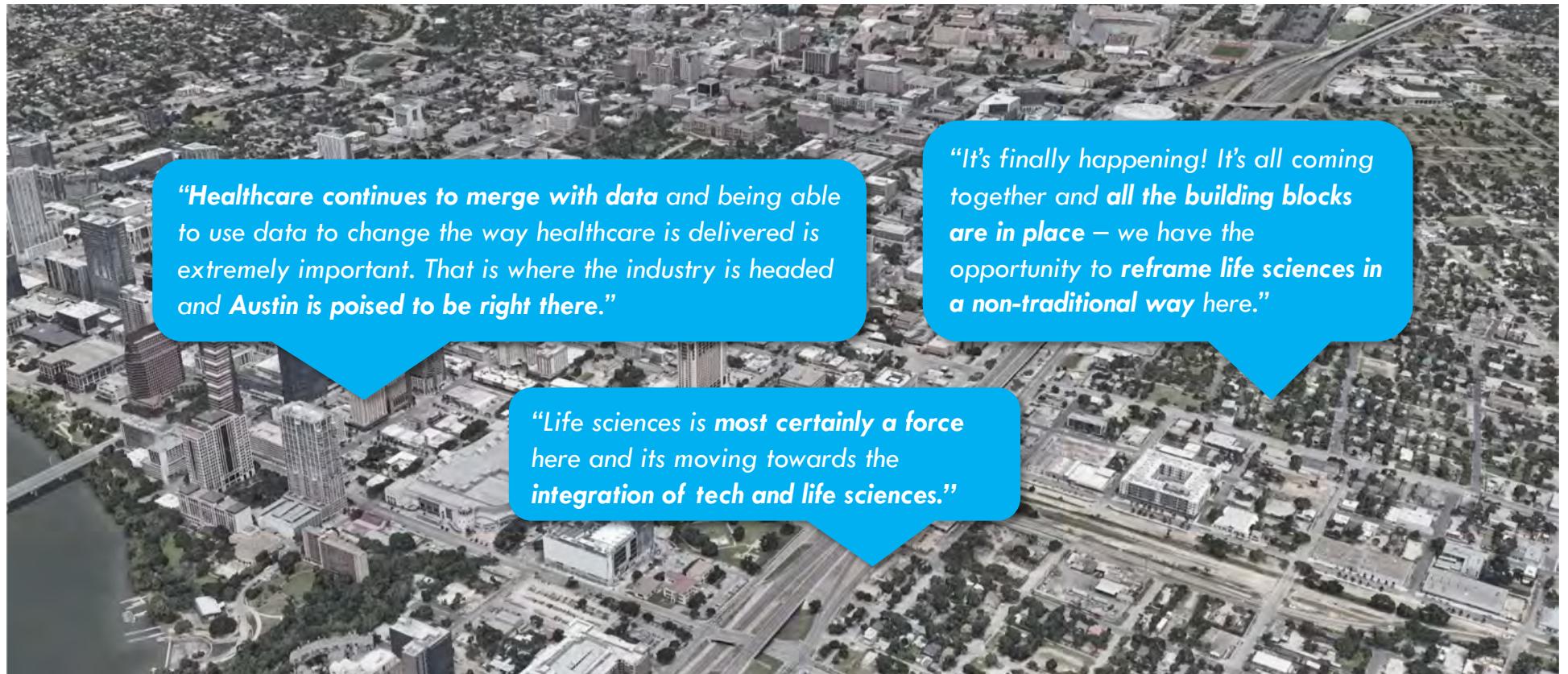
- Quanta CS (Nov 2018)

Austin has captured the country's imagination as a place where Tech innovation happens but Health Tech is an increasingly important part of this ecosystem.



A testament to Austin's opportunity to capitalize on the national convergence of these sectors, is the recruitment of Merck and Athenahealth which are both planning to create more than 1,200 jobs Downtown. **Merck**, a leading pharmaceutical company, recently opened a new office in Austin for its IT organization, securing a space in UT Dell Med's Health Discovery Building as well as an additional space in Capital Factory. The IT organization at Merck is responsible for developing technology solutions to support the invention of novel medicines and the ways in which it reaches the end consumer. In statements made about their selection of Austin, Merck noted its increasing reliance on "sophisticated software applications and computing infrastructure", reiterating that their interest in Austin stemmed directly from the recognition that a technology hub and a technology skilled workforce was crucial to the future of their work in Healthcare and Life Sciences. Additionally, Merck's decision was driven by the unique opportunity to collaborate directly with UT Dell Med on their mission to transform the future of community healthcare. Merck has promised to bring more than 600 high-paying jobs to Downtown, occupying up to 90,000 square feet of office space by 2020. **Athenahealth** similarly operates at the intersection of Technology and Healthcare providing cloud services, management tools, and other patient engagement solutions. The company was previously located at the Domain in Austin but relocated to Downtown's Seaholm District where it plans to add 600 employees in 10 years. In 2017, the company closed two of their offices in San Francisco and Princeton, retaining just three offices in Belfast (headquarters), Atlanta, and Austin. Athenahealth's attraction to Austin was in part driven by access to a qualified talent pool equipped with technology skills that directly correspond to their workforce needs. Beyond Merck and Athenahealth, over the last decade, many companies headquartered in San Francisco and Silicon Valley have either relocated to Austin or established a sizable presence in the region. This agglomeration of leading technology innovators in conjunction with Technology's growing influence on Healthcare and Life Sciences has created a **constellation of firms operating at the intersection of these fields in the emerging specialization known as Health Tech**. This intersection includes medical devices, healthcare delivery, big data, autonomous artificial intelligence, diagnostics, virtual care, healthcare block chain data storage, and more.

Austin must guide the emerging Life Sciences ecosystem with intention to take full advantage of this opportunity.



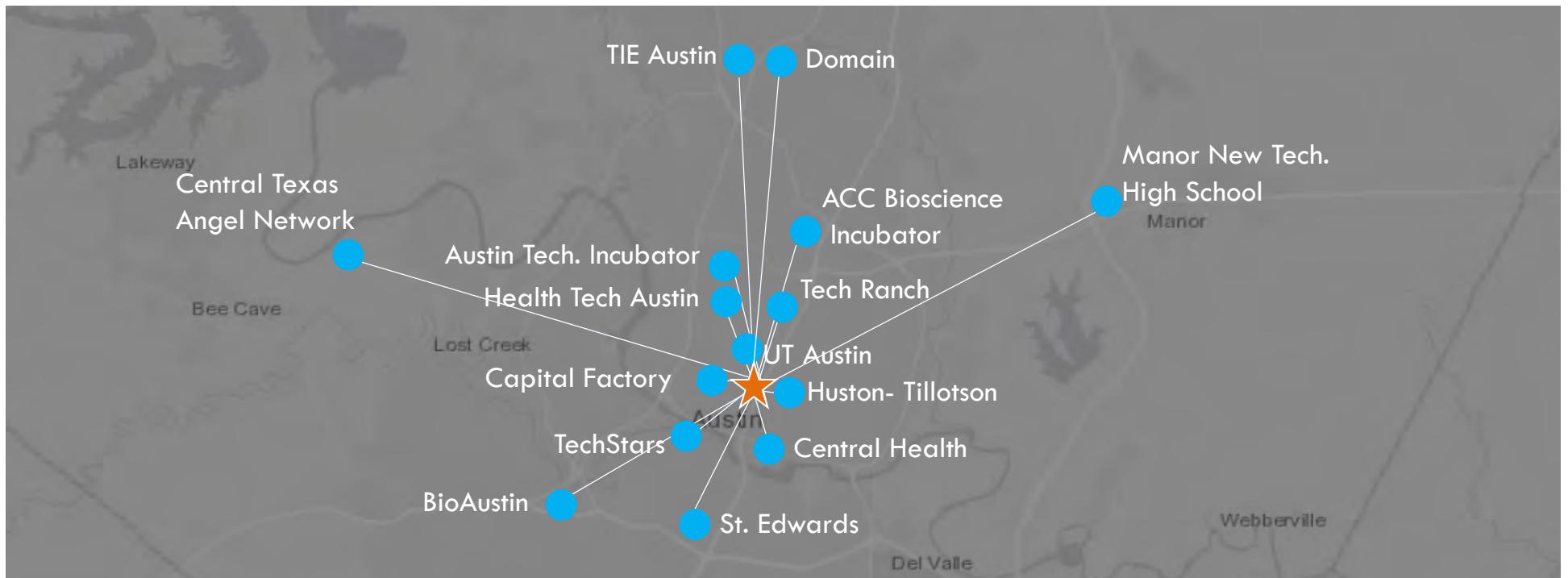
"Healthcare continues to merge with data and being able to use data to change the way healthcare is delivered is extremely important. That is where the industry is headed and Austin is poised to be right there."

"It's finally happening! It's all coming together and **all the building blocks are in place – we have the opportunity to **reframe life sciences in a non-traditional way** here."**

"Life sciences is most certainly a force here and its moving towards the integration of tech and life sciences."

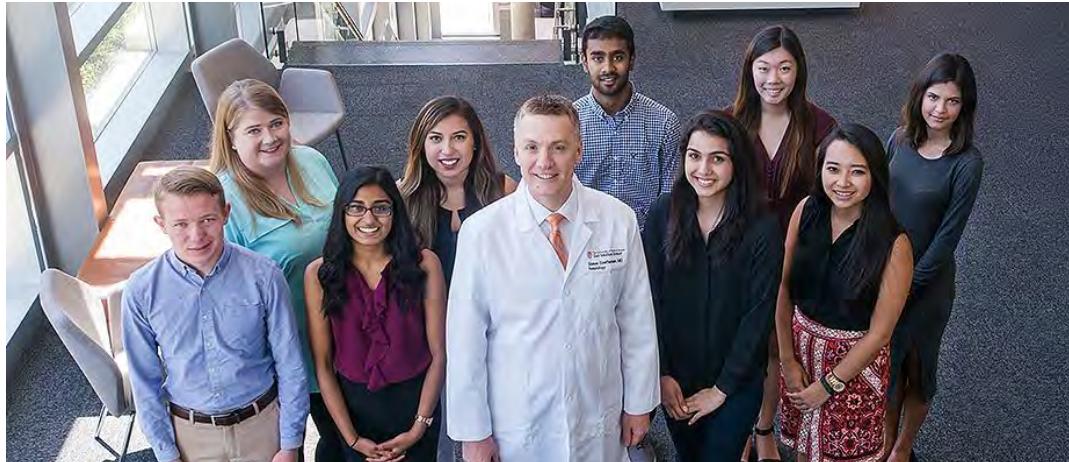
Austin is already on a strong path economically and by all accounts employment growth will continue. However, there are opportunities to act now and steer the current momentum in a way that will garner even more benefits and leave the City in a more robust, more diversified economic position than it would be under a business-as-usual case. Those opportunities lie in intentionally aligning the Technology, Healthcare, and Life Sciences industry clusters to build a flourishing ecosystem. To accomplish this goal, it is essential for Austin to support the development of an Innovation District as a physical place anchored by UT Dell Med.

An Innovation District can allow Austin to concentrate resources that promote industry interaction and collaboration.



An Innovation District is the **physical manifestation of active collaboration** between these target industries. The closer in proximity these institutions and anchors are, the better they can work together to strengthen current industrial intersections and build new intersections all together. With Life Sciences, Healthcare, and Technology dispersed throughout different parts of the region, the Innovation District represents an **opportunity to bring parts of these industries to a central location Downtown**. As Health Tech and other intersections grow, they can enjoy the cost savings and productivity gains that come with economies of agglomeration (transportation, labor, intellectual capital, etc.). This district does not have to compete with other established hubs but rather it can **compliment those locations by promoting flexibility in attracting talent and creative energy**. The Central Business District and the Domain already have this relationship in the office market, with companies like Facebook and Indeed establishing a presence at both locations. A similar strategy could be implemented as part of positioning the Innovation District within Austin's broader landscape.

In addition to benefiting Austin's economic position, investing in the growth of Life Sciences can expand inclusive economic opportunities.

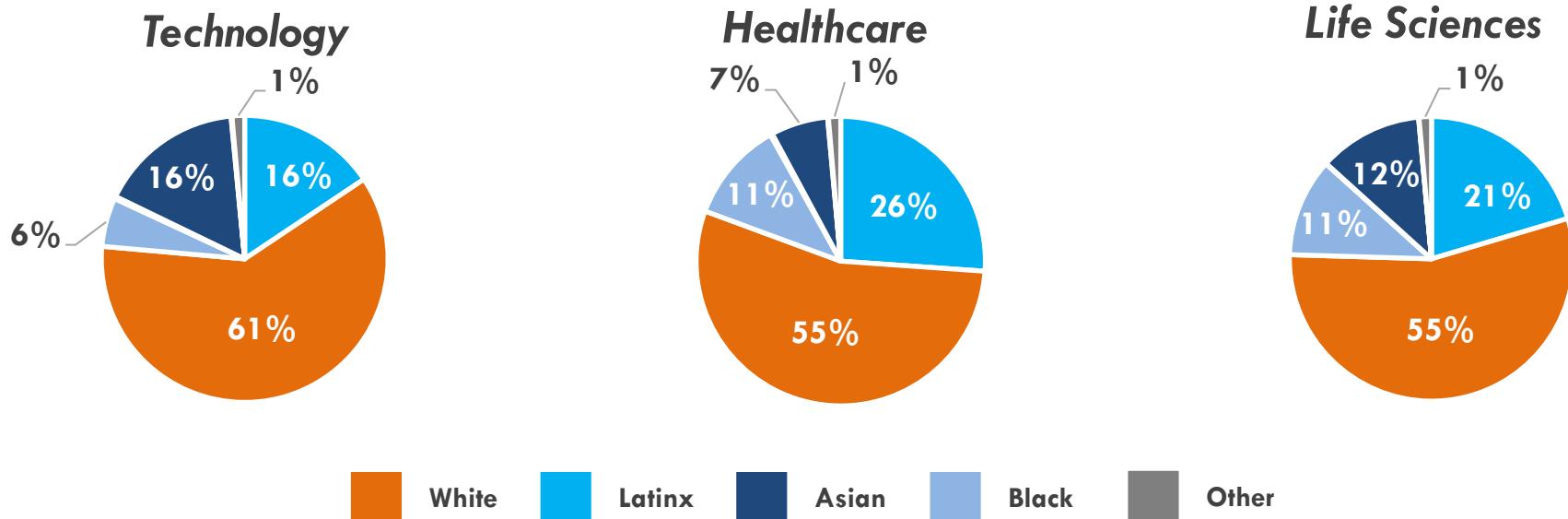


UT Dell Med and Huston-Tillotson University, a historically black university, partnered to create the [Health Leadership Apprenticeship Program](#) which is a semester-long apprenticeship that offers students and recent grads real-world exposure and the chance to work alongside Dell Med faculty and staff on projects tied to health transformation.

As noted previously, **Austin's economic standing in the national context is strong**, as are its growth trends in both jobs and population. Many may view this as reason to not intervene in the current trajectory of the region, but there are **benefits to Innovation District development that extend beyond pure economics**. There is significant energy in Austin dedicated to ensuring that employment and economic opportunities are available to the wider regional population across the spectrum of race, gender, and educational attainment. **The Technology industry, particularly in places like Austin and San Francisco, has the perception of being dominated by white, male employees.** However, intentional investments to foster an ecosystem at the intersection of industries with a more diverse base of employees like Life Sciences and Healthcare can **enhance the possibility for growth and development to offer substantive benefits and wealth-building opportunities for historically marginalized communities in Austin**. Additionally, workforce development programs can build on these industry dynamics to further expand access to quality jobs and the representation of diverse groups in new employment opportunities that are created at the convergence of these sectors.

The Innovation District can help create diverse economic opportunities that include historically marginalized populations.

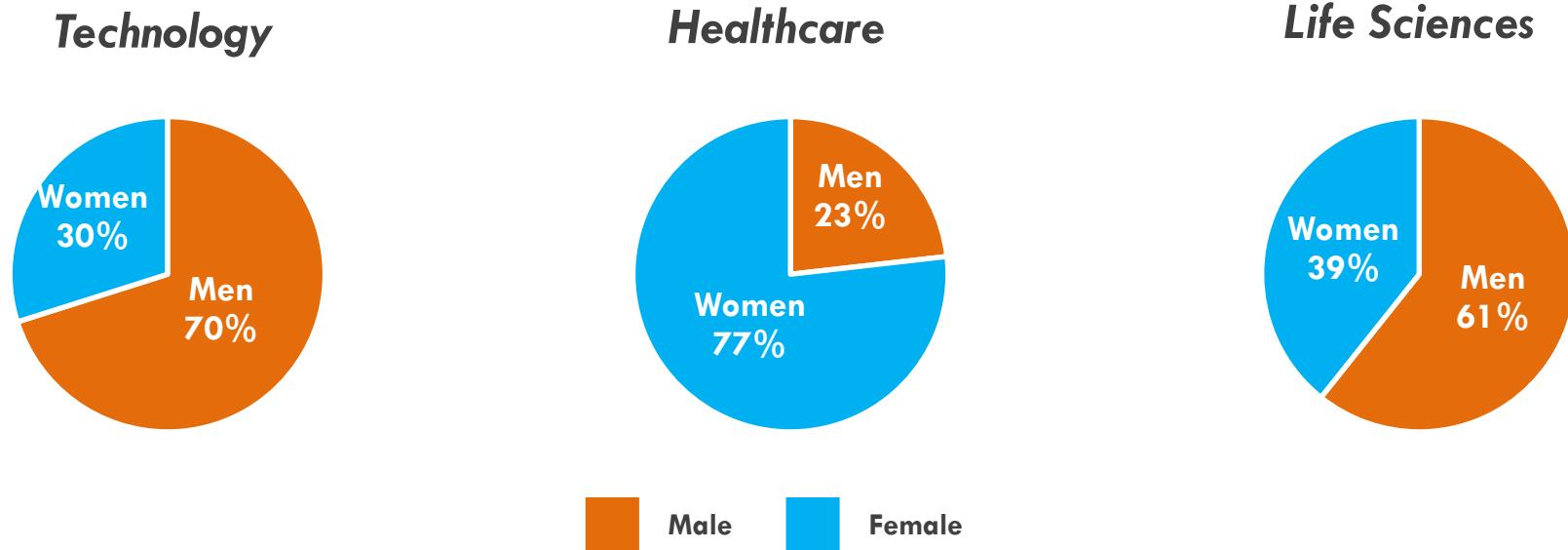
AUSTIN RACIAL DISTRIBUTION BY INDUSTRY CLUSTER



White and Asian populations account for 59% of the workforce in the Austin MSA. However, **they are overrepresented in the Technology industry (77%)** while closer to proportionally represented in Healthcare (61%) and Life Sciences (67%). Historic inequities have limited the educational attainment and employment opportunities of Latinx and Black populations, which account for 39% of the Austin regional workforce. This understanding helps to contextualize this local population's significant underrepresentation in the Technology industry (22%). While workforce diversity could improve in all of these clusters, Healthcare and Life Sciences are relatively more diverse than Technology, so the convergence of these industries could help **increase the overall representation of these underrepresented demographic groups in fast growth industries and the economic opportunity that is available to these historically marginalized populations.**

Promoting growth in Healthcare and Life Sciences has the potential to significantly improve equitable gender representation.

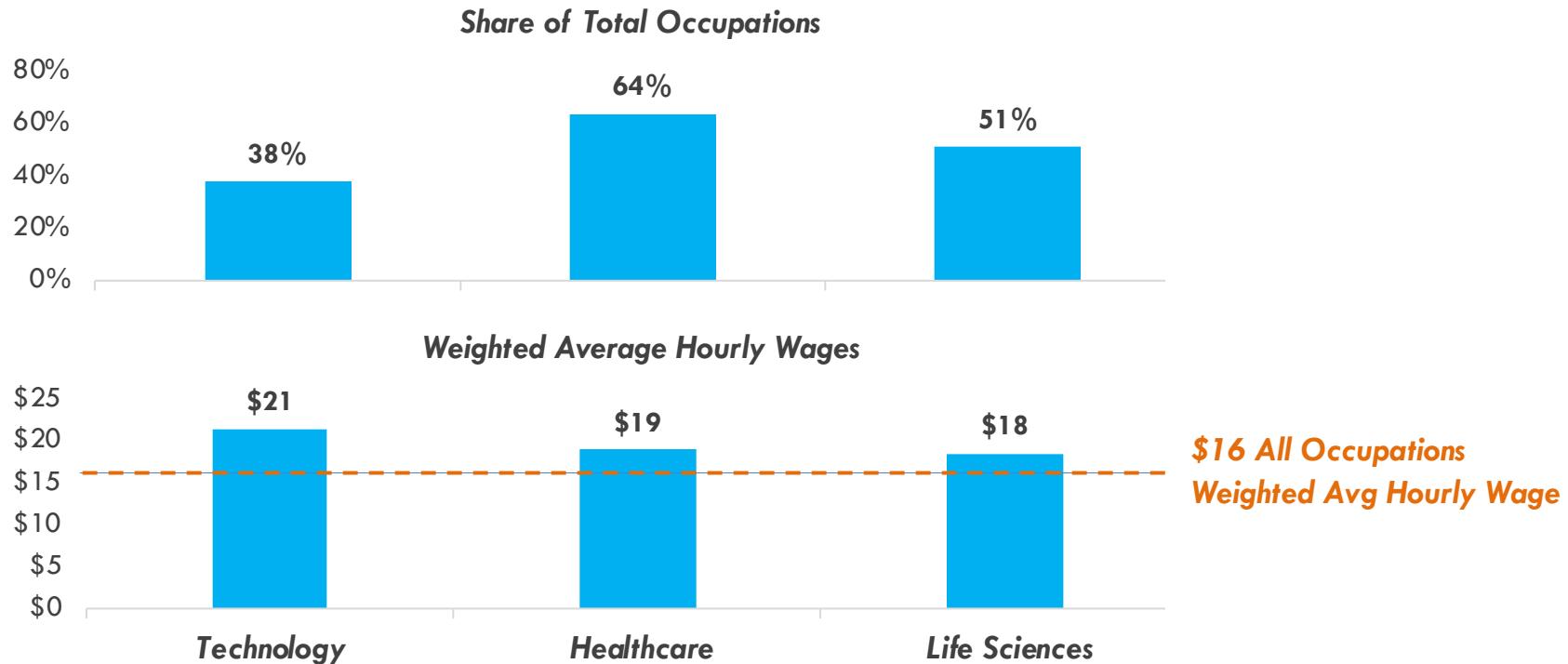
AUSTIN GENDER DISTRIBUTION BY INDUSTRY CLUSTER



The high-paying **Technology industry cluster in Austin** is currently 70% male while males only account for 52% of the overall regional workforce. In contrast, Life Sciences is more balanced with 61% of jobs filled by males and Healthcare is skewed in the opposite direction with just 23% of jobs filled by males. By growing these other industries, Austin can provide more opportunities for diverse segments of the population to access quality jobs and when coupled with effective workforce development training programs, **positively contribute to the gender diversity in the Austin economy**. Additionally, workforce development programs specifically designed to target underrepresented groups and expand education, training, and hands-on learning opportunities for these populations will be crucial to ensuring that substantial and enduring improvements are made to the composition of the innovation industry in Austin.

The Innovation District can improve access to quality, high-paying jobs for residents with lower levels of formal education.

OCCUPATIONS REQUIRING LESS THAN BACHELORS DEGREE



Between these three industry clusters, Technology has the lowest share of jobs available to individuals with lower levels of formal education. Only 38% of Technology occupations require less than a Bachelors degree while **more than half of the occupations in both Healthcare and Life Sciences are available to individuals with less than a Bachelors**. For occupations requiring less than a Bachelors degree, jobs in all three of these industries pay higher hourly wages than the region's weighted average wage for employees with this level of education. While Technology pays the most (31% more than the average), **Healthcare and Life Sciences occupations pay 19% and 13% more, respectively**. These findings suggest that fostering growth across these sectors will increase access to quality, higher paying jobs for a greater portion of local residents and expand the number of quality employment opportunities available to individuals without a four-year degree.

Based on its current trajectory, Austin is poised for more growth but the Innovation District is an opportunity to intentionally steer its economic future.

STRENGTHS

- Strong economy heavily concentrated in growing knowledge sectors
- Mature, robust, and expansive Technology ecosystem
- Global reputation as a thriving hub for Tech Innovation
- Higher wages in Technology, Healthcare, and Life Sciences

OPPORTUNITIES

- Health Tech growth has emerged organically at the intersection of Technology and Life Sciences
- Foster a diversified economy grounded in multiple pillars of growth that offer quality jobs
- Create a new era of inclusive growth that benefits a broader spectrum of Austin residents

WEAKNESSES

- Lack of awareness about emerging Life Sciences activities
- Life Sciences growth is organic and fragmented across the region with minimal coordination between different hubs
- The Technology sector lacks diversity in its workforce

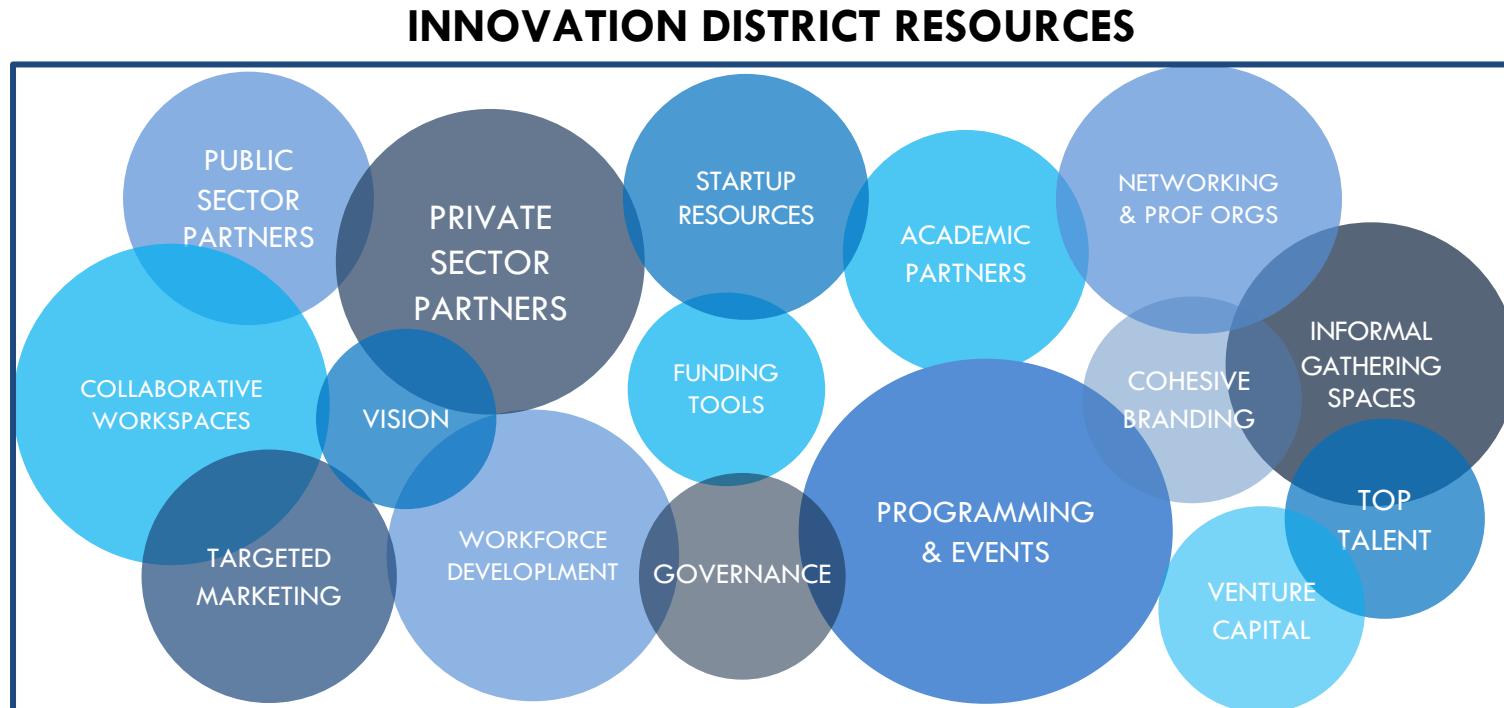
THREATS

- Without intentional interventions and workforce development programs, success of Tech will lead to greater income inequality especially for historically marginalized populations
- If Austin does not diversify from Tech, its dependency on a single industry could leave it vulnerable to macroeconomic shifts

INNOVATION ECOSYSTEM



Innovation Districts manifest in various physical forms but a successful and enduring ecosystem depends on a strong foundation of resources.



Austin already contains many of the essential buildings blocks for fostering a successful and enduring Innovation District ecosystem. Innovation Districts thrive when there is a **catalytic vision** anchoring **mutually-beneficial partnerships** between the public sector, private industry and academic actors, and there is **active engagement** of these stakeholders under a **defined governance structure**. Additionally, **curated physical spaces** and **ongoing programs** that facilitate planned and spontaneous **collaboration** are needed to create opportunities for talented people to interact and grow their ideas. Finally, **coordinated branding** and promotion are crucial to ensuring the district leverages emerging strengths and continues to bolster local networks. Many of these resources exist in Austin but **vary considerably in terms of maturity in the life science space**.

The Innovation District has a robust suite of potential partners that include government, healthcare, academic, and more.

GOVERNMENT & PUBLIC/PRIVATE PARTNERS

- City of Austin
- Travis County
- State of Texas
- Downtown Austin Alliance

HEALTHCARE INSTITUTION PARTNERS

- Ascension Seton
- Central Health
- UT Dell Med

ACADEMIC PARTNERS

- University of Texas at Austin
- Austin Community College
- Huston-Tillotson University
- Texas State University

CULTURAL PROGRAMMING PARTNERS

- Waterloo Greenway
- Red River Cultural District

Performance Score: **STRONG**



There is **no shortage of potential partners** for the Innovation District in Austin and all of the key stakeholders in Austin are engaged in the planning process. **Public-sector partners** are essential for unlocking the political will, financial tools, and regulatory framework that can facilitate growth. **Healthcare and academic partners** provide the foundation of innovative thought leadership, workforce development opportunities, and crucial funding and facility resources. Additionally, cultural organizations offer crucial opportunities for programming partnerships, creating a sense of place, and ensuring the existing **vibrancy of Downtown Austin permeates** into this new district. However, there is a lack of clarity among stakeholders on how they can best participate in the Innovation District and a mismatch between participation roles and participation motivations.

While Austin has numerous workspaces and resources for startup ventures, there is less support and physical space for companies that mature and grow in size.

ENTREPRENEURIAL WORKSPACES & STARTUP RESOURCES

- Austin Technology Incubator
- ACC Bioscience Incubator
- UT Austin Office of Tech Commercialization
- UT Dell Med, Catalyst and Health CoLab
- BioAustin
- Capital Factory
- TechStars Austin
- DreamIt Ventures Austin
- Incubation Station
- Tech Ranch Austin
- SXSW
- TIE Austin

Performance Score: **MEDIUM**



While Austin has more than 50 incubators and accelerators for early-stage startups, there is an **unmet need for resources and step-up space for companies that grow past the initial startup stage**. Austin's robust innovation ecosystem is ideal for growing a company to 20 employees but once a firm wants to grow into the 100s, it is much more difficult to find adequate facilities and business support resources. At this growth stage, companies start to require more dedicated space and specialized equipment, and it is difficult to find **affordable, contiguous space** especially Downtown where they can continue to mature. For life science entrepreneurs, wet lab and prototyping labs are particularly scarce and programs like the Austin Technology Incubator and UT Dell Med CoLab are **already at capacity** which suggests an unmet demand for additional life science resources and a **continuous chain of support** beyond the initial startup stage.

The University of Texas also has a robust network of internal entrepreneurial resources to support innovation among its students, professors, and researchers.



UT Austin has more than 51,000 students and 3,000 teaching faculty and there are **hundreds of programs spread across the university** designed to support the entrepreneurial endeavors of this population. These numerous programs are hosted within individual colleges that have only recently begun pushing **more cross-college collaboration**. These programs vary in terms of industry focus area, services offered, and eligibility for students and faculty. Some of the largest programs are hosted by the Cockrell School of Engineering, the McCombs School of Business, The College of Pharmacy, the Office of Technology Commercialization, and most recently Dell Medical School. This impressive **suite of programs will be a huge asset** for the Innovation District which could provide an opportunity to strengthen collaboration and coordination among these programs and **forge stronger connections between the programs and the external Austin business community**.

The growing venture capital market in Austin is relatively small, relying on coastal investors that do not yet see the potential of Life Sciences in Austin.

VENTURE CAPITAL & FUNDING

- Southwest Angel Network for Social Impact
- Central Texas Angel Network
- Texas Entrepreneur Networks
- Texas Small Business Innovation Research (SBIR)
- Sante Ventures
- Ascension Ventures

Performance Score: **UNDER-PERFORMING**



Securing adequate venture capital for Life Sciences is challenging in Austin. In 2018, the Austin metro area captured **\$1.3 billion in venture funding**, which accounts for **more than 60% of the state's total investment funds** and the region also has an active angel network. However, the capital resources in Austin are **primarily targeted at early stage companies and traditional tech ventures**. Austin lacks a continuous chain of support beyond the first round of funding so great ideas often leave Texas as they mature to locate closer to sources of funding on the coasts. While funding has diversified beyond Austin's dominant forces of semiconductors and enterprise software, it is **rarely available for life sciences**. In fact only one venture firm in Austin, Sante Ventures, specializes in life science investing.

Educational and training programs anchored by institutions will be key to better positioning the workforce in Austin for new jobs in Life Sciences.

WORKFORCE DEVELOPMENT

- ACC – Bioscience Incubator Internship
- ACC – Biotechnology Certificate Programs
- UT Dell Med / Huston-Tillotson University – Health Leadership Apprenticeship Program
- Huston-Tillotson University – Corporate Partnerships
- UT Dell Med – Health Professions Seminar
- UT Dell Med – Undergraduate Research Fellowship
- UT Austin – Health Science Summer Camp
- UT Austin – Health Catalyst Associate Program
- Workforce Solutions Capital Area
- St. Edwards
- Manor New Technology High School
- City of Austin
- Travis County

Performance Score: **MEDIUM**



Austin has a **robust foundation of academic institutions** including the University of Texas at Austin, St. Edward's University, Huston-Tillotson, and Austin Community College. These entities play a pivotal role in workforce development in the region by offering numerous degree, certificate, and K-12 partnership programs designed to develop the next generation of talent in Austin. In terms of Life Sciences specifically, there is a **talent shortage at all levels in Austin** and companies are **frequently importing their workforce** from other locations like Houston and Boston. However, with UT and ACC leading the way, several workforce programs have been formed to foster more Life Sciences skill development including UT Dell Med's **apprenticeship partnership with Huston-Tillotson**, a Health Catalyst Associate Program, and an Undergraduate Research Fellowship. ACC also offers a variety of **certificate degrees in biotechnology and internships** for students through its Bioscience Incubator. The City and County have both identified **workforce development as a key priority** for the future Innovation District and hope private industry partners will help support additional training and skills development for existing Austin residents.

A large number of events, conferences, and networking opportunities draw people and companies from all over the world to Austin each year.

NETWORKING & EVENTS

- Austin Healthcare Council
- Austin Technology Council
- Bio Austin
- Texas Bioscience Institute
- SXSW
- Breast Cancer Community Coalition
- Health Tech Austin
- University of Texas at Austin
- Texas Health and Bioscience Institute
- Texas Medical Device Alliance
- Ford Mobility Partnerships
- Jlabs Satellite

Performance Score: **STRONG**



Professional networks, industry organizations, and recurring events support **information transfer, connections among industry actors, and integrated innovation ecosystems**. When UT Dell Med was initially formed, an **informal grassroots network** of Life Sciences participants was created in the Austin area which helped open communication channels among the various actors involved in this emerging industry. These entities all firmly believe in Austin's potential to become a future leader in this field and are eager to collaborate and support each other's initiatives. These informal networks are bolstered by **formal events and conferences like SXSW**. In fact, at the 2019 interactive conference, health and med tech had a dedicated track and the ability to revolutionize healthcare delivery was a consistent theme. The world's leading industry minds already view Austin as a **global destination for the exchange of innovative ideas** and forum for discussing the next frontier of multiple industries. Awareness is only just beginning to grow of the role of Austin's Life Sciences industry within this larger conversation.

A network of existing organizations are poised to help build awareness of the Innovation District and support targeted recruitment of private-sector industries.

MARKETING & BRAND AWARENESS

- Austin Chamber of Commerce
- City of Austin Economic Development
- Travis County
- State of Texas
- University of Texas at Austin

Performance Score: **MEDIUM**



Austin has already established a **global reputation** as a thriving tech hub and desirable place to live and an existing network of partners works tirelessly to attract, retain, and grow new businesses in the community. The Chamber of Commerce, the City of Austin, and Travis County were all active players in some of the most notable recent recruitments to Austin of the Army Futures Command and Merck. These entities have a **toolkit of economic development incentives** and **established marketing channels** that can be leveraged to help bring awareness to the growing life sciences activity in Austin and the opportunities offered at the Innovation District. For instance, the Austin Chamber of Commerce identified Life Sciences as a **key target industry** in 2018 and has worked to bring awareness to Austin's emerging strengths in this area. However, there is **lack of consensus among these entities on the priority** of marketing Life Sciences and the Innovation District. Many view it as a worthwhile goal but since Austin's economy is strong and there is no crisis to rally behind, **some view the idea as noble but non-essential**. Additionally, there is a misalignment between those with the resources to market the district and those charged with the responsibility to move the endeavor forward.

The Innovation District should help address existing gaps in Austin's robust innovation ecosystem.

STRENGTHS

- A wide variety of partners and stakeholders are at the table ready to collaborate in an unprecedented way
- A plethora of operating spaces exist for startups and ventures with small footprint needs
- World-renowned events and networking opportunities

OPPORTUNITIES

- The District can address shortcomings in the ecosystem to foster a full spectrum of resources at all lifecycle stages
- The District can serve as a “proof of concept” to investors addressing concerns about the nascent life sciences in Austin
- The District can leverage tenants to expand private-sector led workforce development

WEAKNESSES

- Few spaces exist for maturing companies that outgrow initial startup spaces
- Venture funding is particularly limited for life sciences industries
- Life sciences workforce talent is limited and not meeting the needs of existing employers

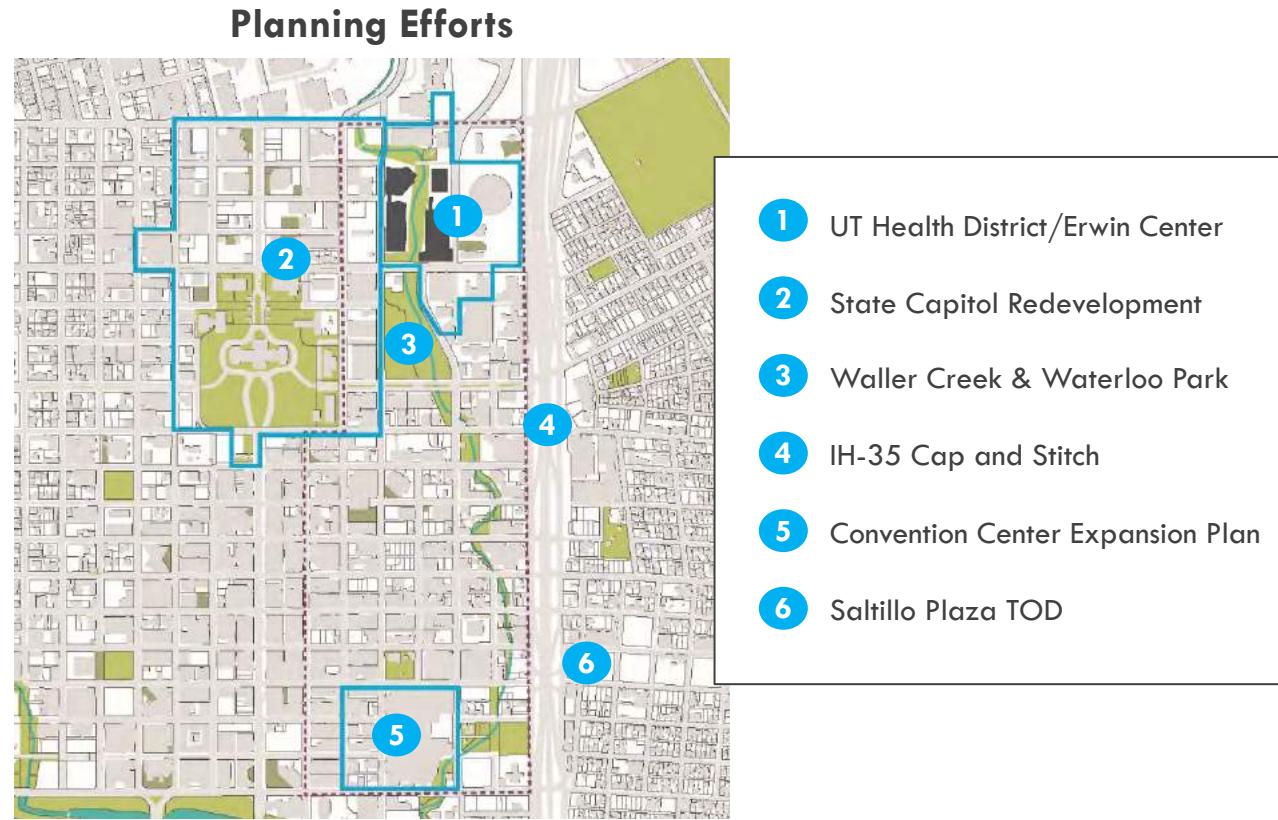
THREATS

- Because of the lack of space/resources for maturing companies, talent is leaving the region
- Growth may continue incrementally and the District will miss the opportunity to set an intentional course for becoming a unique regional economic catalyst

PHYSICAL CONDITIONS

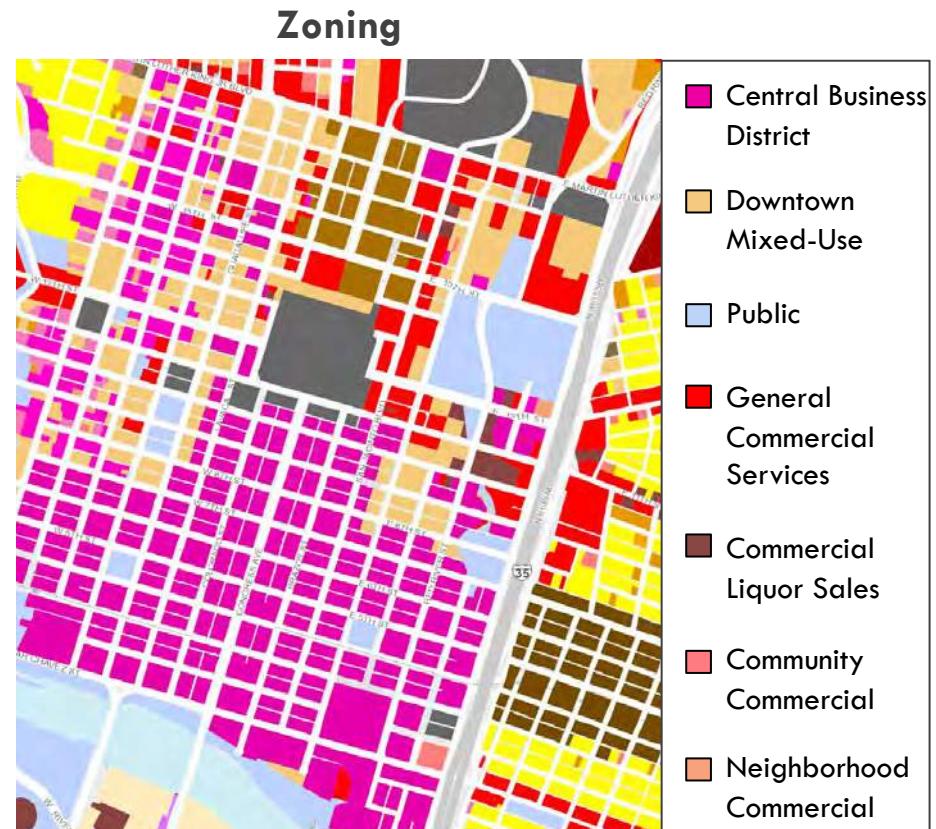
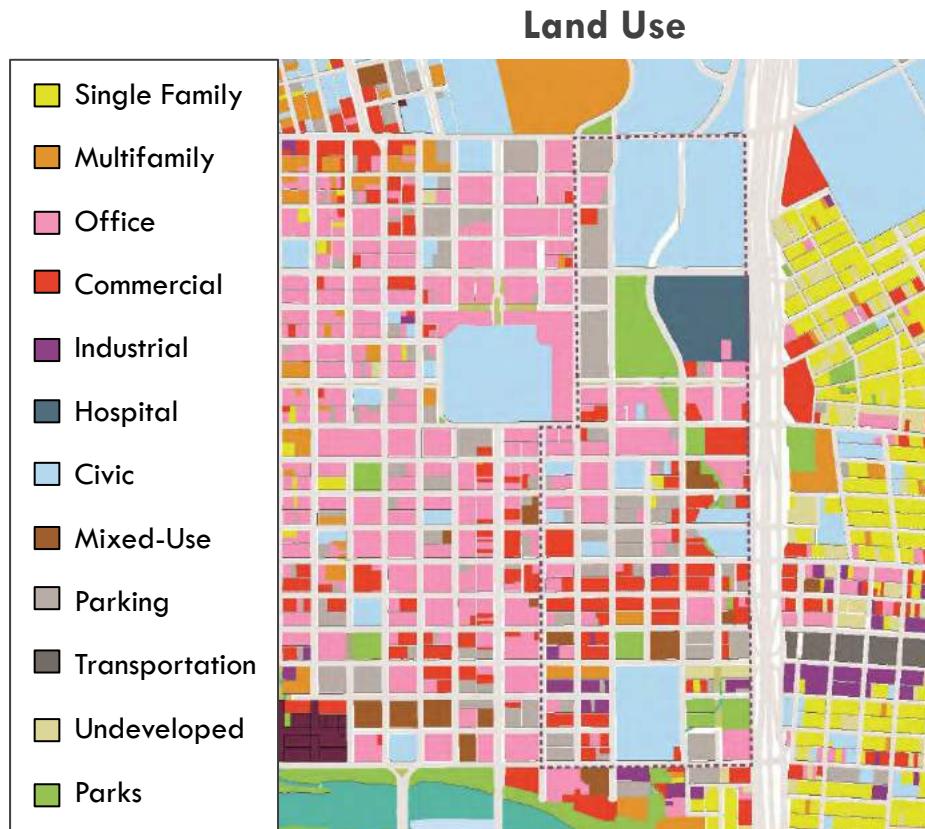


Six major planning efforts are underway that will influence future development in the Innovation District.



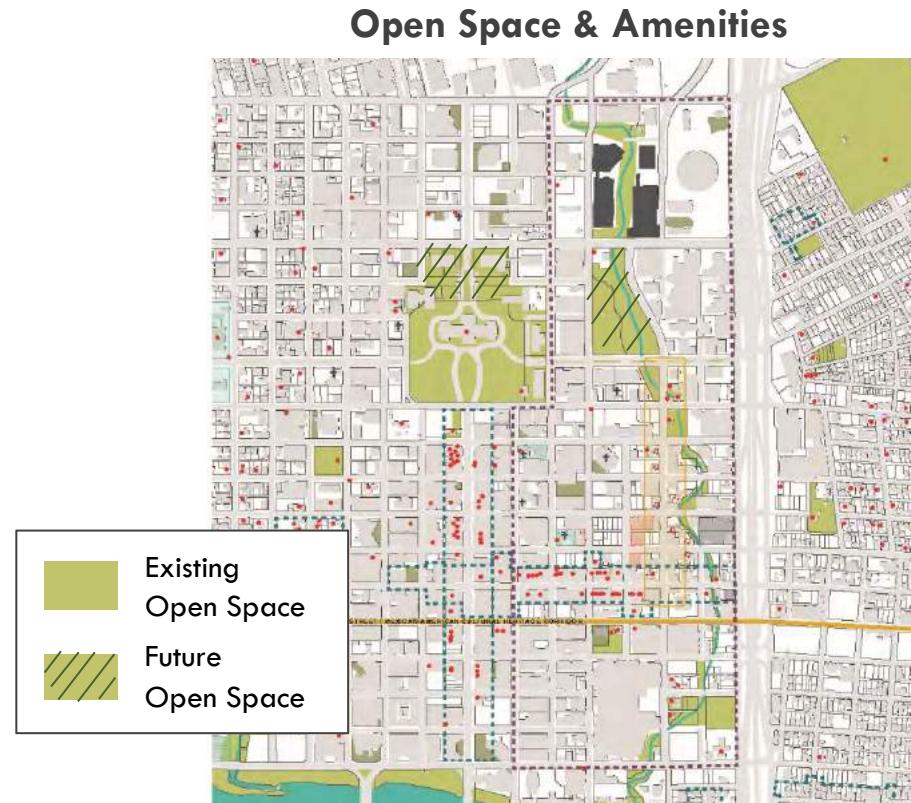
The Innovation District is surrounded by several major planning initiatives in various stages of execution. In the Northeast Quadrant, the landscape will soon be transformed by the **State Capitol Redevelopment**, the **UT Health District expansion**, and the opening of **Waterloo Park**. These initiatives will increase the vibrancy, foot traffic, and competitiveness of the area and the Innovation District should leverage these assets and capitalize on this momentum. Waller Creek in particular will revolutionize the landscape of this corner of Downtown and create new linkages to surrounding destinations. In the South, **Saltillo Plaza** and the **Convention Center Plan** will also create new activity hubs and assets for this area. Finally, while the future of this proposed plan is uncertain, **IH-35 Cap and Stitch** or the idea to recess I-35 and create a cap park would provide a seamless connection between this area and East Austin. The progress of these initiatives should be monitored closely.

Zoning is more accommodating to dense, mixed-use development in the Southern half of the Innovation District.



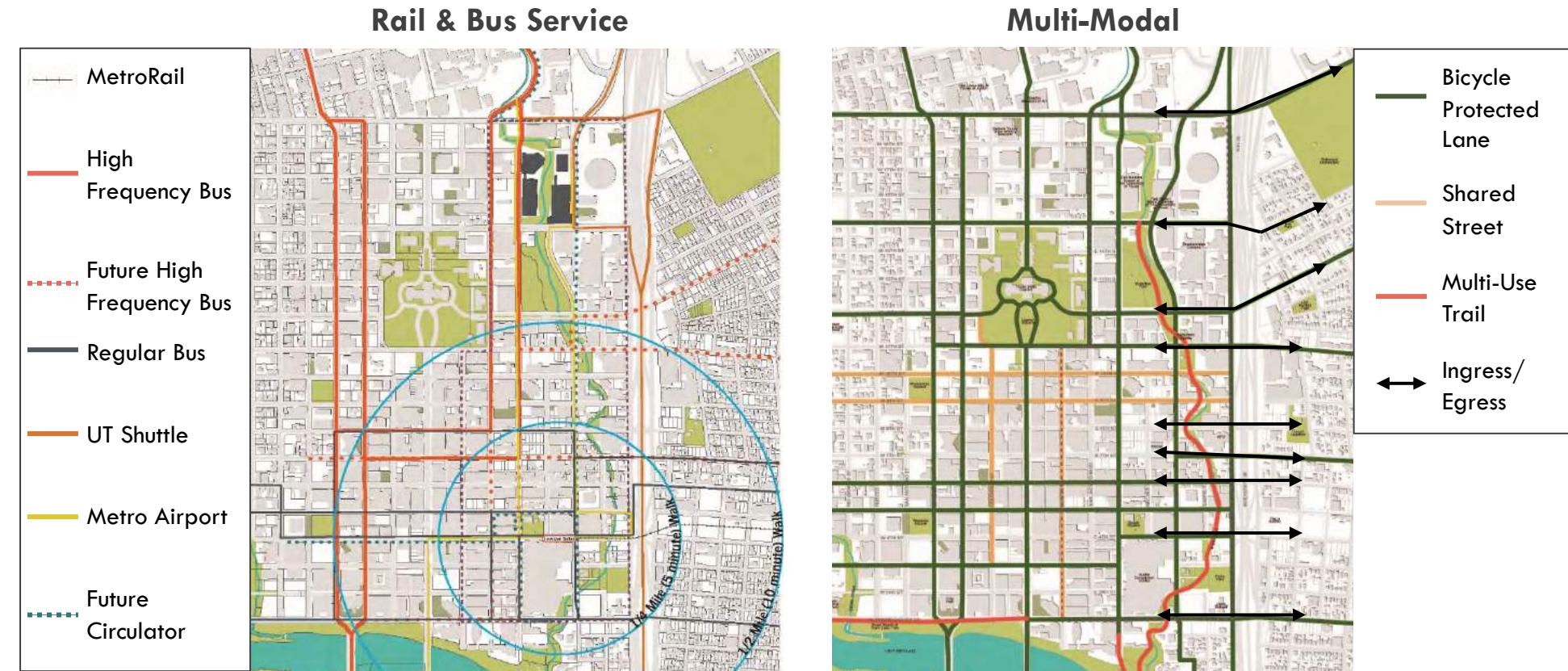
Zoning and land uses within the Innovation District vary considerably North and South of 11th Street. In the North, land use is dominated by civic uses and parking while the South includes a wide variety of mixed-uses. **South of 11th Street, zoning is primarily Central Business District which allows for a mix of uses and the densest zoning** with 8:1 FAR (or higher via the Downtown Density Bonus), 100% impervious cover, no setback requirements, and no height restrictions. Zoning in the North is primarily General Commercial Services and Downtown Mixed-Use. These zones have significantly more restrictions on allowable uses and density. To foster more mixed use development in the Northeast Quadrant, new zoning may need to be considered. The Brackenridge site is currently zoned as Public which does not have specific regulations.

Open space and amenities are far more prolific in the Southern half of the Innovation District than in the Northern half.



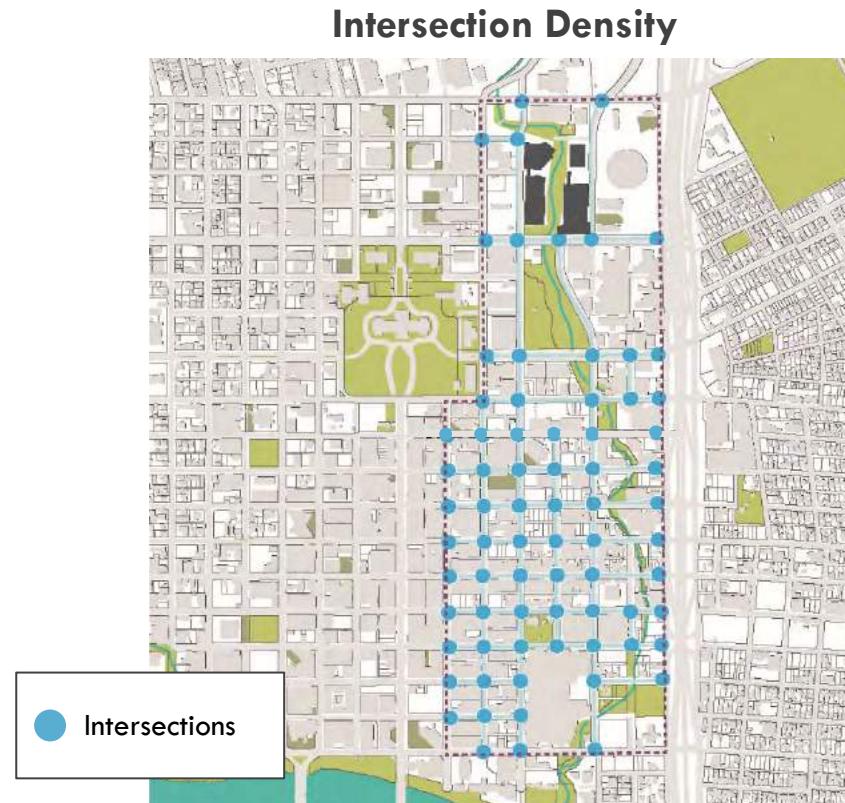
The majority of the **existing open spaces and public amenities are concentrated in the Southern half of Downtown**. In terms of open space, the Southern half of the Innovation District has proximity to Town Lake as well as some of Downtown's most iconic food, beverage, and entertainment corridors including 6th Street, Rainey Street, and more. In the North, the Capitol Lawn is the primary existing open space and there are far less commercial and entertainment amenities. However, several open spaces are planned for this area including the expansion of the Lawn envisioned under the Capitol Master Plan and Waterloo Park – the signature open space of Waterloo Greenway. **When these amenities arrive, the Northeast Quadrant is poised to become a far more vibrant place.**

The Northern half is fairly walkable and public transit options are poised to improve, although ingress/egress out of Downtown is less consistent.



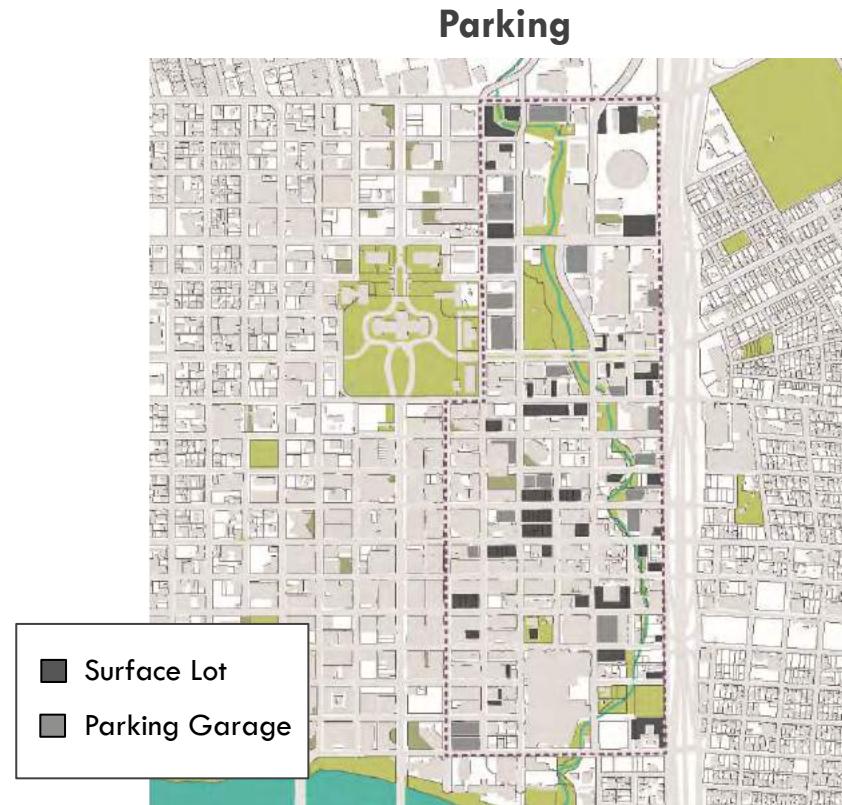
The Innovation District is served on its western edge by multiple bus routes and expanded service is planned that adds north south connections as well as connections across I-35 to the East Side. The only rail station in Downtown is located at the Convention Center, which is on the southern edge of the Innovation District and more than half a mile from UT Dell Med. Like most of Downtown, the area is fairly walkable and has good sidewalk coverage. Multi-modal connectivity will also improve significantly with the implementation of Waterloo Greenway, which includes a shared-use trail along the creek bed that will anchor the district. The area is also a generally safe area for wheeled modes of transit including bicycles and electric scooters. Vehicle ingress/egress out of Downtown is less consistent in the Northern half than in the Southern half.

The Southern half of the Innovation District has a more consistent urban grid and less super blocks than the Northern half.



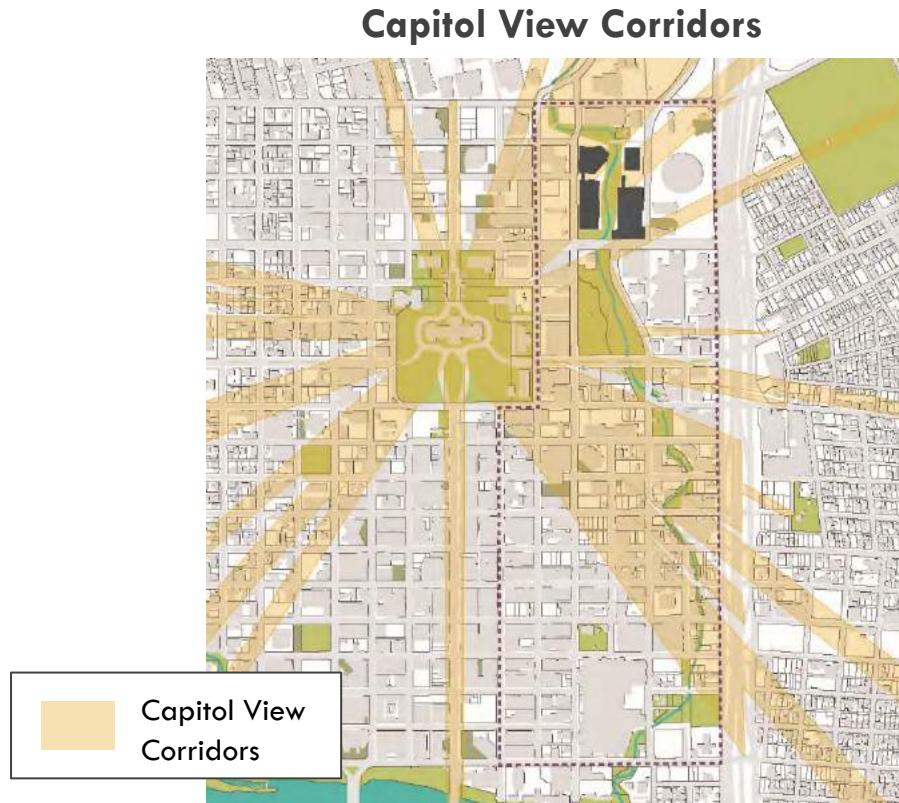
The urban fabric of the Innovation District varies between the Northern and Southern half. Intersection density is a standard measure of connectivity and a general rule of thumb is that 200 intersections per square mile reflects good urban connectivity. **South of 11th Street, there are approximately 220 intersections per square mile while North of 11th Street there are 119 intersections per square mile.** This suggests that the Southern half of the Innovation District has a more traditional urban grid while the Northern half has a more fragmented, inconsistent grid. In the North, several large super blocks disrupt connectivity and create a less friendly pedestrian environment at the street level.

Parking is a dominant use in the Innovation District, particularly in the Northern half which is dominated by large garages along San Jacinto Blvd.



There is a significant amount of parking within the Innovation District. In total, **parking takes up 67 acres or 23% of the land area in the Innovation District**. In the Southern half of the Innovation District most of the parking consists of small surface lots. In the Northern half of the Innovation District, **parking is dominated by several large garages along San Jacinto Boulevard that take up almost 6 full blocks**. These garages are primarily used by the adjacent State Capitol. The State Capitol Master Plan, which was adopted in 2016 and lays out the plan for over 2 million square feet of new development on state land. The plan currently includes these blocks in its study area but these parcels may be freed up for private development in the long-term.

Capitol View Corridors severely limit the allowable density in the Northern half of the Innovation District but do not impact the Brackenridge site.



Capitol View Corridors (CVC) are a state law that functions as an overlay zoning district and limits the maximum height of buildings to preserve the views of the Texas State Capitol from specific vantage points. This overlay does not apply to individual tracts of land but instead functions as a plane under which any structure must be below a certain height – this means that the same parcel could include portions of land within the CVC and outside the CVC. **In Austin's history, there has only been one modification of the CVC requirements** which was implemented for the University of Texas at Austin football stadium. It is therefore **highly unlikely that any modifications to the CVCs will be allowed** in this area despite the fact that they create a challenging, density-restricted development environment. Fortunately, the Brackenridge site, the primary opportunity site in this area, is outside of the CVC.

Physical conditions of the Innovation District create both opportunities and challenges for future growth.

STRENGTHS

- Strong public transit access by bus
- Walkable pedestrian environment with expanding multi-modal connections

OPPORTUNITIES

- The majority of large opportunity sites are in the Northern half of the Innovation District which means there is room to create a transformational impact
- Public spaces are planned for the Northern half that could become anchors of new development

WEAKNESSES

- Poor rail or other high-capacity transit access
- Inconsistent ingress/egress
- Parking is a dominant use in the Northern half and it creates an impediment to vibrancy particularly along the western edge
- Zoning is inconsistent and dense mixed-use is more challenging in the Northern half

THREATS

- CVCs limit density, constrain future development, and complicate development

REAL ESTATE CONTEXT



The primary focus area for the initial phase of the Innovation District is located in what we have defined as the “Northeast Quadrant”.

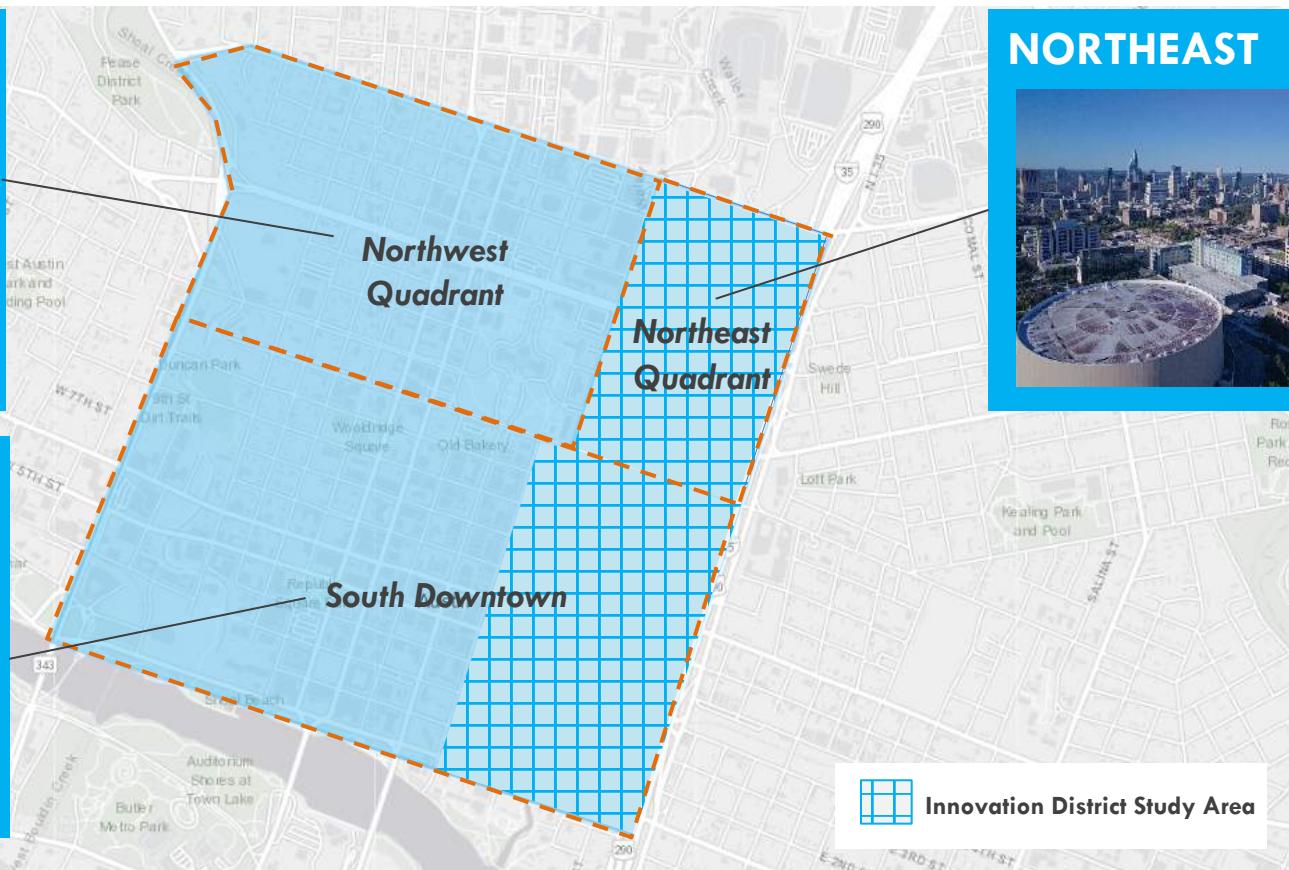
NORTHWEST



NORTHEAST



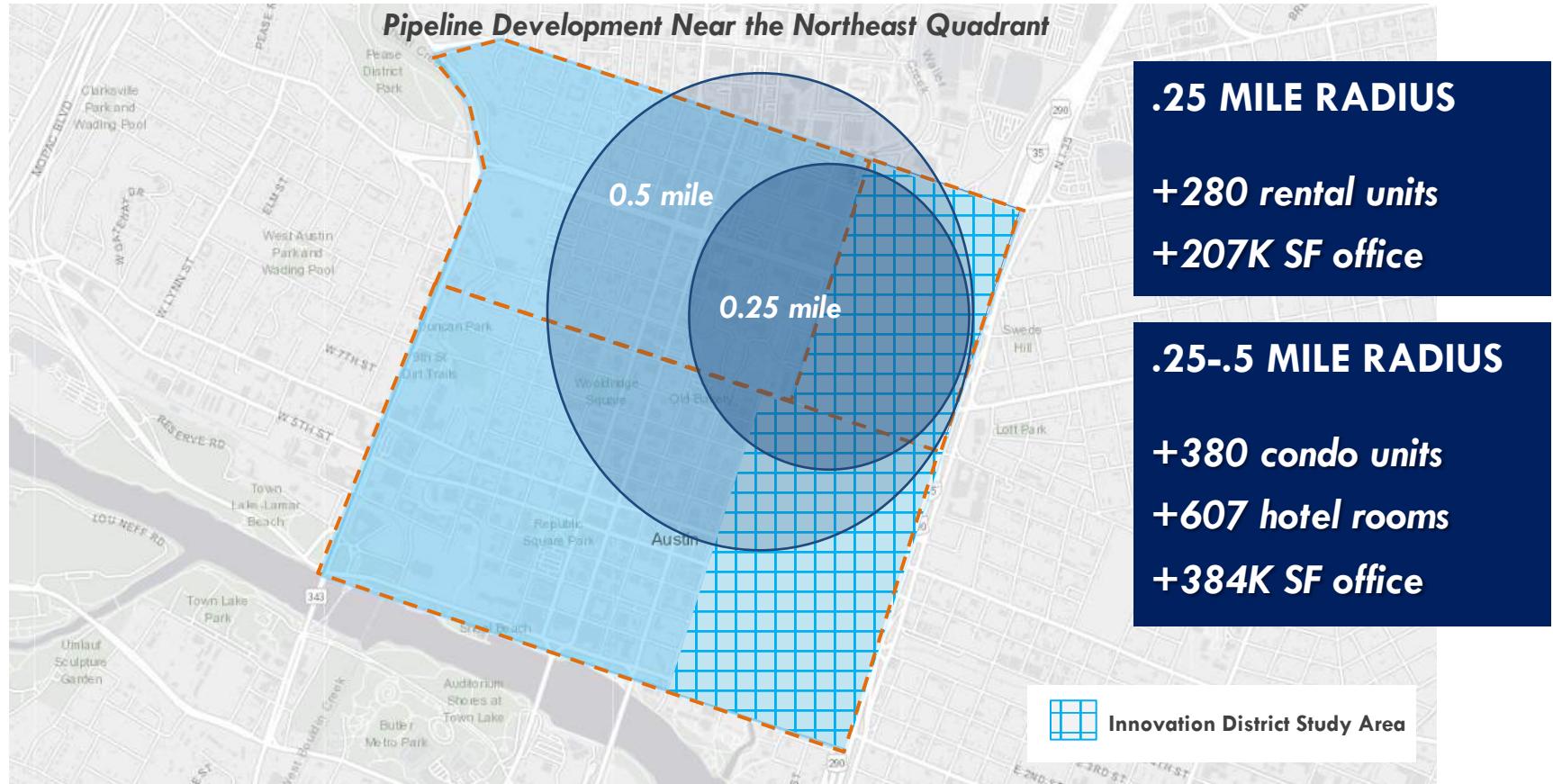
SOUTH



HR&A conducted a market analysis of **Residential, Hotel, Office, and Lab** uses in Downtown Austin to better understand potential real estate opportunities within the Innovation District. While the study area for the Innovation District is defined as the entire eastern edge of Downtown between San Jacinto Blvd/Brazos St and I-35, **market dynamics in Austin have been oriented along a North – South plane** with distinct patterns emerging north and south of 11th Street (equivalent to the southern border of the Texas State Capitol). Since the initial phase of the Innovation District is concentrated in what we have defined as the “Northeast Quadrant”, we **evaluated the divergent trends in these areas to better understand the nuances in the overall market and assess how these market forces might influence new development in the Innovation District.**

Note: Throughout this analysis, the reference to “Downtown” refers to the geography outlined on the map above. This analysis was designed to identify future opportunities for the Northeast Quadrant. While areas like East Austin are in close proximity, we believe they represent a fundamentally different competitive market and excluded those areas from this analysis to devote adequate attention to nuances within Downtown.

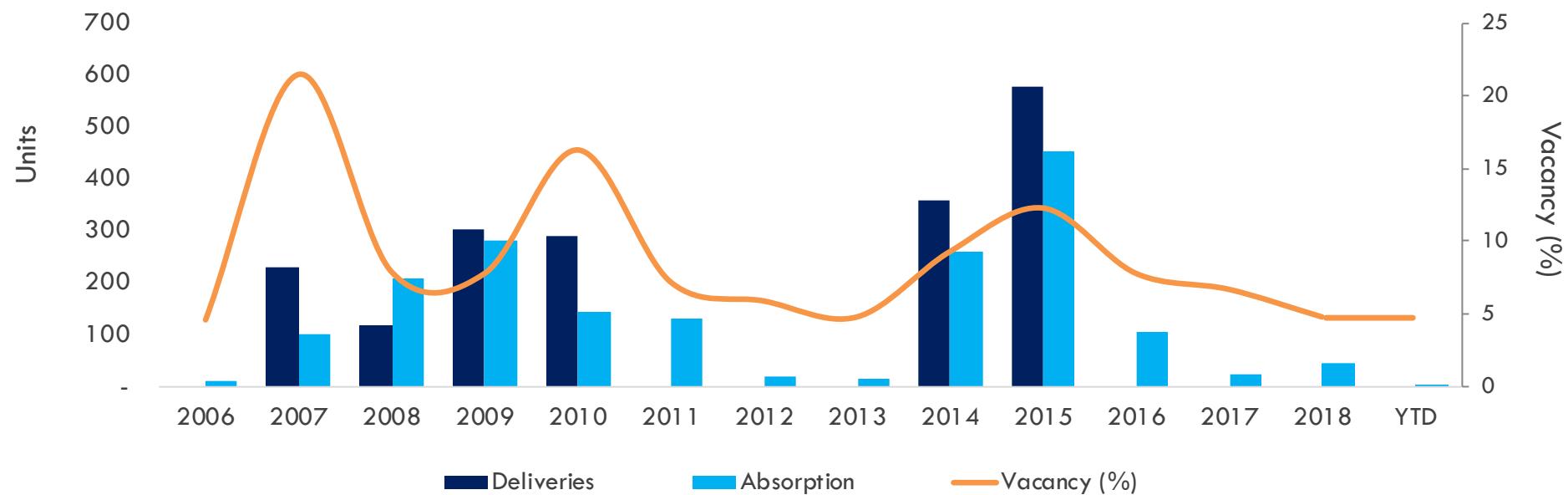
The trajectory of market forces across all uses suggests that Downtown growth will soon spillover into the Northeast Quadrant.



For all uses in our analysis, it is evident that the **direction of Downtown development is beginning to creep north** towards the last uncharted frontier of Downtown – the Northeast Quadrant. In fact, the development pipeline for the area immediately surrounding the target zone for the initial phase of the Innovation District includes more than **600 hotel rooms, 280 rental units, 380 condo units, and 590,000 SF of office within a half mile radius**. When the existing pipeline is built out over the next 3 to 5 years, opportunistic developers will likely begin aggressively pursuing opportunities in the Northern half of Downtown. To better understand how this growth might manifest in the Northeast Quadrant, HR&A assessed trends in the overall market, in recent development, and in pipeline projects for each use.

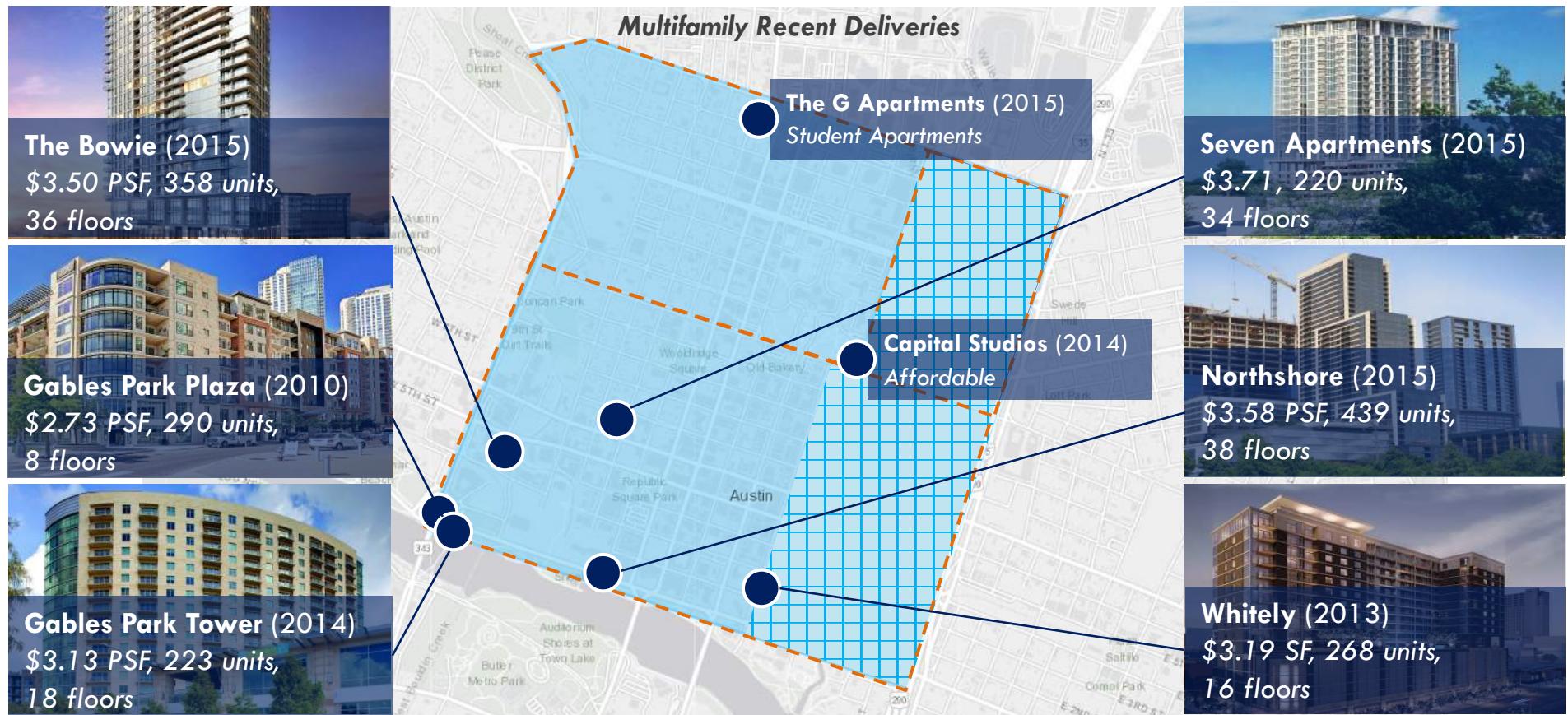
Downtown multifamily absorption continues to outpace supply, indicating that demand is far from satiated even with significant new deliveries.

Downtown Multifamily Deliveries & Absorption



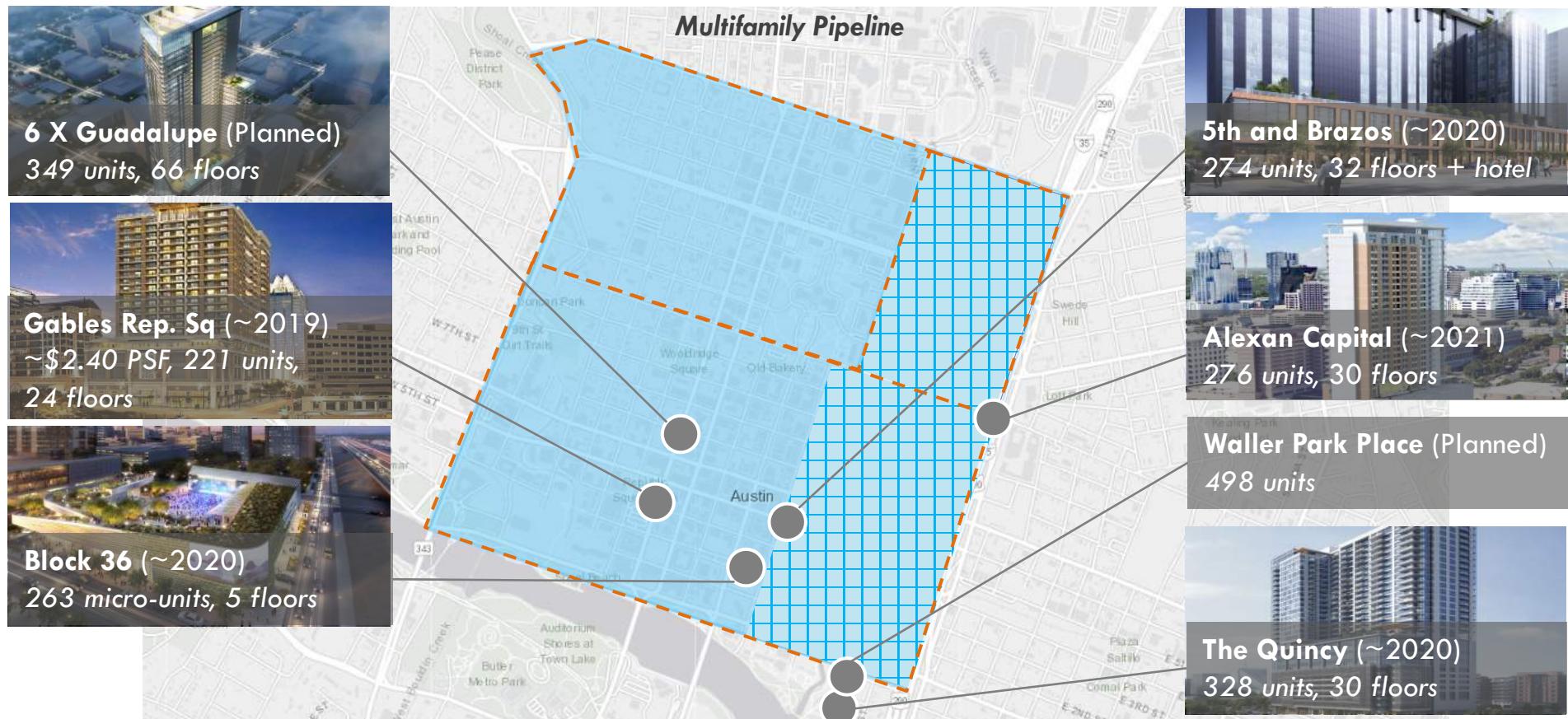
Downtown has a total residential inventory of approximately 4,000 units spread across 33 properties, and **more than 85% of those units were built between 2000 and 2018**. Even with these significant deliveries, residential absorption continues to outpace supply and vacancy has steadily declined to less than 5% in 2018. The average annual absorption for the last 10 years translates to **approximately 140 units each year**. While the last few years have experienced a lull in multifamily deliveries coming online, the market delivered several large condo projects during this time. Additionally, a large number of multifamily projects are in the pipeline and scheduled to deliver by 2022. This includes **eight high-rise buildings** that will soon deliver more than 2,500 new rental units to the market.

Recently delivered multifamily rental projects are primarily concentrated in the Southern half of Downtown with top of the market rents approaching \$3.70 PSF.



The majority of Class A multifamily rental inventory and recent deliveries are located in the Southern half of Downtown. The average multifamily rent for Downtown overall in 2018 was \$2.71 per square foot but rents in the Southern half of Downtown were more than double rents in the Northern half. The top of market rents achieved in new product in the South are just above \$3.70 per square foot while the highest rents in the North averaged \$1.70 per square foot. This significant gradient is likely the result of both the lack of new multifamily deliveries in the North and the higher demand for locations within the highly amenitized South Downtown area which offers a true mixed-use, urban realm.

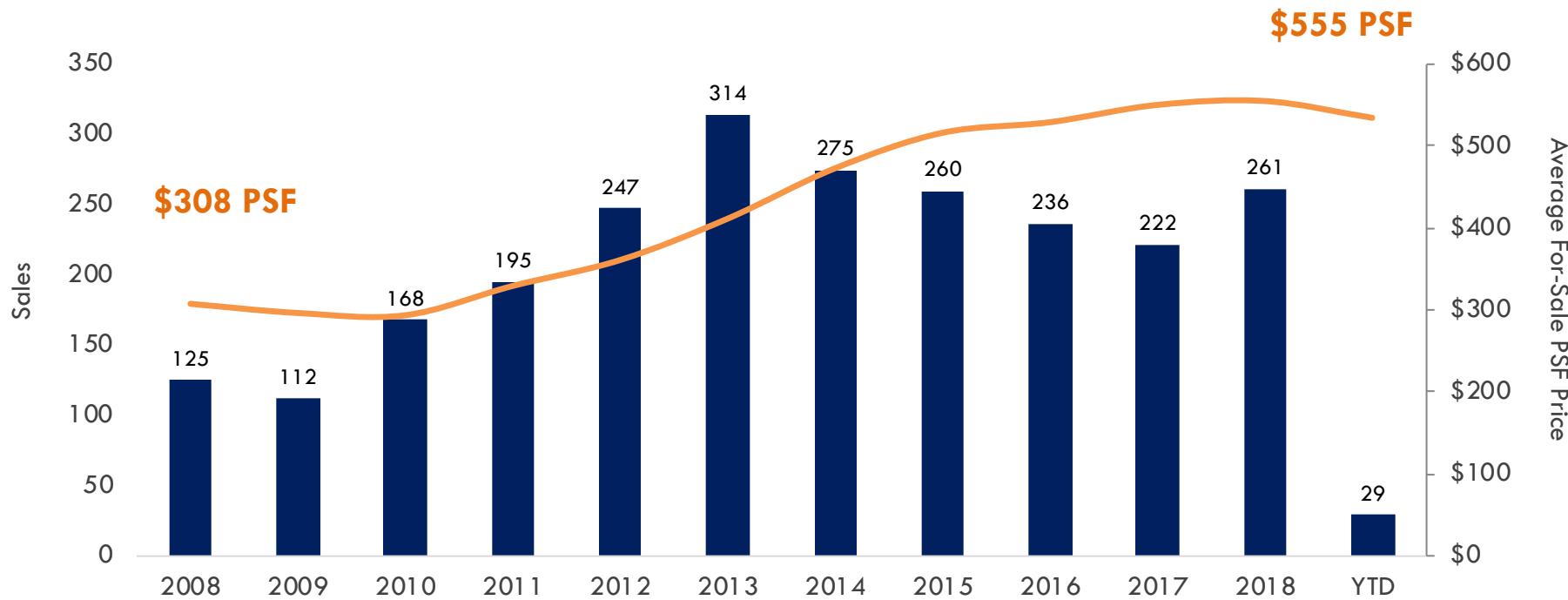
Pipeline multifamily projects continue to cluster in the South but the development trajectory is shifting towards the Northeast Quadrant.



While South Downtown continues to be the primary target of new multifamily activity, projects in the Downtown development pipeline suggest **the trajectory of future growth is shifting towards the Northeast** and the **Innovation District is squarely within the pathway of future growth**. One development in particular, Alexan Capital Tower, is a 30-story, 276 unit tower located just four blocks south of UT Dell Med. While this growth trend speaks to the private-sector's growing interest in this corner of Downtown, it also reiterates the **need to commit to a long-term vision for the district so development pressure doesn't result in piecemeal development** that fails to harness the benefits of holistic district creation.

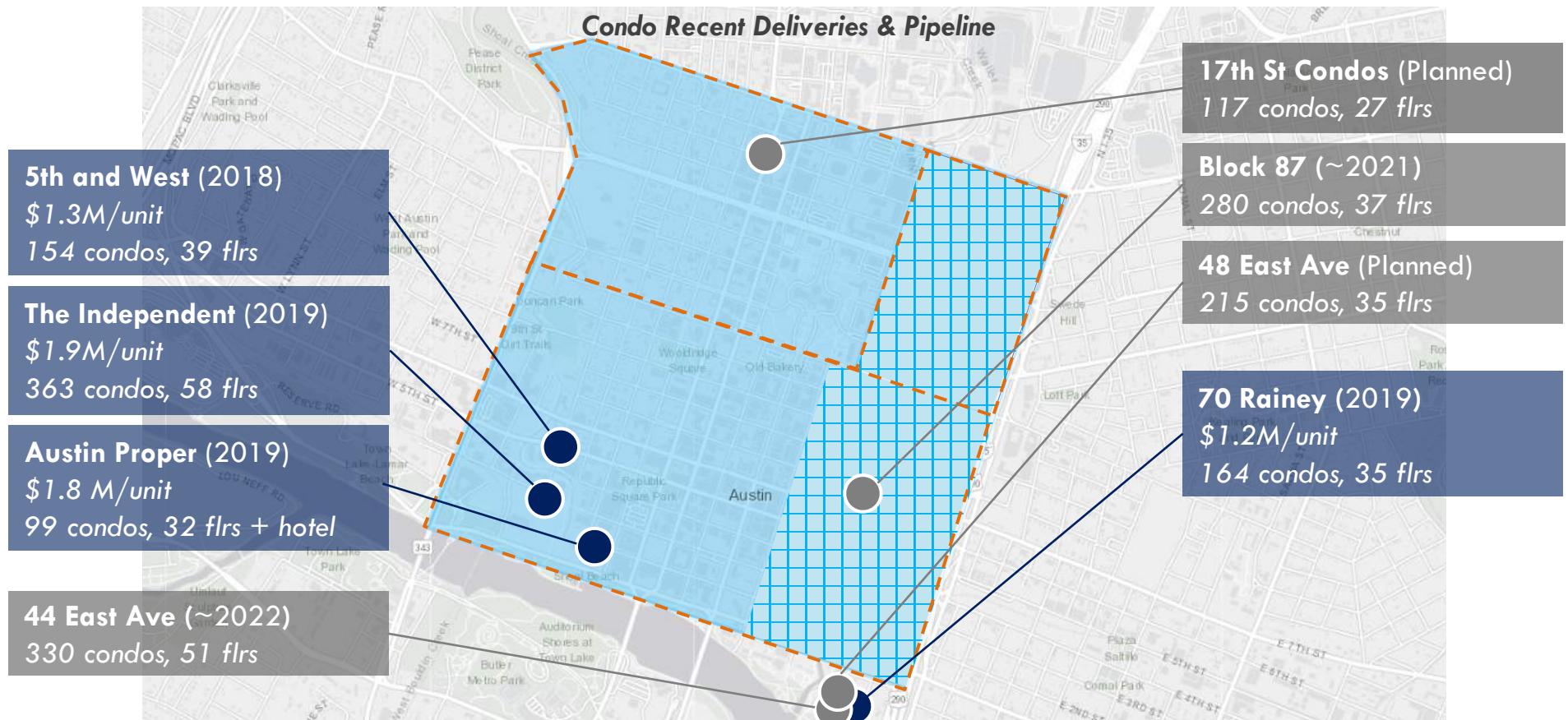
In addition to significant multifamily activity, condo sales have also increased Downtown and average sale prices have increased by more than 80%.

Downtown Condo Sales & Prices



From 2008 to 2010, condo sales Downtown averaged 135 sales per year, but post-2010 **average condo sales increased to more than 250 sales per year**. Condo sales peaked in 2013 at 314 sales. For-sale prices for condos have also increased. In 2008, condos sold for an average of \$308 per square foot. In 2018, the **average per square foot sale value of condos Downtown was \$555** – more than an 80% increase in just 10 years. These prices are even higher for some of the most recent condo deliveries that are averaging more than \$1,000 per square foot.

Downtown residential development has experienced a surge of super-luxury, high-rise condos that sell for over \$1 million per unit.



Over the past three years, Downtown has also experienced an **influx of luxury high-rise condos**. These properties are clustered in the Southern half of Downtown and **more than five individual properties and 800 condo units have been delivered since 2016**. The majority of these condos sell for over \$1 million per unit. Rapid growth in condos is expected to continue since the development **pipeline includes an additional seven projects and 1,500 condo units** that would significantly expand the condo inventory in just a few short years.

Downtown housing demand is projected to increase by 6,200 households by 2030 – approximately 560 households each year.

DOWNTOWN RESIDENTIAL DEMAND

704,000	Projected Population Growth in Austin MSA by 2030
1.3%	Downtown Share of Population Growth since 2015
9,000	Projected Population Growth in Downtown by 2030
1.45	Average Household Size in Downtown
6,200	Projected New Housing Units Demanded in Downtown by 2030

Based on the Texas Demographic Center's population growth projections, the **Austin-Round Rock MSA is poised to surpass 2.8 million in total population by 2030**. If current growth trends continue, and Downtown continues to capture approximately 1.3% of this net growth, Downtown will have the opportunity to add an additional 6,200 new households during this period. This translates to an **increase of 560 households per year**. To accommodate this rapidly increasing population, a large amount of residential inventory is required. Downtown does have a robust pipeline of residential rental and for-sale projects on the horizon that include approximately 4,000 new residential units. These units will help absorb a portion of this demand.

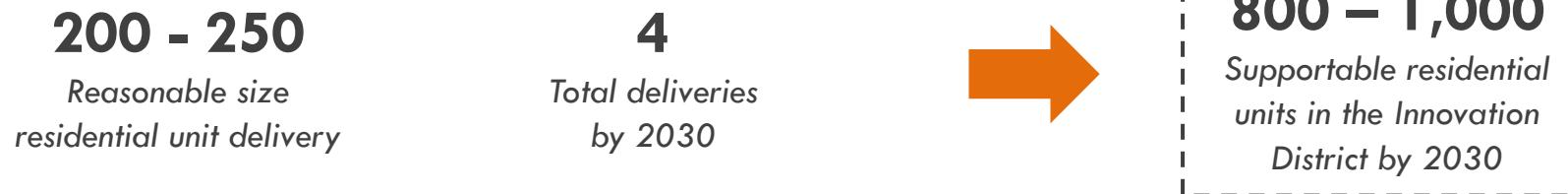
The initial phase of the Innovation District can likely capture 800 to 1,000 units out of Downtown's projected demand for residential units by 2030.

INNOVATION DISTRICT PHASE I RESIDENTIAL DEMAND

Remaining Downtown Demand Post-Pipeline



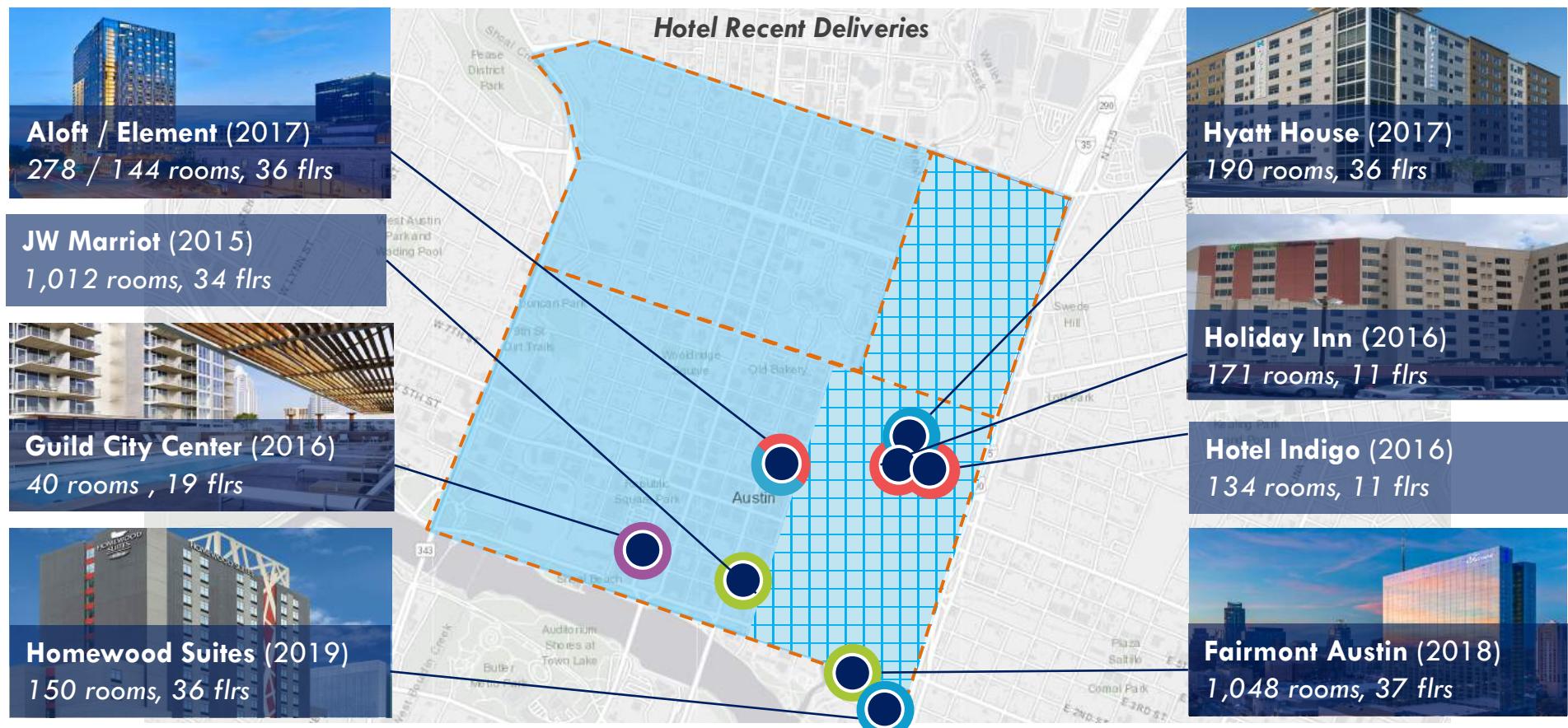
Innovation District Pace of Delivery



36% - 45% capture rate post-pipeline

Taking into account the existing pipeline of planned condo and for-sale residential projects Downtown, there is a **remaining demand of 2,200 residential units** that the Innovation District can tap into. Assuming an average size residential delivery of 200 to 250 units, and a pace of absorption that assumes a conservative 18 month lease up period, the Innovation District could support approximately four new deliveries by 2030. Four deliveries over the next decade would produce a **total of 800 to 1,000 residential units in the initial phase of the Innovation District** which translates to a 13% to 16% capture rate of overall Downtown demand and **36% to 45% of Downtown demand after accounting for pipeline**.

More than 2,000 hotel rooms have been delivered Downtown since 2016 and 70% of them are located in the Southern half of the Innovation District.

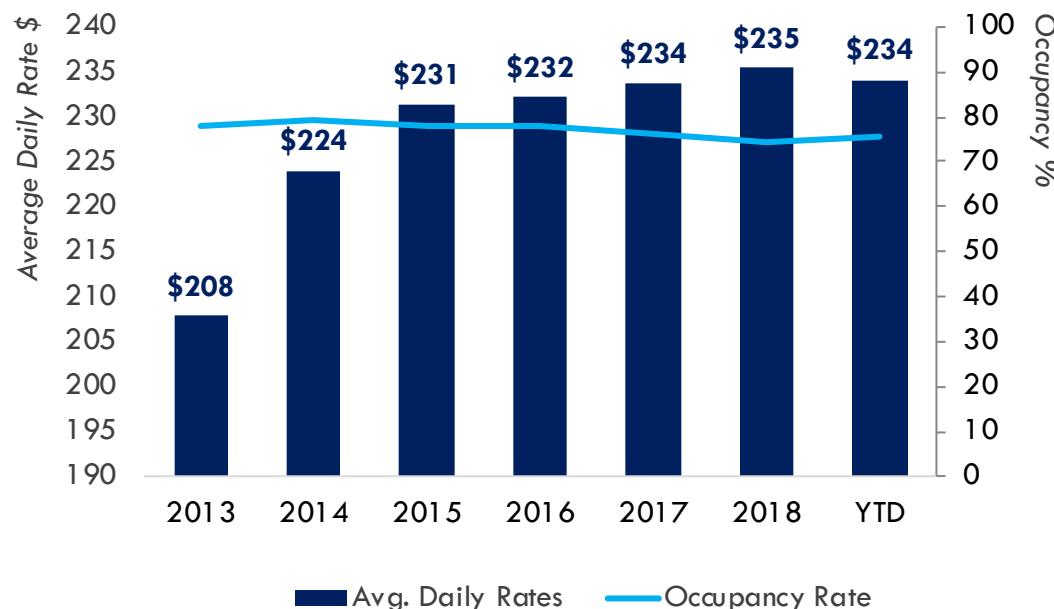


- Boutique
- Luxury
- Economy
- Extended
- Select Service

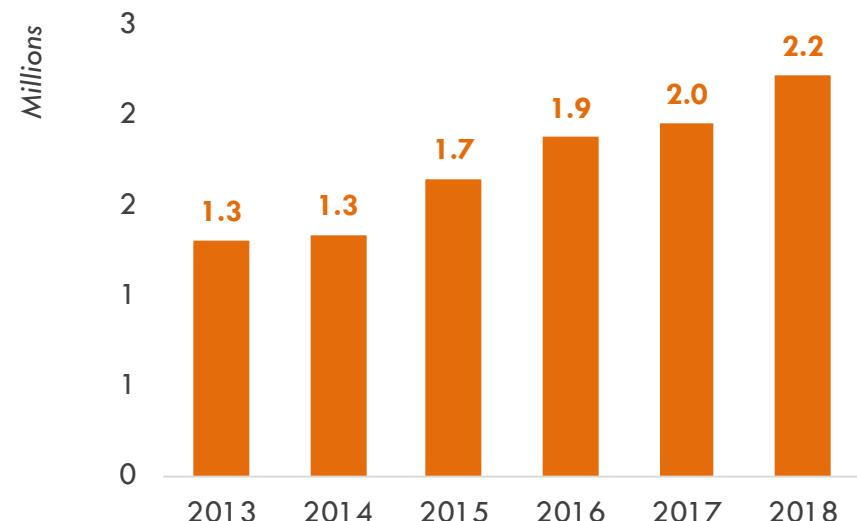
Downtown Austin has a **sizable hotel inventory totaling 10,600 rooms that span a full spectrum of products types ranging from boutique to luxury to economy models.** The hotel market has experienced significant growth over the last few years and more than 2,000 new rooms have been delivered, with the lion's share of these located in the Southern half of the Innovation District. This is **driven by proximity to the Convention Center, the Red River Cultural District, 6th Street, and Rainey Street** in this area.

Despite significant deliveries, room rates and room demand remain on a healthy upward track and occupancy has remained above 75% since 2013.

Downtown Hotel ADR & Occupancy

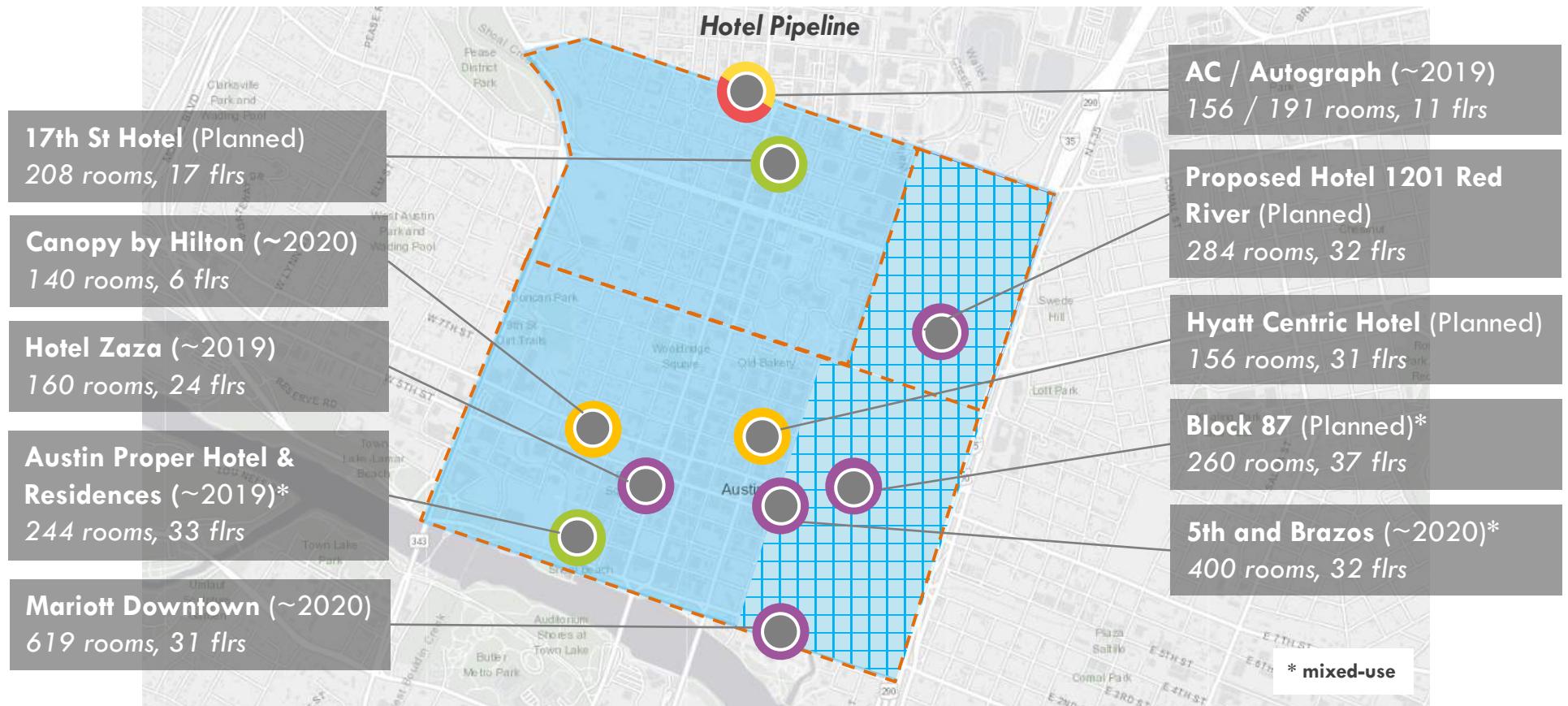


Downtown Hotel Room Demand



Although Downtown's hotel inventory has increased by almost 25% since 2016, **occupancy rates have remained stable** hovering at a healthy 75% since 2013. The rapid absorption of this new supply of hotel rooms speaks to the strength of Austin's hotel market which stems from a combination of factors – **attractions** like the State Capitol, the University of Texas, and the significant business community that create consistent year-round visitation as well as **special event attractions** like SXSW, Texas Legislative Sessions, ACL, UT Austin Graduation, and more that drive large-scale visitation during certain points in the year. This **combination of attractions, coupled with Austin's growing popularity** as a national and international tourism market and lifestyle destination, have created a thriving hospitality market Downtown.

An additional 2,800 hotel rooms are in the pipeline for Downtown but developers remain confident about the future outlook of the market.



The hotel pipeline for Downtown includes **at least ten new projects that will deliver an additional 2,800 hotel rooms** to the market over the next few years. These projects are increasingly delivered as part of larger mixed-use developments that include hotels along with a large amount of residential, office and retail. This strategy has allowed developers to **amortize high land costs** by taking advantages of the strength of the hotel market to deliver denser product. These mixed-use projects are also able to share amenities between uses allowing them to generate economies of scale in service delivery.

Source: STR, Stakeholder Engagement, Austin Towers, Proper Hotel, Marriott Hotels Kxan, White Lodging, Hospitality.net, DAA; Note: Pipeline data was collected in May/June 2019 and is subject to change as plans develop

Downtown can likely support additional demand for approximately 4,300 hotel rooms by 2029.

DOWNTOWN HOTEL DEMAND

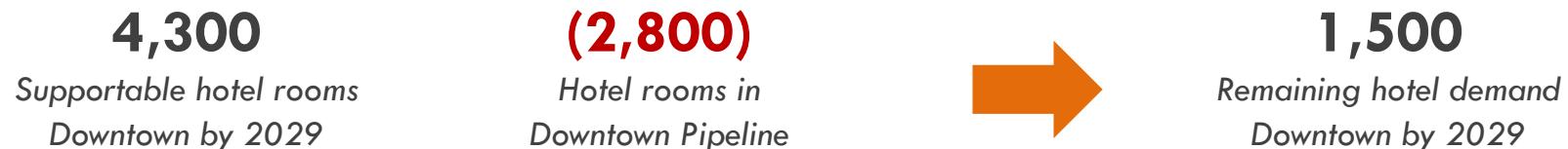
13,462,000	Projected Growth in Tourism in Austin by 2029
8%	Ratio of Downtown Room-Nights to Tourists
1,090,000	Projected Growth in Room-nights Demanded in Downtown
70%	Target Hotel Room Occupancy
4,300	Projected Room Demand in Downtown by 2029

In 2018, Austin had 27.4 million annual visitors. If the current annual growth rate in tourism continues for the next 2 years but then tapers to a stabilizing level, Austin will have 40.9 million annual visitors by 2029 – an **increase of 13.5 million tourists**. Based on current lodging trends of tourists who require overnight lodging, who choose hotels as their lodging option of choice, and who choose locations within Downtown – the current ratio of Downtown room-nights to total tourists is 8%. Assuming this ratio remains constant, **Downtown can reasonably support 4,300 additional hotel rooms by 2029 or approximately ~18 hotels** based on an average of 237 rooms per hotel. Downtown does have approximately 2,800 hotel rooms planned or under construction that will likely absorb some of this demand.

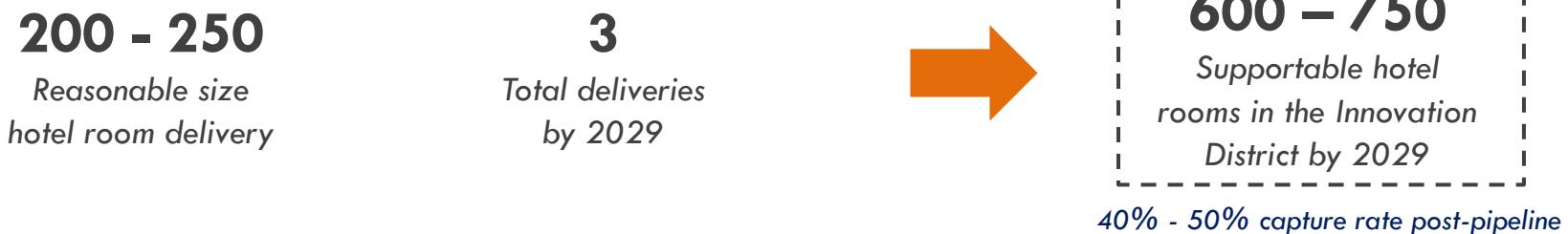
With the right product positioning, the initial phase of the Innovation District can likely capture 600 to 750 hotel rooms out of Downtown's projected demand.

INNOVATION DISTRICT PHASE I HOTEL DEMAND

Remaining Downtown Demand Post-Pipeline



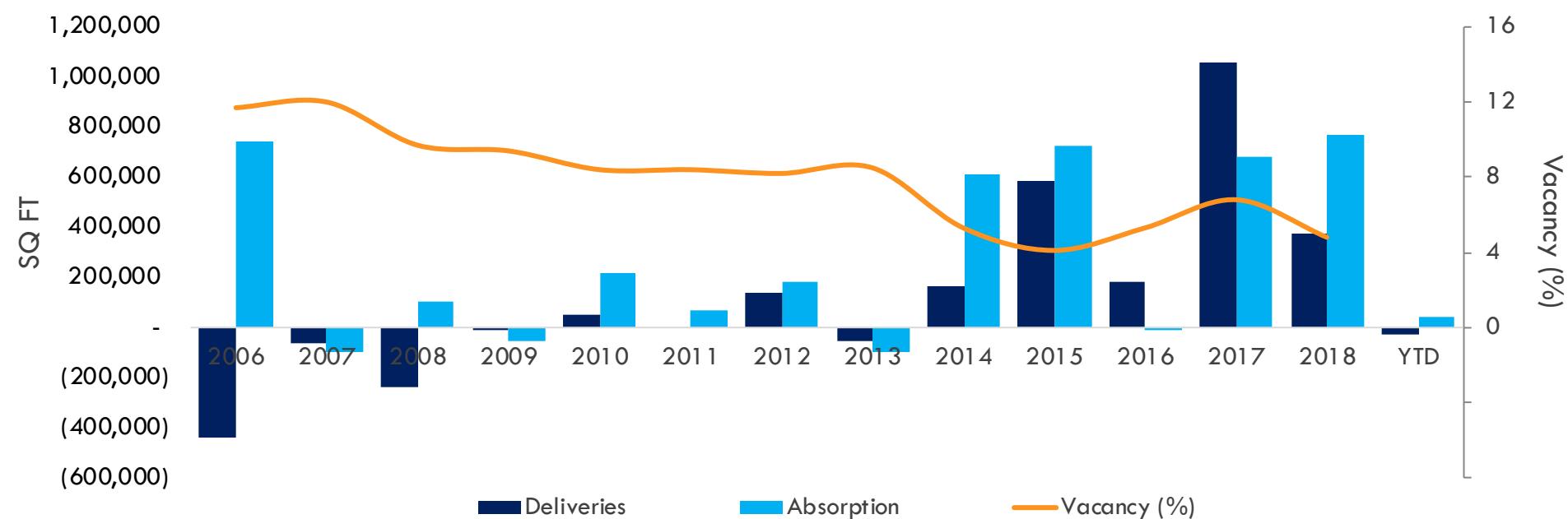
Innovation District Pace of Delivery



Taking into account the existing pipeline of planned hotel deliveries Downtown, there is a **remaining demand of 1,500 hotel rooms** that the Innovation District can tap into. Assuming an average size hotel delivery of 200 to 250 rooms, a hotel product within the **Innovation District that achieves 70% occupancy would need to capture just 2% to 3% of market room-nights** (51,000 to 64,000 out of Downtown's average 2 million annual room-nights). While the Northeast Quadrant has objectively less amenities to attract tourists than other sections of Downtown, it can leverage its proximity to its institutional anchors in the positioning of new hotel product. In the short- to mid-term, the best product type for this area is likely smaller, extended stay product that could be thematically tied to the hospital and only in the long-term would higher-end product likely be attractive here. Deliveries should be paced accordingly with the momentum of the area and the growth in amenities. Three deliveries over the next decade would produce a **total of 600 to 750 hotel rooms in the initial phase of the Innovation District** which translates to a 14% to 17% capture rate of Downtown demand and **40% to 50% of demand after accounting for pipeline**.

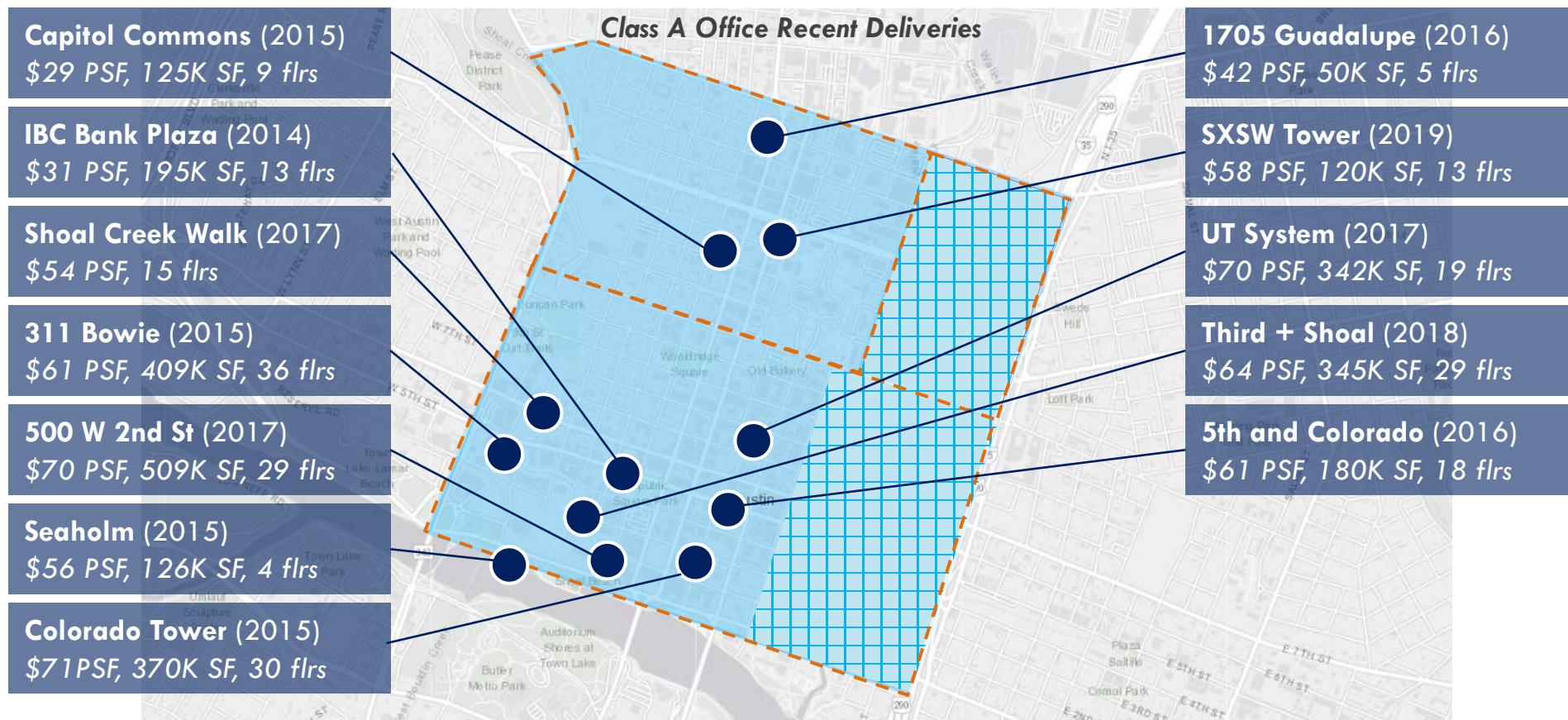
Since 2006, more than 2.8 million square feet of office has been delivered Downtown and the future outlook for office continues to be positive.

Downtown Office Deliveries & Absorption



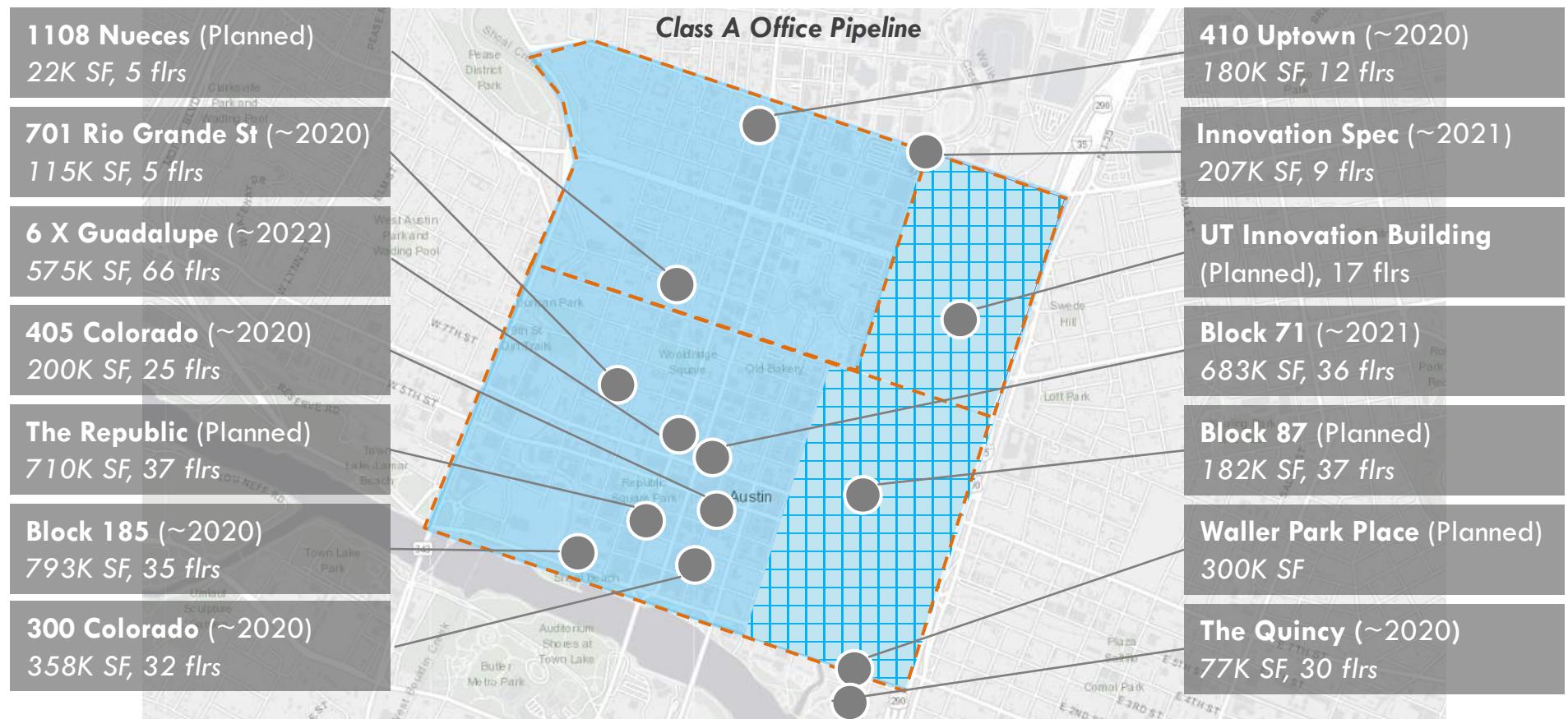
Since 2006, more than 2.8 million square feet of office has been delivered Downtown expanding the total office inventory to 16 million square feet. While deliveries tapered off during the recession, they have accelerated again recently **averaging almost 560,000 square feet every year since 2015**. These deliveries include thirteen new high-rise buildings, most of which are concentrated in South Downtown. During this period of high growth, **vacancies have trended down** and are now hovering at 4.8%. While this is a healthy vacancy rate, more office supply is needed Downtown to keep pace with demand and the supply needs of expanding industries. Despite the rise in coworking space and new trends changing the way office space is designed and utilized, conversations with developers and brokers revealed **tremendous confidence** in office demand Downtown and they expect the market will continue to grow.

Class A office deliveries are beginning to creep north but rents in the Northern half of Downtown are 22% less than rents at comparable projects in the South.



Rents in Austin's Central Business District are among the highest in the country and are **surpassing \$70 per square foot** in the Southern half of Downtown. This **rental rate is approaching the level of leading markets** like New York (\$82), San Francisco (\$85), and Cambridge (\$85) and far surpasses regional peers including Dallas (\$32) and Houston (\$40). Over the past few years, the **Northern half of Downtown has also begun to capture a small share of new Class A office deliveries** including the new SXSW Tower project which has secured large tenants such as WeWork. However, rents in this new state of the art building are \$58 per square foot – a full **22% less than rents at comparable buildings in the South**.

Compared to the high-rise dominated South, pipeline office projects in the Northern half of Downtown are primarily mid-rise.



The typology of recent office deliveries varies considerably between the South and the North. The **Southern half of Downtown is more in demand** due to proximity to Downtown's residential nodes and a variety of Austin's most popular amenities. The area is also less encumbered by Austin's Capitol View Corridors. These factors have led to developments that are averaging 30+ stories in height with some pipeline projects more than 60 stories. This vertical pressure stems at least partially from high **land values in the South ranging from \$1.5K to \$1.8K per land square foot**. In the North, where demand is lower, achievable rents are lower, and Capitol View Corridors are far more restrictive, mid-rise typologies are more common and heights range from 5 to 15 stories.

Downtown can likely support additional demand for 9.9 million square feet of office space by 2029.

DOWNTOWN OFFICE DEMAND

80,000	Projected Office-using Employment Growth in Austin MSA by 2029
200	Gross SF per Employee
16,008,000	Gross New Supportable Square Feet in Austin MSA
62%	Downtown Share of Office Deliveries since 2015
9,948,000	Gross New Supportable Square Feet in Downtown

Based on employment growth trends in office-using sectors, Downtown Austin **will be able to support an additional 9.9 million square feet of new office space** by 2029. Based on the average gross square feet required per employee in these industries, and the assumption that Downtown continues to capture its relative share of gross office absorption in the Austin-Round Rock MSA, Downtown should be able to support demand for approximately 9.9 million square feet of additional office space. While **Downtown does have 4.4 million square feet of office space in the pipeline**, low office vacancies of 4.8% suggest that while the office market is currently at a healthy vacancy rate, demand may soon outpace supply and more office is needed to meet the demand of growing industries.

The initial phase of the Innovation District can capture approximately 800,000 to 1,200,000 square feet of Downtown's projected growth in office space.

INNOVATION DISTRICT PHASE I OFFICE DEMAND

Remaining Downtown Demand Post-Pipeline

9.9M

Supportable office SF
Downtown by 2029

(4.4M)

Office SF in
Downtown Pipeline

5.5M

Remaining office demand
Downtown by 2029



Innovation District Pace of Delivery

200K – 300K

Reasonable size
Office SF delivery

4

Total deliveries
by 2029



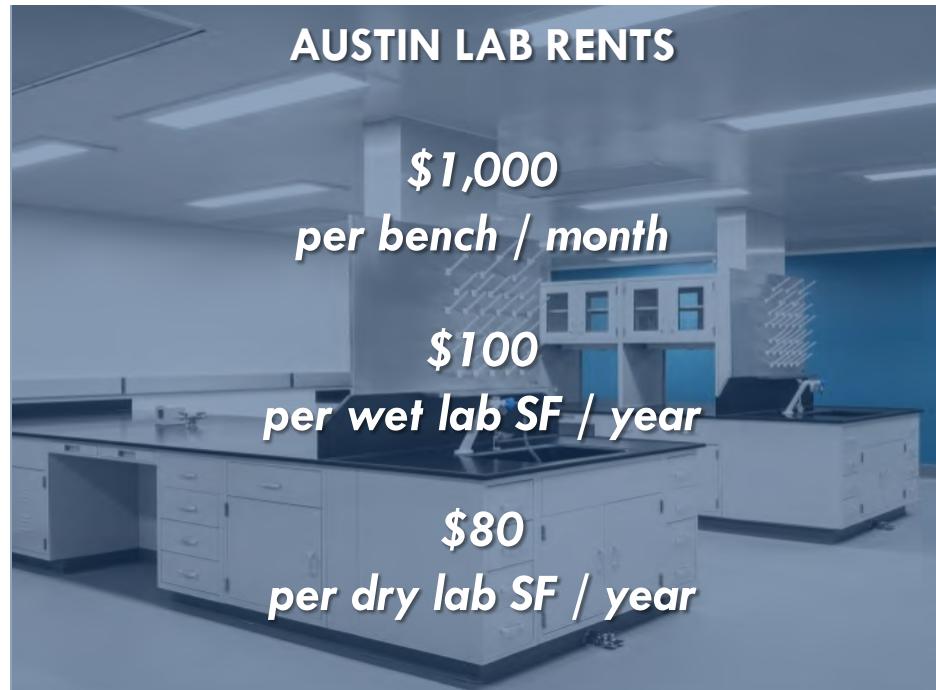
800K – 1.2M

Supportable office SF in
the Innovation District
by 2029

15% - 22% capture rate post-pipeline

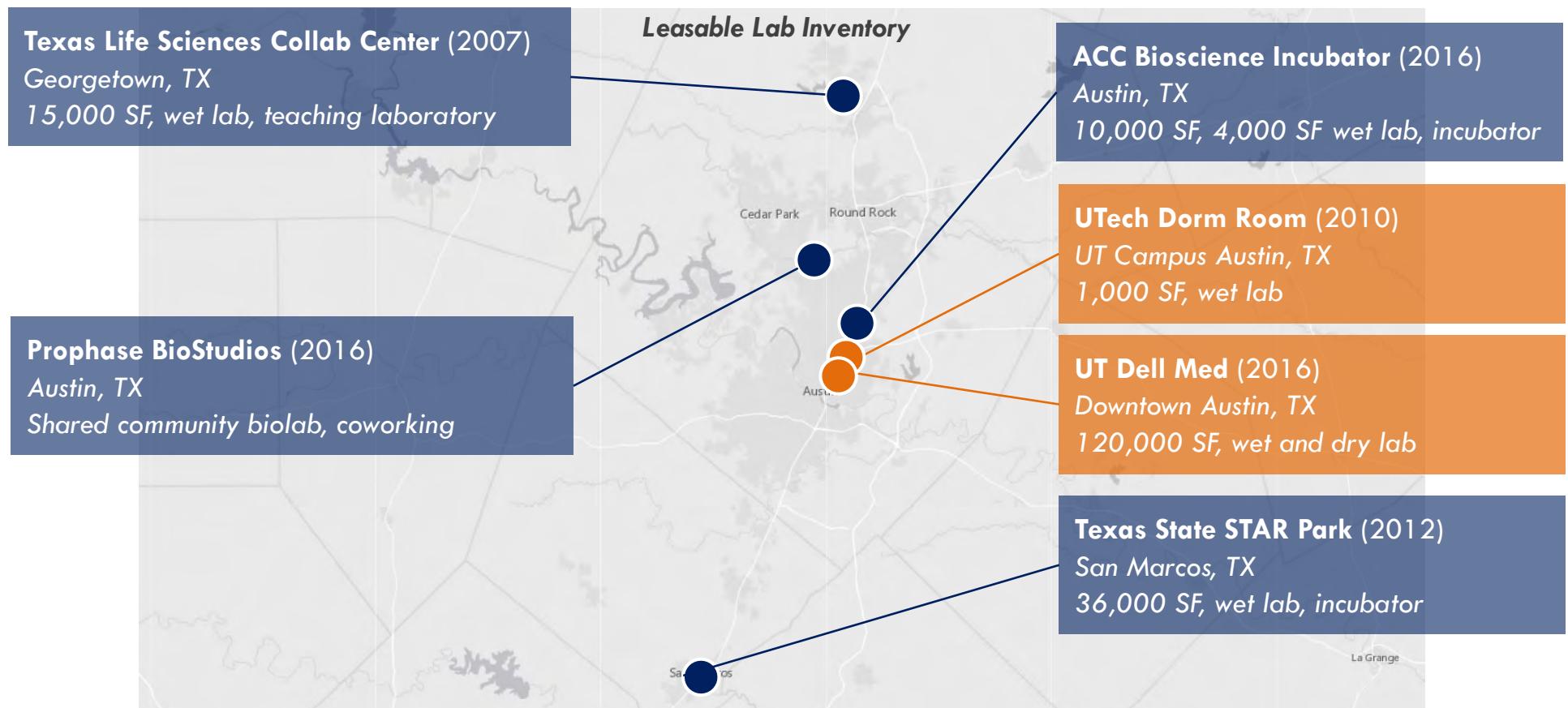
Taking into account the existing pipeline of planned office deliveries Downtown, there is a **remaining office demand of 6.4 million square feet** that the Innovation District can tap into. While office buildings in South Downtown average around 250,000 to 350,000 square feet, office buildings in the Northern half of Downtown average 150,000 to 250,000 square feet. Assuming that **in the short-term the Innovation District will likely be able to support deliveries similar to the North and in the mid- to long-term could eventually support larger deliveries**, a reasonable size delivery will likely average 200,000 to 300,000 square feet. Based on these assumptions, the Innovation District would need to **capture 11% to 16% of Downtown's average annual leasing activity (1.9 million SF) to lease up within 18 months**. If this timing sets the pace of planned absorption, the initial phase of the Innovation District could support four deliveries over the course of the next decade which is a total of **800,000 to 1,200,000 square feet** of office space by 2029. This translates to a 8% to 12% capture rate of overall Downtown demand and **15% to 22% of Downtown demand after accounting for pipeline deliveries**.

The size of Austin's lab market is dwarfed by leading Life Science markets, but Downtown lab rents are higher than Class A office rents.



Austin's lab market is still very small and in 2011 total inventory was estimated at 400,000 square feet. With UT Dell Med, Downtown now has approximately 100,000 square feet of lab space but the small size of Austin's lab inventory is particularly stark when compared to established life science markets like **Kendall Square which has 8.4 million square feet of lab space – 21x greater than Austin's total inventory**. However, current **lab rents in Downtown Austin average \$90 per square foot which is 27% higher than even top of the market Class A office rents**. This is just slightly less than rent levels of Kendall Square where top of the market lab rents are approaching \$100 per square foot. Lab rental rates in Austin also vary depending on the type of lab space and wet lab commands even higher average rents. The Innovation District's ability to create a thriving life sciences cluster does to some extent rely on availability and affordability of leasable lab space for innovators in lab-using industries.

Austin has a small collection of lab facilities for startups and entrepreneurs but the majority of these are spread throughout the greater Austin region.



The majority of leasable lab space available to startups and life science entrepreneurs in the Austin region is located in peripheral locations in neighboring communities like Georgetown, Round-Rock, and San Marcos. This stems from a variety of reasons including – lower cost of land, contiguous space availability, traffic, etc. The recent facilities that have been built in these periphery locations include a mix of industrial park new development and repurposed industrial buildings. These horizontal building typologies are ideal for lab development. The Innovation District may be able to capitalize on this reality by leveraging its height-inhibited Capitol View Corridor sites for some modest lab development.

Downtown can likely support additional demand for approximately 100,000 square feet of lab space by 2029.

DOWNTOWN LAB DEMAND

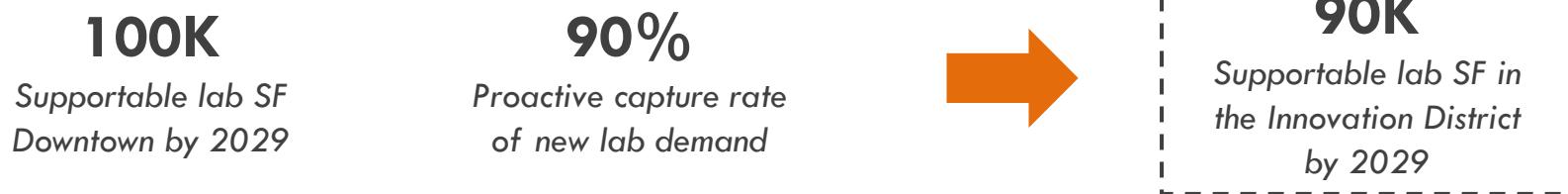
1,430	Projected Lab-using Employment Growth in Austin MSA by 2029
319	Gross SF per Employee
455,100	Gross New Supportable Square Feet in Austin MSA
22%	Downtown Share of Existing Lab Space in 2018
99,900	Gross New Supportable Square Feet in Downtown

Based on employment growth trends in lab-using sectors, Downtown Austin will be able to support an additional 99,900 square feet of new lab space by 2029. The largest lab-using sectors in the Austin region include industries like medical laboratories, research and development in biotechnology, and pharmaceutical preparation manufacturing. In total, these lab-using industries have added 1,250 jobs in the Austin MSA since 2010 and they are projected to add an additional 1,430 jobs by 2029. Based on the average gross square feet required per employee in these industries, and the assumption that Downtown continues to capture its relative share of lab inventory in the Austin-Round Rock MSA, Downtown could support approximately 99,900 square feet of additional lab space. This would nearly double the existing inventory of lab space Downtown.

Source: HR&A Advisors, Emsi, ATI Wet Lab Feasibility Study 2011; Note: 319 square feet per employee was the assumption used by ATI in their 2011 Wet Lab Feasibility Study in Austin; Note: This analysis is based on the assumption that current growth and demand trends continue at their current rate

With proactive marketing, the initial phase of the Innovation District can likely support 90,000 square feet of Downtown's projected growth in lab space.

INNOVATION DISTRICT PHASE I LAB DEMAND



HR&A projects that the Innovation District can capture approximately **90% or 89,900 square feet** of Downtown's total projected growth in lab space by 2029. However, as previously discussed, high land prices, constrained land areas, tedious permitting processes, and a competitive development environment do not make Downtown the natural choice for lab development in the region which is why much of the lab space developed in Austin to-date has been located in peripheral areas. This aggressive capture rate of lab demand and the growth of lab space Downtown in general depends on aggressive marketing of the area to potential new tenants and the potential availability of incentives and other resources to make Downtown lab development more attractive to prospective businesses. **With its connection to UT Dell Med, the Innovation District can position itself to capture the lion's share of lab demand Downtown**, but lab will likely not be a dominant use in the Innovation District. As previously noted, many of the industries in Austin's existing and emerging innovation economy do not require lab space and instead either utilize a mix of lab and office or just office space. A modest amount of lab space will likely be sufficient to support a Life Sciences cluster Downtown.

Source: HR&A Advisors, Emsi, ATI Wet Lab Feasibility Study 2011; Note: 319 square feet per employee was the assumption used by ATI in their 2011 Wet Lab Feasibility Study in Austin; Note: This analysis is based on the assumption that current growth and demand trends continue at their current rate

Strong demand across all uses suggests the Innovation District can support a variety of uses in a true mixed-use environment.

	TOTAL SUPPORTABLE AMOUNT	PHASING CONSIDERATIONS
Residential	800 – 1,000 residential units (800,000 – 1,000,000 resi SF)	
Hotel	600 – 750 hotel rooms (300,000 – 375,000 hotel SF)	<p>Short-term: extended stay, thematic product tied to UT Dell Med and the hospital</p> <p>Long-term: higher-end, luxury product</p>
Office	800,000 – 1,200,000 office SF	<p>Short-term: delivery sizes averaging 150,000 SF – 250,000 SF</p> <p>Long-term: delivery sizes averaging 250,000 SF – 350,000 SF</p>
Lab	90,000 lab SF	
TOTAL	2.0 million – 2.7 million SF	

Downtown is poised for continued growth and the Innovation District can leverage the market's strengths to foster a vibrant mixed-use district.

STRENGTHS

- Downtown has experienced enormous growth across all uses, with growth concentrated in South Downtown
- High rents demonstrate the high value that residents and business alike place on being in Downtown Austin

OPPORTUNITIES

- True mixed-use areas where multiple uses are collocated in close proximity have generated the strongest performance in Downtown – the District can leverage this strategy
- Demand is strong and all uses are poised to continue to grow in the future

WEAKNESSES

- Achievable rents in the North continue to lag behind rents in South Downtown and comparable projects in the South outperform rents in the North by approximately 20%

THREATS

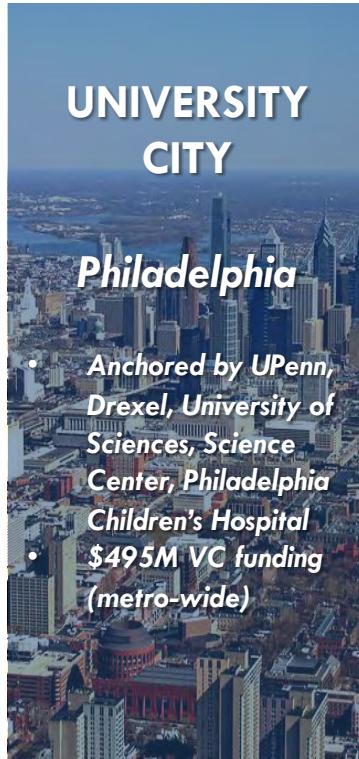
- The next era of Downtown growth is poised to spillover into the Northeast Quadrant so limited time remains to commit to a holistic vision
- Without intervention, real estate values in the North will underperform those in the South

IMPACT ANALYSIS

THE POWER OF INNOVATION DISTRICTS



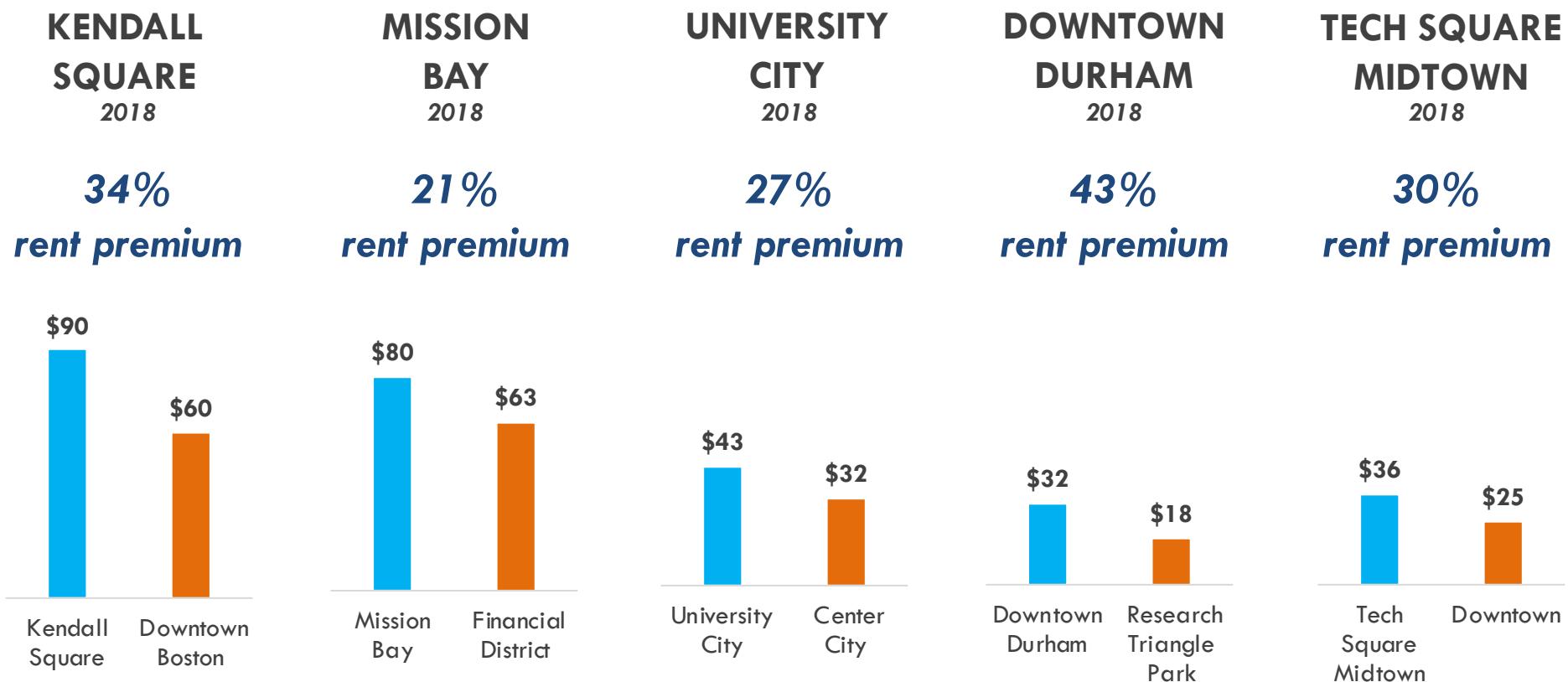
Innovation Districts are a type of intervention that has the power to shift the trajectory of market dynamics.



HR&A evaluated five Innovation Districts around the country to better understand how the real estate in these districts performed relative to other competitive business districts in their region over the course of the district's development lifecycle. While these districts are all at different stages of development maturity and have a different mix of assets, partners, and primary focus areas, all of these districts have real estate that has outperformed competitive areas. HR&A evaluated the performance of these districts by assessing both **rent premiums** – the difference between Class A office rents in the Innovation District compared to competitive Business Districts in a given year as well as **rent growth premiums** – the difference between the rate at which rent grew in the Innovation District compared to the rate at which it grew in the Business District during a given time period.

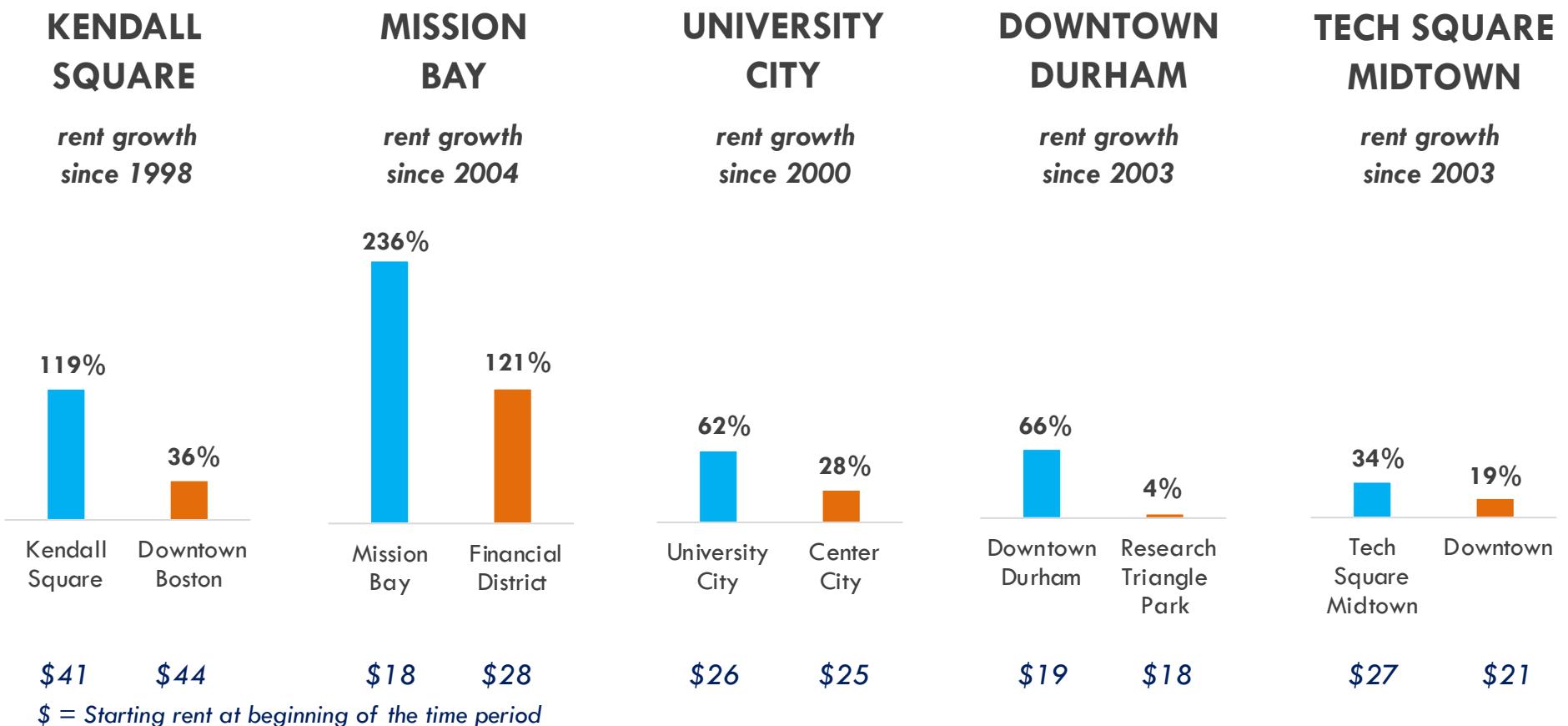
Source: Harvard Business Review, MIT Technology Review, Business Journal, Research Triangle Regional Partnership, ULI, Brookings "Connect to Compete", City Lab 2016; Note: all venture capital funding statistics are for the entire metropolitan area

Innovation Districts often command significant rent premiums in Class A Office rents over other leading business districts.



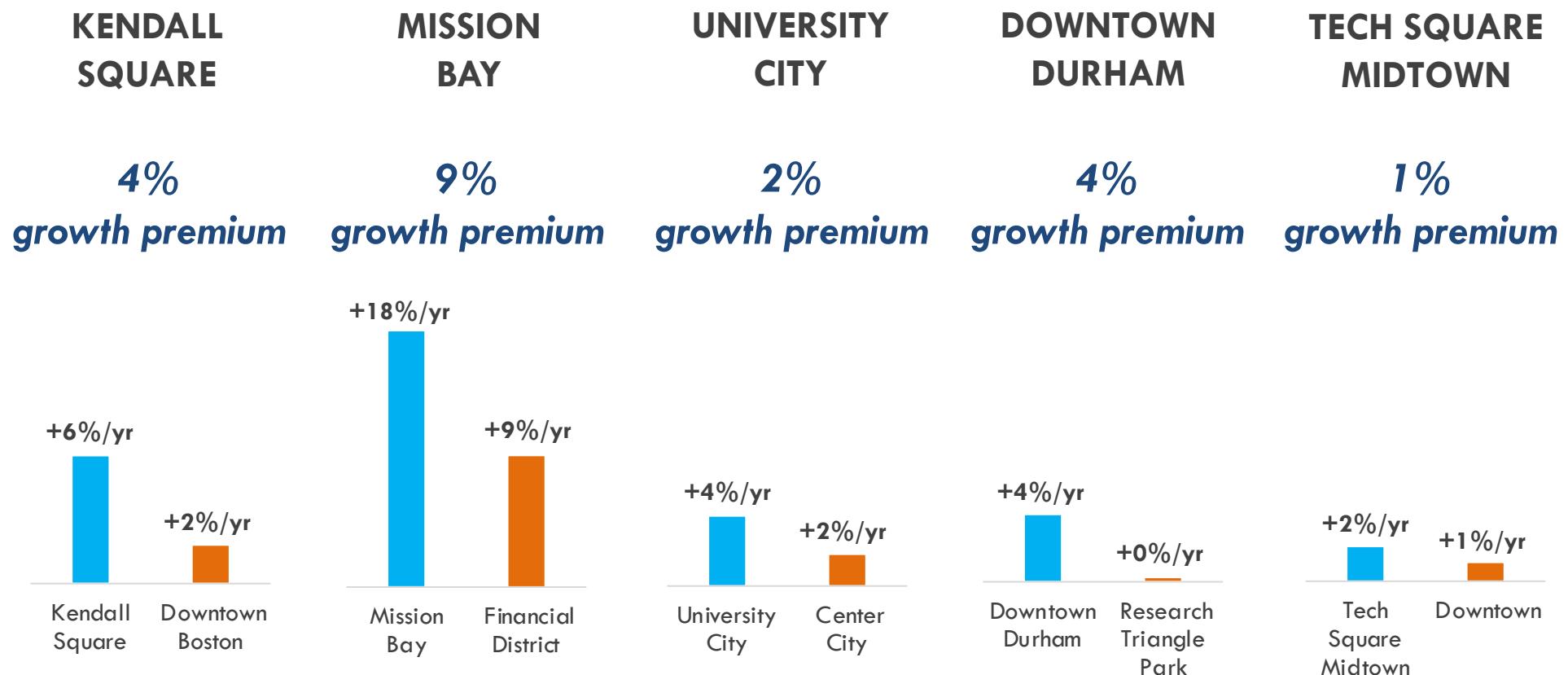
In 2018, these five innovation districts commanded **rent premiums that ranged between 21% to 43%** over competitive business districts. This indicates that tenants are often willing to pay a premium for office spaces that are located within an innovation district and this results in higher rents than what the market dictates in competitive areas. These **rent premiums can fluctuate year to year** as awareness grows of the Innovation District, new phases of expansion are implemented, and compelling anchors are secured. It is important to recognize that the **value of the Innovation District cannot be realized overnight** so we also evaluated the rent growth premium – a more informative measure of how Downtown Austin's future with the Innovation District might differ from a continuation of current conditions.

Over their development lifecycle, rent growth in Innovation Districts also consistently outpaces business districts.



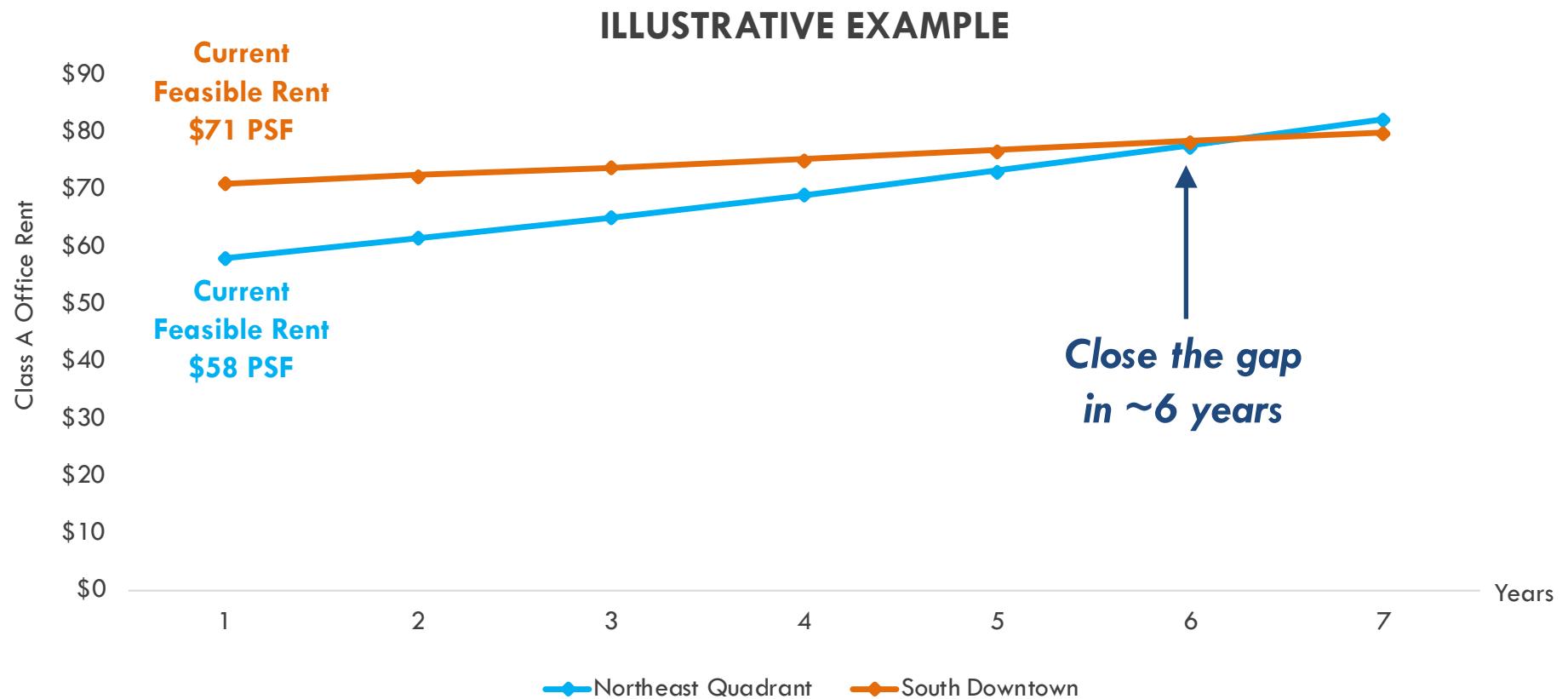
The lifecycle of each of these innovation districts reflects the unique history and context of that region and each district advanced through its development stages at different rates – from initial opening to early stage development to accelerated growth to stabilization. However, over the course of each of these five districts' development lifecycles, **Class A office rent growth within the Innovation district outpaced Class A office rent growth in the competitive district over the same time period**. This total growth difference ranged from 15% in Tech Square Atlanta to 115% in Mission Bay.

On an annualized basis, rents in Innovation Districts can grow as much as 9% faster than in surrounding business districts.



These overall rent growth rates can also be annualized to identify the annual rate at which rent increased year over year throughout the district lifecycle. This **annual rent growth premium ranged from 1% to 9%** and averaged 4% across these districts. This suggests that regardless of starting rents, once a well-designed and thoughtfully programmed innovation district is established, **innovation district rents can accelerate at a faster rate** than rents in competitive business districts. **This is particularly relevant to the Austin's Innovation District given that rents in the Northern half of Downtown are on average 20% lower than comparable products located in the Southern half.**

An Innovation District can help the Northeast Quadrant close the expected rent gap between this sector and the Southern half of Downtown.



For instance, if we look at an illustrative model based on current conditions in Austin and we assume the initial round of tenants in the Austin Innovation District are willing to lease the space at a rate comparable to the rents at the recently delivered SXSW Tower in the Northwest Quadrant (\$58), then the current rent gap between this rate and top of the market Class A office rents in South Downtown is almost 22%. However, as time passes, **the Innovation District could experience an annual rent growth premium of 4% that allows it to close the existing gap and achieve rents on par with South Downtown within 6 years.**

To quantify the impact of Innovation District development in Austin, HR&A modeled two development scenarios to evaluate the incremental benefits.

SCENARIO 1 Baseline

~2.3 million SF	
Multifamily High-Rise	500 units
Multifamily Mid-Rise	500 units
Hotel Luxury	400 rooms
Hotel Economy	400 rooms
Office High-Rise	-
Office Mid-Rise	900,000 SF
Lab	-
Office rent growth premium	0% per year

SCENARIO 2 Innovation District

~2.3 million SF	
Multifamily High-Rise	400 units
Multifamily Mid-Rise	400 units
Hotel Luxury	300 rooms
Hotel Economy	300 rooms
Office High-Rise	400,000 SF
Office Mid-Rise	800,000 SF
Lab	90,000 SF
Office rent growth premium	4% per year

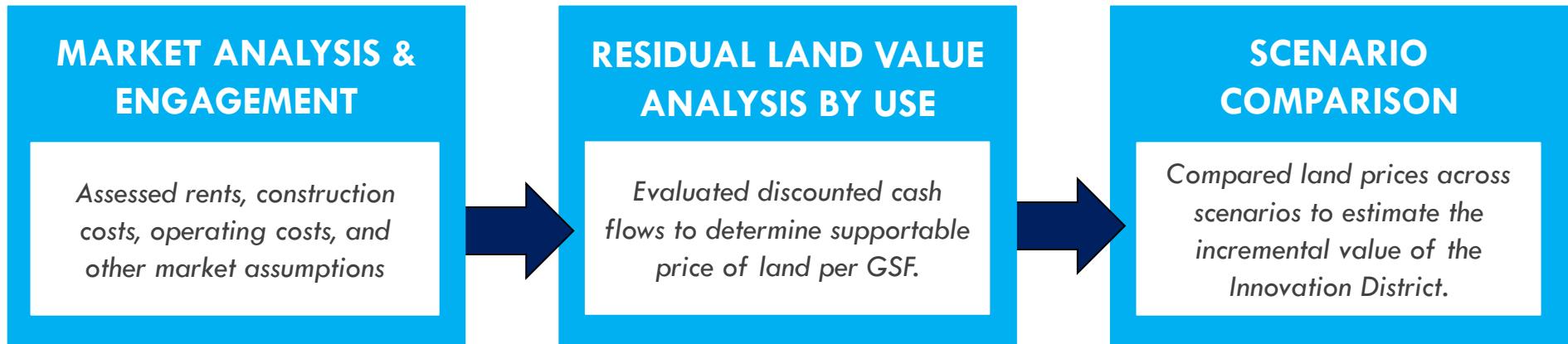
HR&A developed two scenarios to test whether developing the Innovation District fundamentally altered the value of real estate in the Northeast Quadrant and the overall economic impact on the region. Under the Baseline Scenario, HR&A assumed that market forces continued along their current trajectory, trending towards the maximum demand for residential and hotel and the minimum of office demand over the next decade. Under the Innovation District Scenario, HR&A assumed that while a significant amount of residential and hotel were still developed, office delivery was maximized along with a modest amount of lab to create the fundamental pillars of a mixed-use, health and life sciences hub. HR&A also assumed a 4% annual rent growth premium for office uses based on the average of premiums found in other innovation districts around the country. Retail, is considered roughly 5% of the district overall, but it is assumed to be incorporated into ground floor of each use rather than modeled separately as a standalone use. These program scenarios were used to evaluate the incremental real estate value, the economic impacts, and the fiscal impacts of Innovation District development.

REAL ESTATE IMPACT



HR&A evaluated the supportable land value of different uses within the Northeast Quadrant and projected the incremental impact of Phase I of the Innovation District.

REAL ESTATE IMPACT ANALYSIS METHODOLOGY



The Innovation District is expected to generate additional real estate value over the baseline as a result of the diversity of uses and the office rent growth premium, as seen at other Innovation Districts across the country. HR&A used a residual land value analysis to estimate this incremental value. **These findings demonstrate how the projected Phase I (10-year) build out will impact the land value in the district.** Residual land value analysis is a methodology used to evaluate the feasibility of a development project and is frequently used to help determine highest and best use of land. The model uses assumptions about current and future expected market conditions to project future cash flows for a given use up until disposition or the point of sale. Cash flows include construction and development costs, financing costs, operating costs and revenues, and developer return. The cumulative cash flow is then discounted back to today's dollars to **determine the maximum acquisition price a developer would be willing to pay** for the potential project to receive their required return upon sale. This process **determines the value of various uses on a built square foot basis** and when applied to an assumed development program, estimates the total projected value of that program.

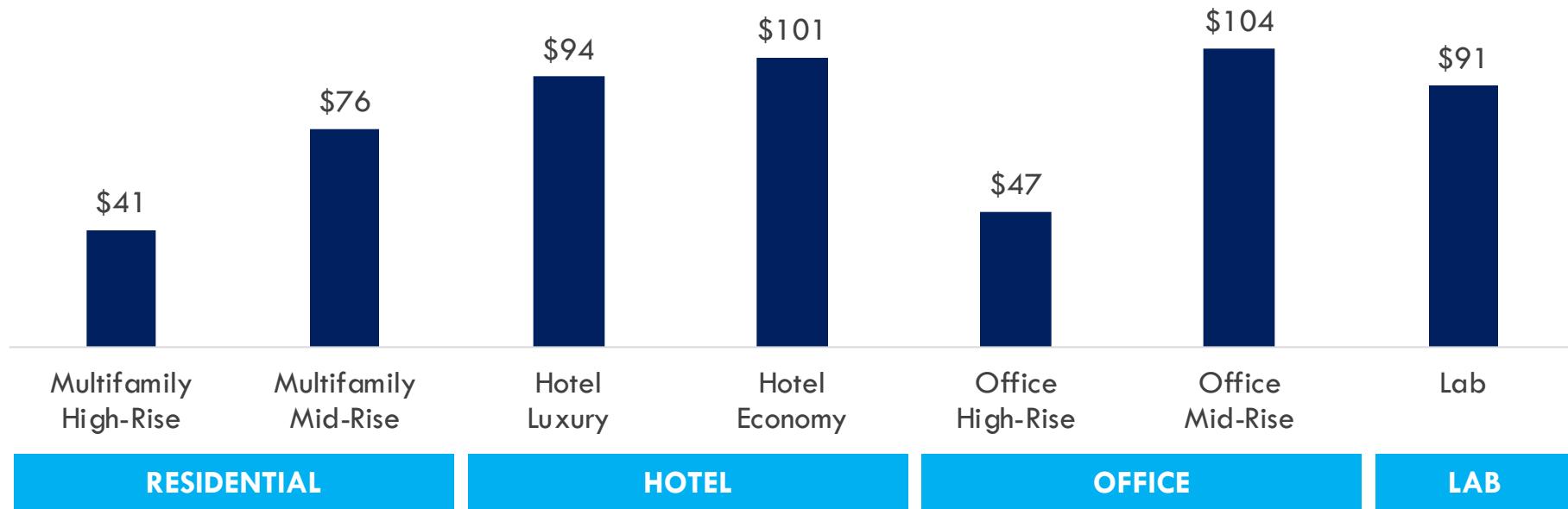
HR&A used the two program scenarios to understand the incremental land value of creating an Innovation District in Downtown Austin.



HR&A analyzed the uses that seemed most likely to develop in the Northeast Quadrant for two potential program mixes or scenarios: 1) a **Baseline Scenario** and 2) an **Innovation District Scenario**. The cumulative value of each scenario was then compared to estimate the incremental real estate value attributable to Innovation District development. **HR&A quantified the residual land value for each use and the overall land value of each scenario** and then compared the total land value of each to estimate the incremental impact attributable to Phase I (10-year) of Innovation District development.

With the booming market in Downtown Austin, all tested uses were feasible but some produced greater value than others.

Residual Land Value Per GSF under Baseline Conditions



Overall, the residual land values for all of these uses ranged between \$41 per built square foot (Multifamily High-Rise) to \$104 per built square foot (Office Mid-Rise). The variety of viable uses reflects the exciting potential for the Northeast Quadrant to support a true mixed-use district that incorporates a number of different product types. Mid-Rise Office and Mid-Rise Multifamily appear to be particularly valuable in this area and while they demand a slightly lower rent, they generate higher per square foot land values under current market conditions in the Northeast Quadrant. Lab also generates a positive residual land value Downtown but may require City incentives to entice qualified developers who have the experience and accumulated knowledge of delivering this type of product in what is perceived to be Austin's riskier and unproven lab market.

Based on these scenarios, the Innovation District Phase I will create \$293 million in land value; this is \$102 million or 53% greater than the Baseline.

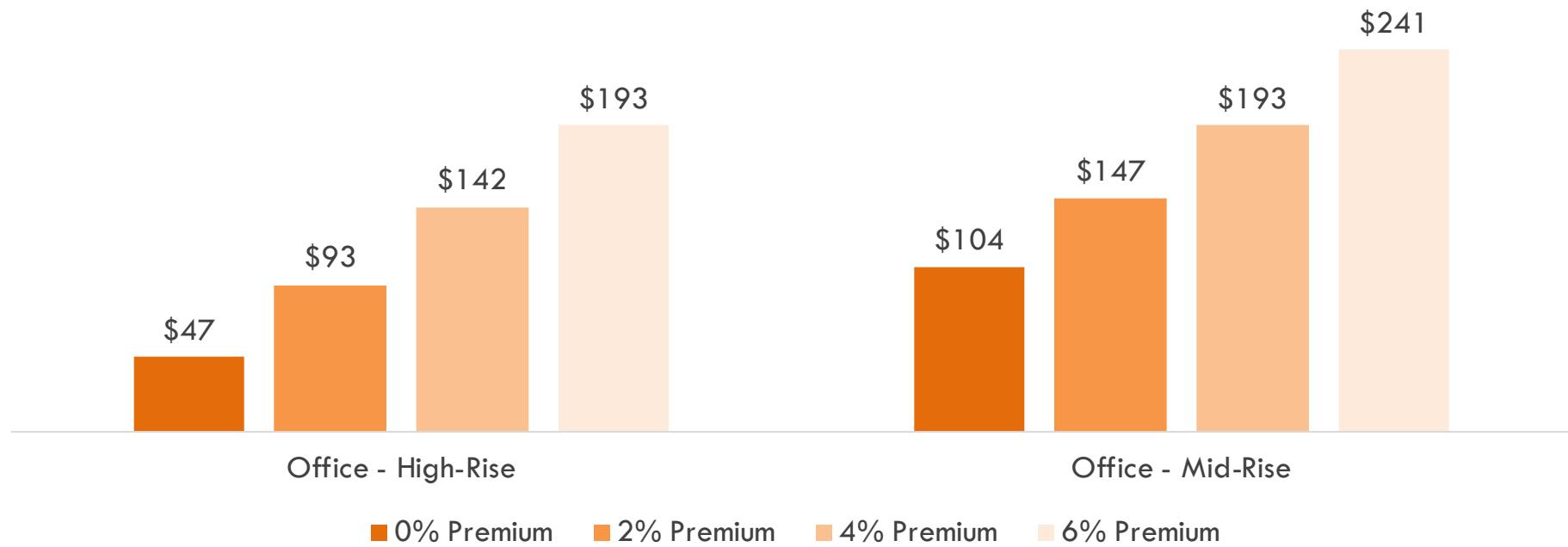
Residual Land Value Analysis

INNOVATION DISTRICT	BASELINE	NET NEW VALUE
\$293 M Total Scenario RLV	\$191 M Total Scenario RLV	\$102 M Total Scenario RLV +53% increase
\$122 / GSF Weighted Average RLV	\$83 / GSF Weighted Average RLV	\$39 / GSF Weighted Average RLV +47% increase

While the Baseline Scenario generates substantial real estate value of \$191 million or a weighted average residual land value of \$83 per built square foot, the Innovation District Scenario by comparison generates \$293 million in real estate value or \$122 per built square foot. In other words, the Innovation District generates 1.5x the land value as that of the Baseline Scenario. This translates to a net increase in land value of approximately \$102 million or \$39 per built square foot. This significant value increment is generated by the greater mix of uses, the greater densities that are achieved by some uses, and the office rent growth premium realized within the Innovation District Scenario.

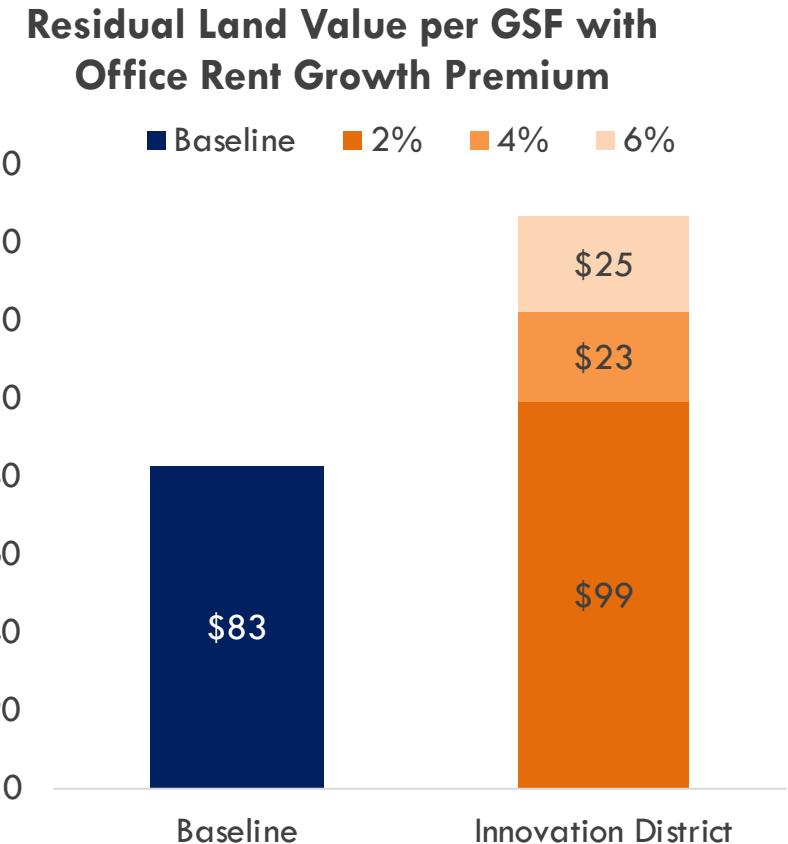
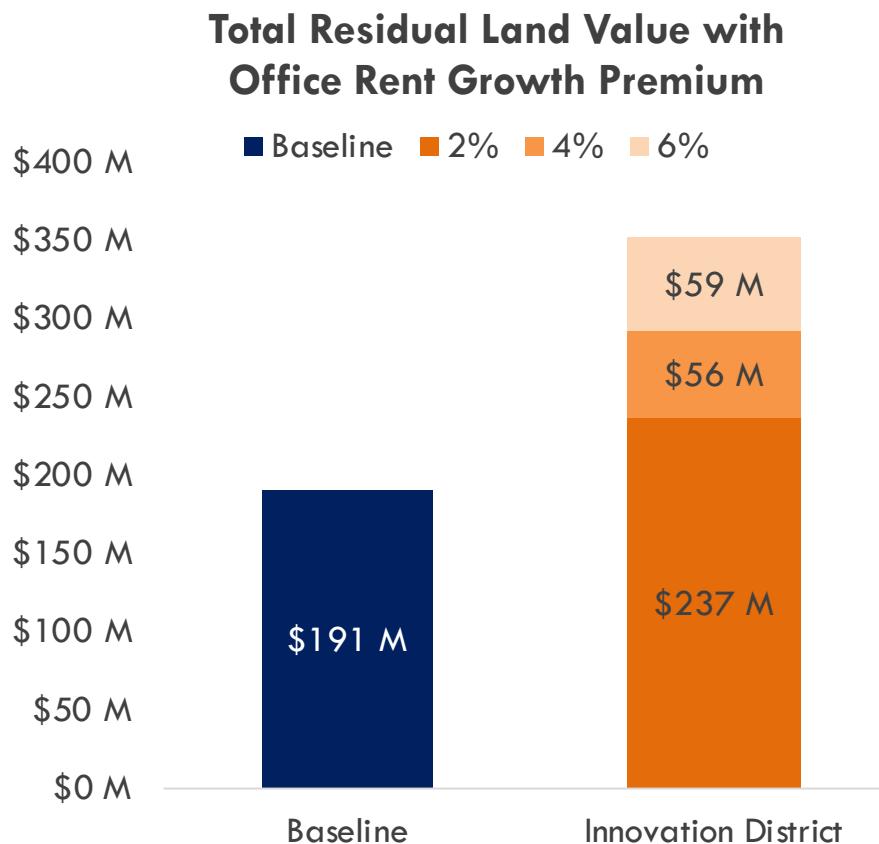
HR&A tested a range of assumed office rent growth premiums to evaluate the corresponding impact on incremental value.

Residual Land Value per GSF of Office Space



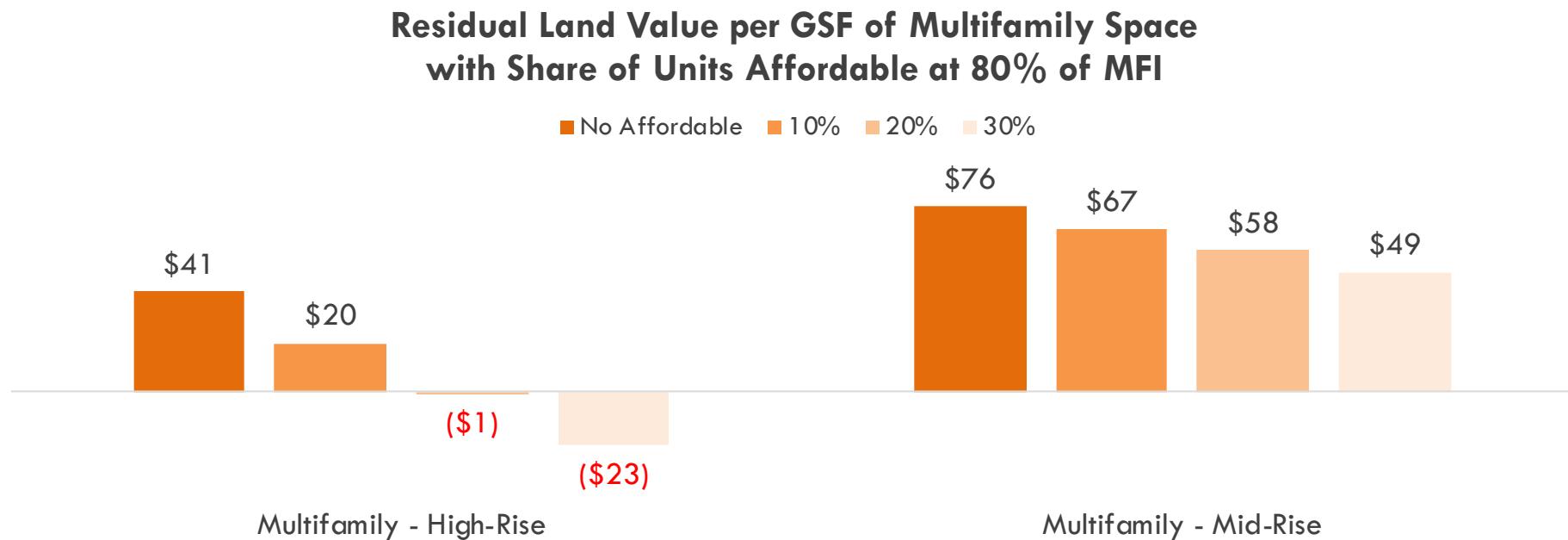
The innovation districts in comparable cities examined by HR&A experienced **annualized office rent growth premiums that ranged between 1% and 9% across the various districts**. While HR&A assumed the average of 4% for our analysis, HR&A tested a range of rent growth assumptions to determine the corresponding impact on office values. Under conditions of a 0% rent growth premium, residual land values for office uses were the same as under a Baseline Scenario, but as the rent growth premium increases, the additional revenues increase the supportable land value for office properties across both typologies.

The office rent growth premiums translate to substantial gains in real estate value for the Innovation District Scenario.



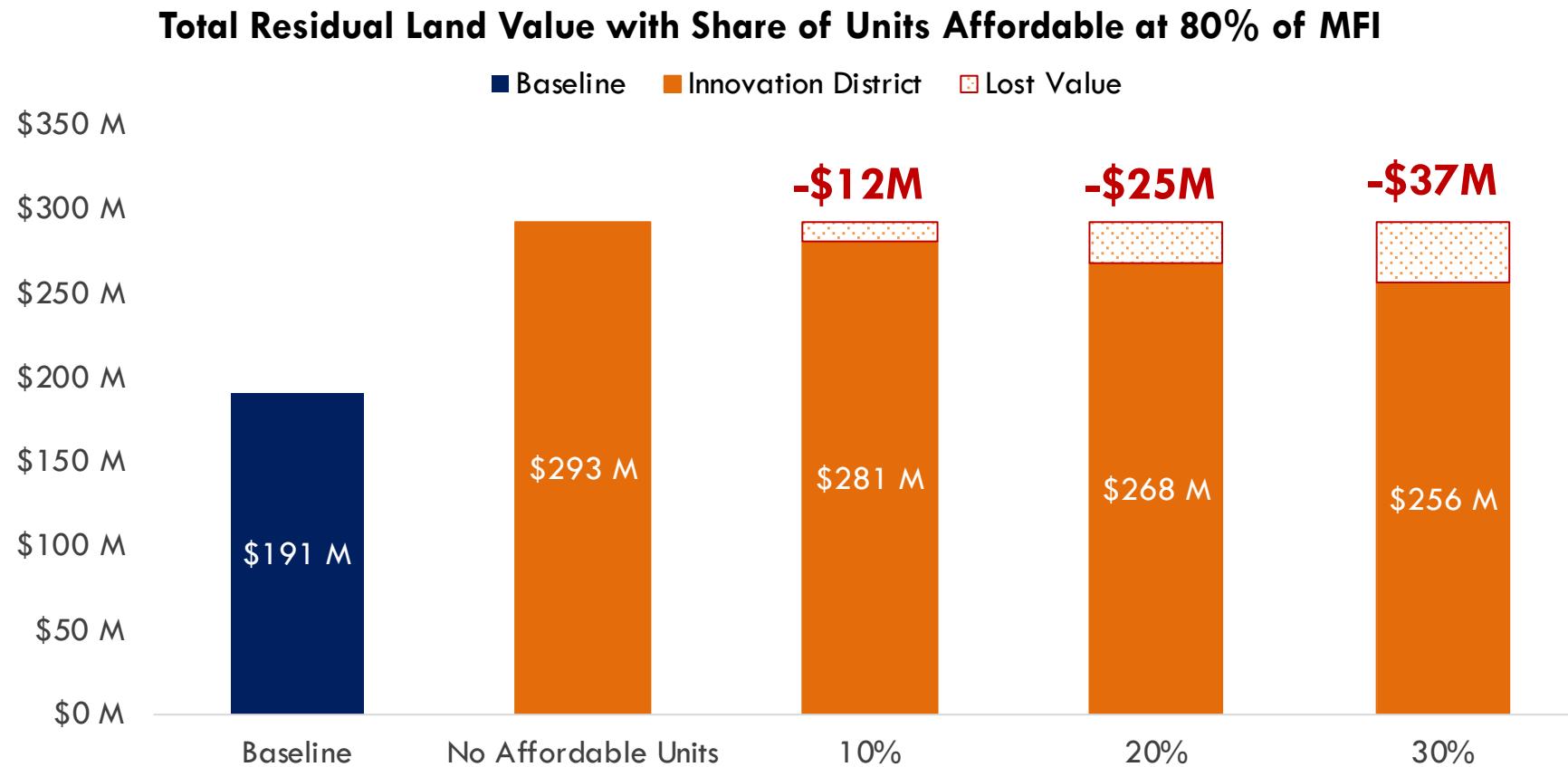
As previously discussed, Innovation Districts have experienced up to 9% annualized growth rate premium. HR&A applied the median of 4% annual office rent growth premium in the Innovation District Scenario. Assuming a more conservative office rent growth premium of 2%, **the Innovation District Phase I still generates \$46 million more than the Baseline.**

Including affordable housing will decrease residual land value, but development remains feasible and incentives could encourage inclusion.



Affordable housing has consistently been cited as a primary objective for development in the Northeast Quadrant of Downtown. While **including affordable housing will undoubtedly have a negative impact on multifamily residual land value, mid-rise development remains realistic without subsidy. High-rise development, however, would require additional subsidies or alternative revenue streams to achieve the developer's required rate of return on the project.** First, HR&A tested 10% of units at 80% of Median Family Income (\$86,000 for a 4-person household) which supported positive land values for multifamily before any additional subsidy. However, these land values are much lower than other competitive uses so to be successful, affordable housing development will likely require zoning mandates, public incentives, and/or commitment from mission-driven landowners. Greater levels of affordability will further reduce land value and development feasibility given market conditions (i.e. high construction costs, cap rates, and developer required returns) but a more detailed feasibility study should be conducted to assess its potential.

Despite the lost value from developing affordable units, the Innovation District Phase I remains more valuable than the Baseline.

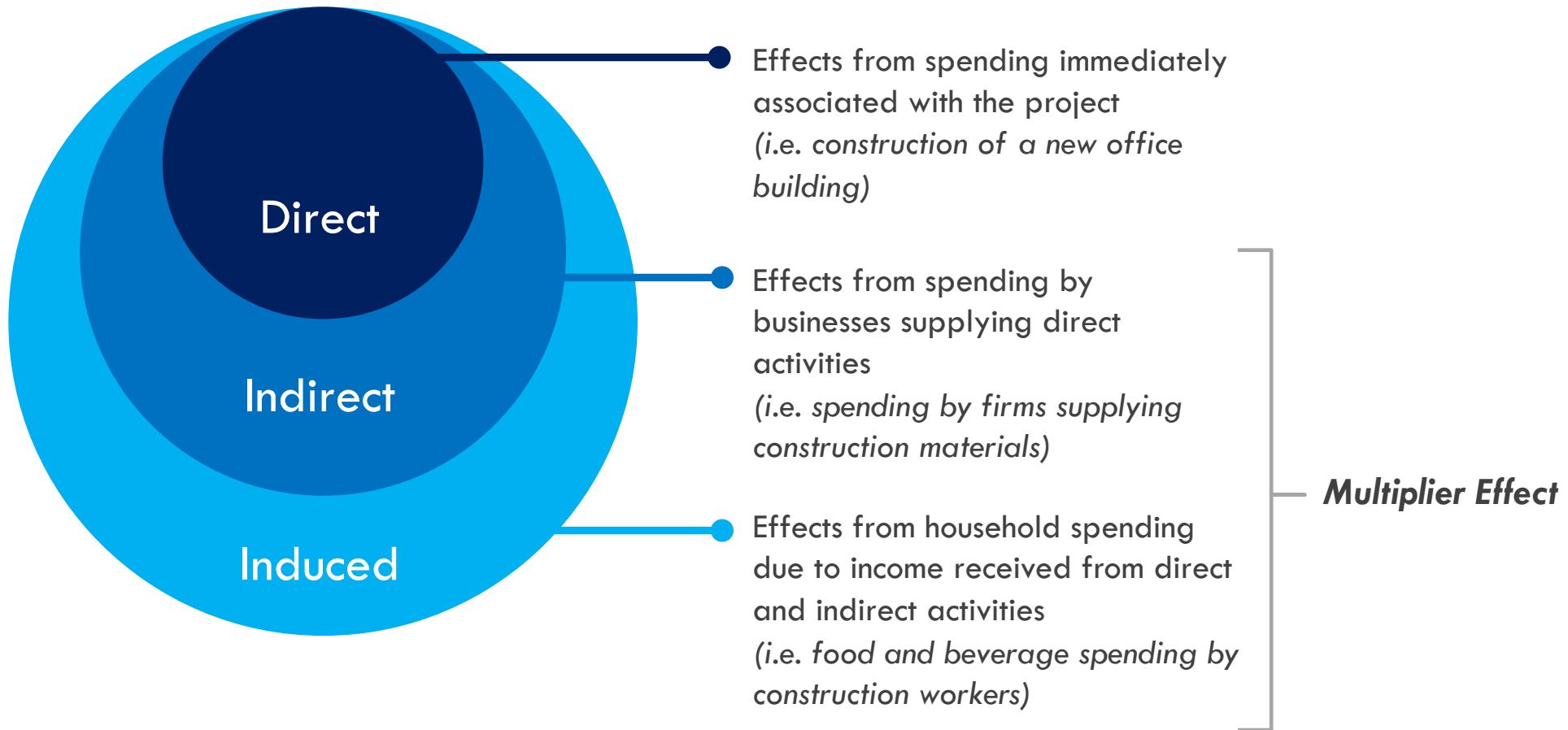


Although including affordable units will decrease the residual land value of the overall development, the total **land value of the innovation district remains greater than the expected value of the baseline** when including 10% affordable units at 80% of MFI, 20% affordable and 30% affordable. The greater value of the Innovation District ultimately will make affordable housing units more feasible for developers and provide more opportunities to accomplish these social impact goals.

ECONOMIC & FISCAL IMPACT



HR&A utilized IMPLAN to quantify the economic impact of direct, indirect and induced effects of creating an Innovation District in Downtown Austin.



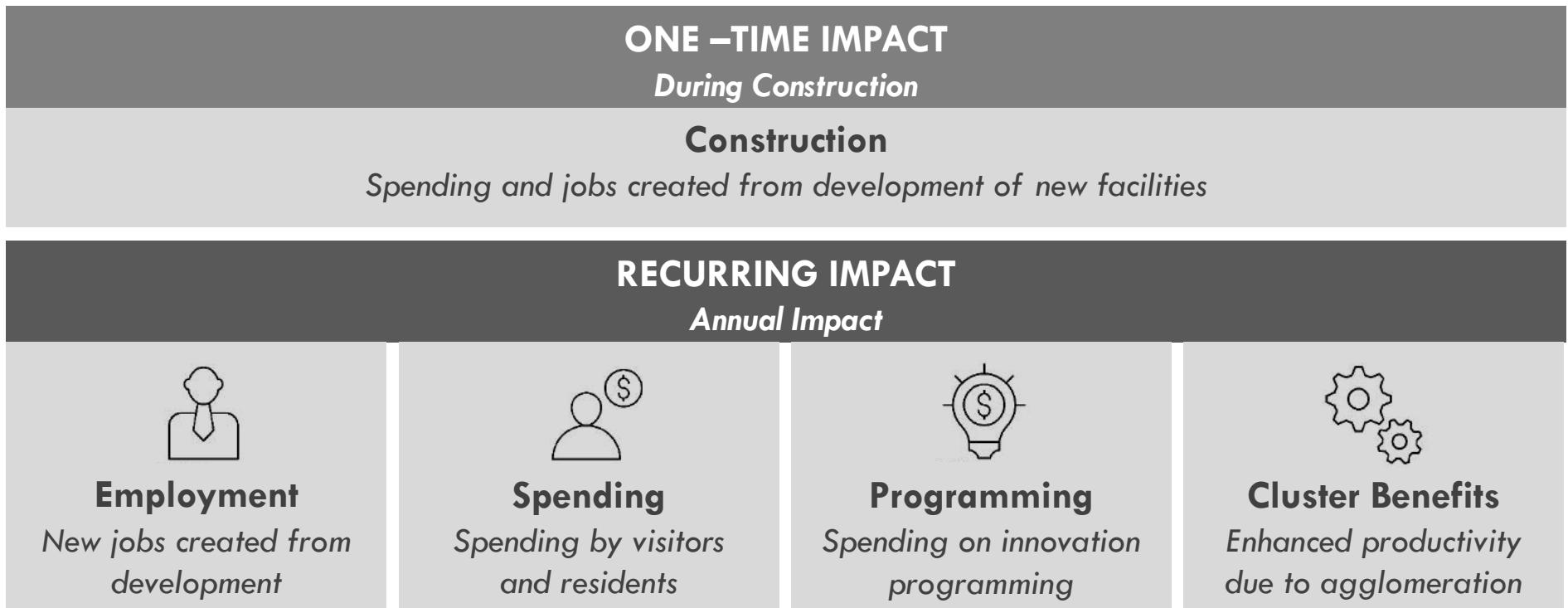
In addition to quantifying the incremental real estate benefits attributable to development of the Innovation District, HR&A also evaluated the economic and fiscal impacts that would result from implementation of the district. To conduct this analysis, **HR&A used IMPLAN, an industry standard input-output modeling program to estimate the anticipated benefits accruing within Travis County.** The results of this IMPLAN analysis are outlined on the following slides.

HR&A also used the two program scenarios to understand the net new economic and fiscal impact of creating an Innovation District in Downtown Austin.



Similar to the real estate analysis, 1) a **Baseline Scenario** and 2) an **Innovation District Scenario** were used to evaluate the economic and fiscal impact of the development. Each of these scenarios relied on the assumed development program outlined in the previous section. Outlined in the following slides, is the measured economic impact of a mix of activities for both scenarios. **HR&A quantified the total output, total labor income, and total jobs for each scenario** and then compared the total benefits of each to estimate the incremental impact to Travis County that was attributable to Innovation District development.

The Innovation District will generate both one-time construction impacts as well as ongoing impacts from annual operations.



The impact model consists of two different groups of activities— **one-time impacts from construction** of new development and **recurring annual impacts from operations**. Recurring impacts consist of new jobs and employment activities created across a range of industries in new development, spending by visitors at new hotels in the district, and spending by residents in new residential projects. These activities will occur in both the Baseline Scenario and Innovation District Scenario differing in magnitude only by the assumed differences in development programs. However, **the Innovation District Scenario also includes two additional activities:** the spending by Capital City Innovation on annual district programming and operations and the productivity enhancements expected to result from agglomeration economies – benefits accrued when firms locate within defined economic clusters.

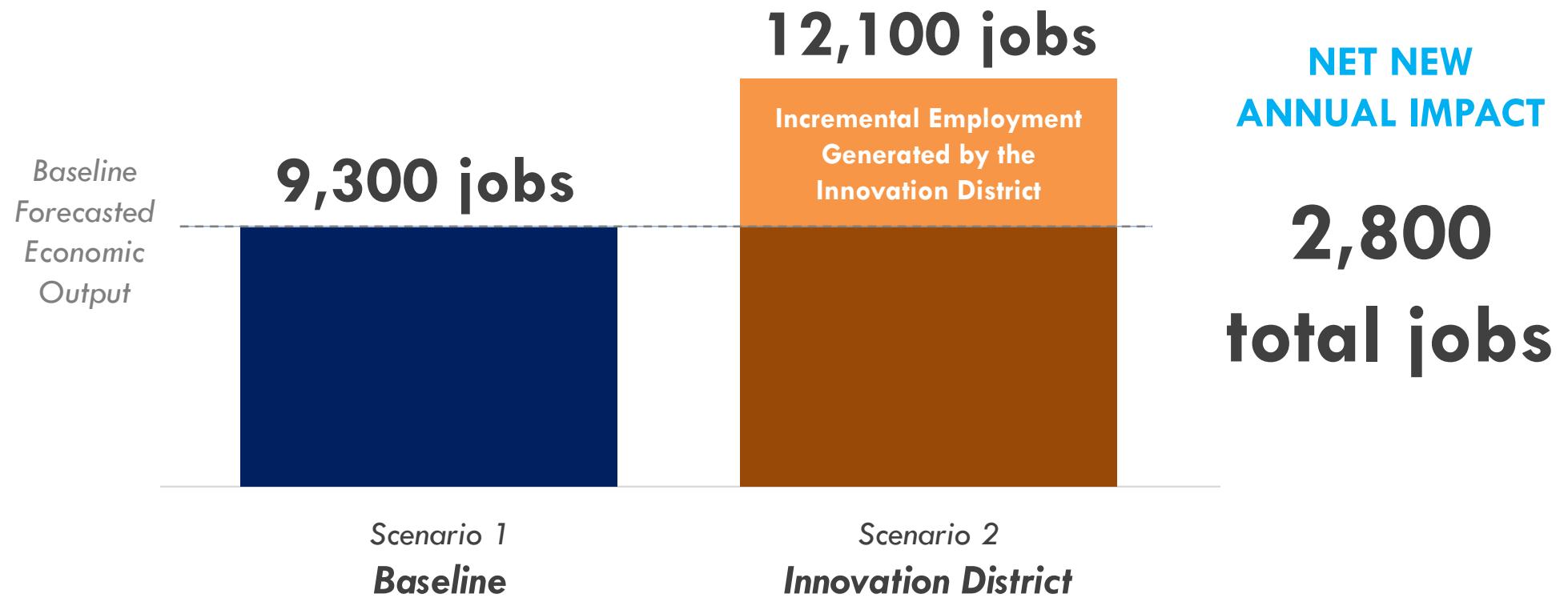
On an annual basis, the Innovation District will produce \$2.5 billion in economic output, \$909 million in cumulative labor income, and support 12,000 jobs.

At the full build out of each of these development programs, the Innovation District will create \$2.5 billion in annual economic output and support 12,100 jobs, compared to the Baseline which would create 9,300 jobs. This is equivalent to a net new impact of 2,800 jobs. Associated with these jobs, the cumulative annual labor income impact is expected to be \$909 million, a net new increment of \$253 million compared to the Baseline Scenario.

One-time impacts from construction are also higher in the Innovation District Scenario, equivalent to \$114 million of net new economic output, 800 net new construction jobs, and \$56 million net new cumulative labor income.

ONE -TIME	RECURRING
INNOVATION DISTRICT IMPACT	
\$1.5B Total Economic Output	\$2.5B Total Economic Output
\$650M Cumulative Income	\$909M Cumulative Income
9K Total Jobs	12K Total Jobs
BASELINE IMPACT	
\$1.4B Total Economic Output	\$1.7B Total Economic Output
\$594M Cumulative Income	\$656M Cumulative Income
8K Total Jobs	9K Total Jobs

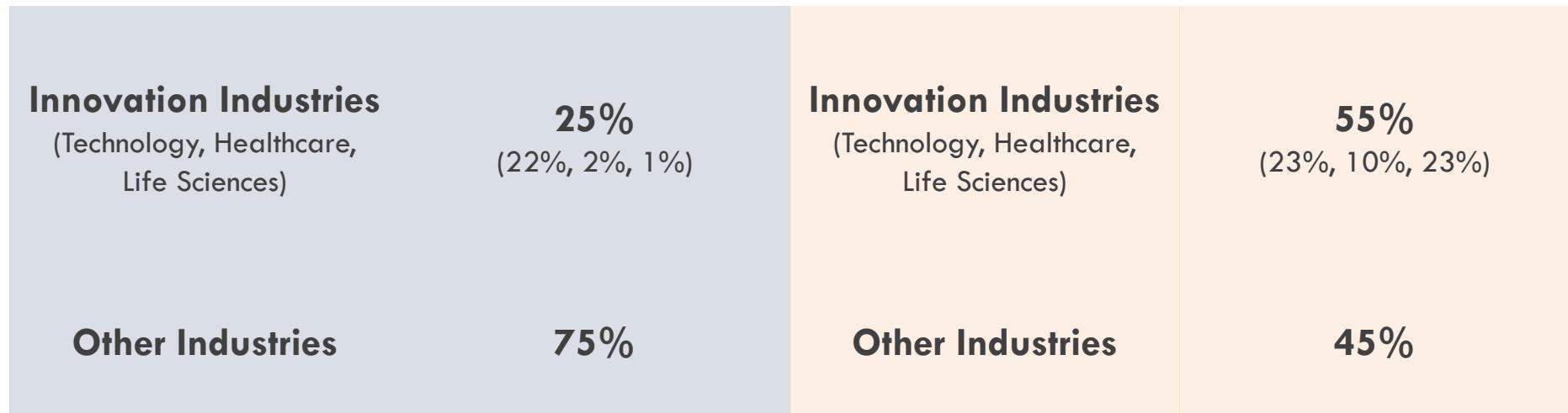
Overall, HR&A found the Innovation District will support 12,100 new jobs, 39% more than the Baseline.



In the Innovation District Scenario, the office and lab uses comprise approximately 54% of the total development program, compared to 39% in the Innovation District Scenario. Based on this development, the Innovation District will support approximately 12,100 new jobs in Downtown Austin compared to just 9,300 jobs in the Baseline Scenario. This reflects **an increase in total employment of almost 40% in the Innovation District Scenario**.

In estimating the distribution of new jobs in the Innovation District, HR&A allocated 55% of office jobs in the district to the three target innovation sectors.

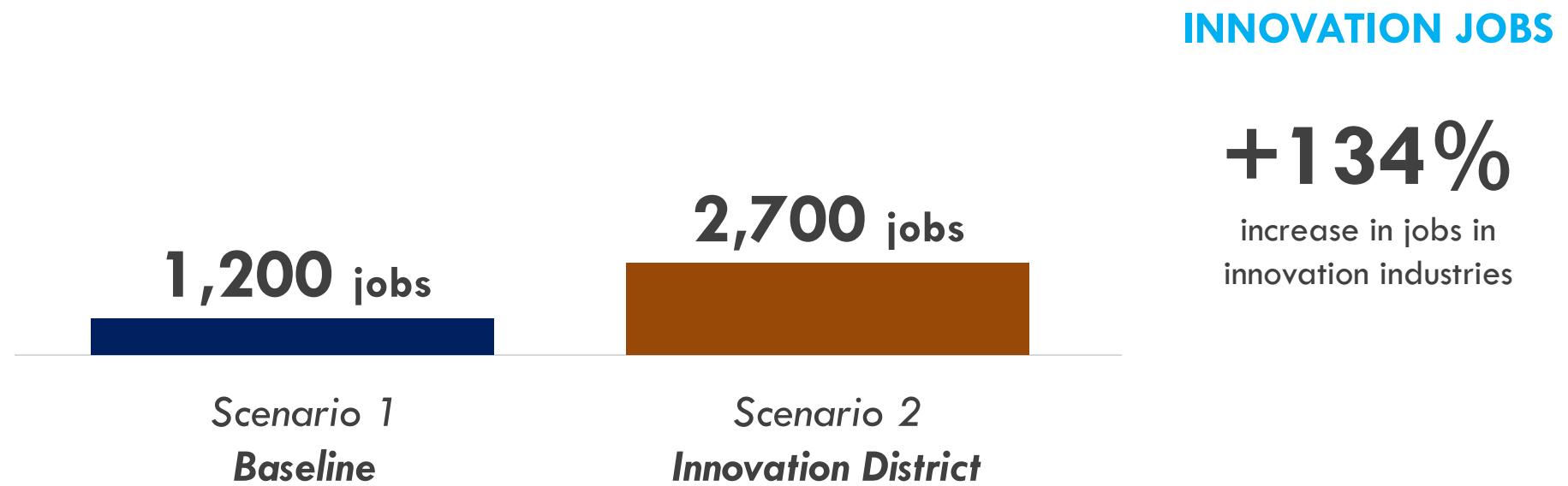
Employment Distribution by Sector



In the Baseline Scenario, HR&A assumed that Downtown's current distribution of jobs would remain constant in the Innovation District, with 75% of jobs comprised of other office-using industries and complimentary professional services. In the Baseline, just 25% of new jobs would be in "innovation industries" – Technology, Healthcare, Life Sciences, and Tech would sustain its dominant share commanding 20% of new jobs. **In the Innovation District Scenario, the Innovation District's employment distribution shifted closer to the distributions found in other innovation districts** and 55% of jobs were allocated to innovation industries. **Employment among these three sectors also becomes more evenly distributed to reflect the growth of emerging sectors like Healthcare and Life Sciences.** Realizing this goal depends on a proactive and aggressive marketing campaign of the Innovation District that successfully recruits tenants in these target industries to the district.

In addition to supporting more overall employment, the Innovation District will increase the number of job opportunities in innovation industries by 134%.

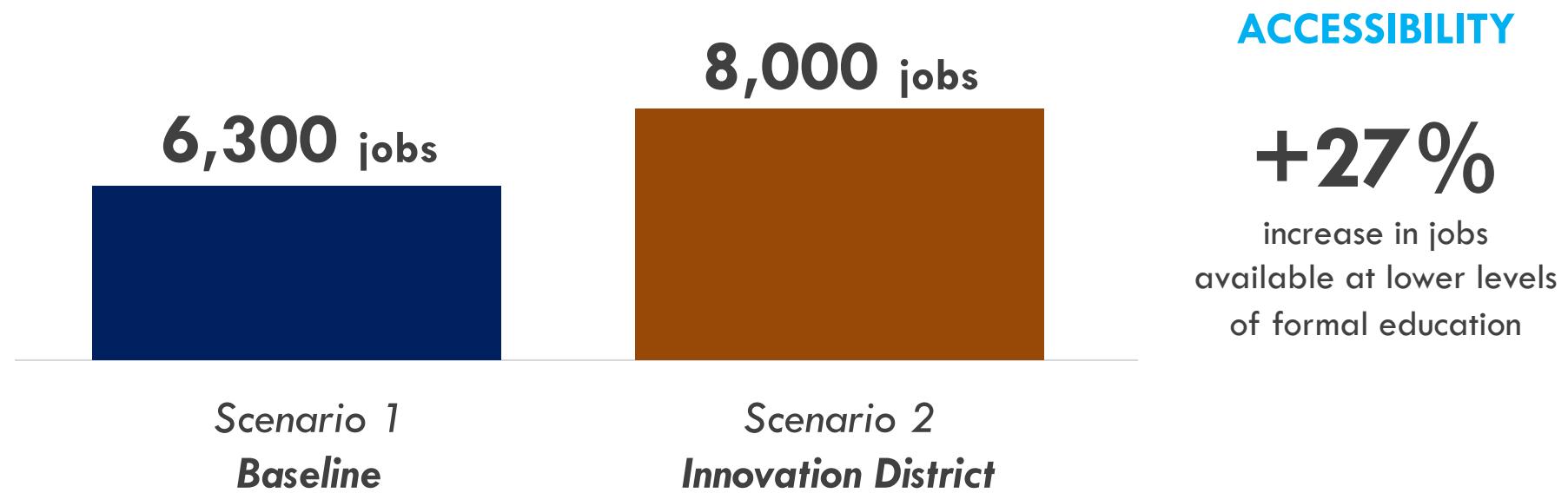
Total Employment in Innovation Industries



As discussed on the previous slide, the overall distribution of employment within the Innovation District also reflects an **intentional shift towards more innovation jobs** within the Technology, Healthcare, and Life Sciences sectors. Based on our projected distribution, these employment opportunities will increase by 1,600 jobs or 134%, significantly expanding employment opportunities for quality, high-paying jobs in this cluster. While the distinctions between these innovation sectors are already beginning to blur, the diversification of Austin's innovation economy across multiple sectors will better position the economy for resilience and help **catalyze a new era of multifaceted growth in the region**.

The Innovation District will increase access to employment opportunities for individuals with lower levels of formal education by 27%.

Total Employment Available with Less than a 4-year Bachelors Degree



In the Technology sector, only 38% of jobs are filled by individuals without a Bachelors degree compared to 64% in Healthcare and 58% in Life Sciences. By fostering new growth in these sectors and at the intersection of these industries, the Innovation District will increase the jobs available for a full spectrum of education levels. Compared to the Baseline Scenario, the Innovation District will create more than **1,700 new jobs available to individuals without a four-year Bachelors degree**, a 27% increase over the Baseline Scenario. This increase in the number of employment opportunities historically filled by individuals without a Bachelors degree will improve access to quality career opportunities for local residents who have lower levels of formal education.

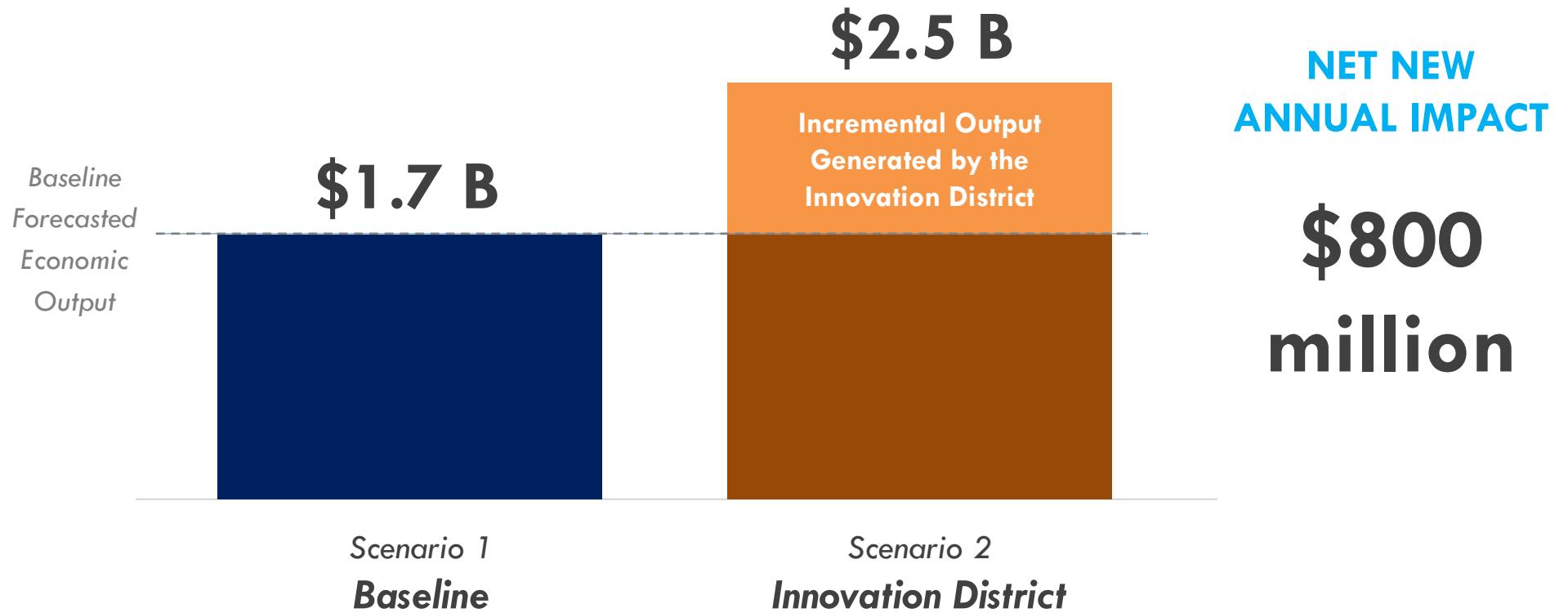
Due to the mix of relatively higher earning jobs, the Innovation District will also increase the average wages paid to individuals with less formal education.

Average Hourly Wage with Less than a four-year Bachelors Degree



The larger share of innovation jobs in the Innovation District will increase the overall average wage available to individuals without a four-year degree. Compared to the overall industry average (\$16), jobs in these innovation sectors pay relatively high wages to individuals without a four-year Bachelors degree (\$21 Technology, \$19 Healthcare, \$18 Life Sciences). With a greater share of jobs concentrated in these higher-wage sectors, the overall average hourly salary for employees without a Bachelors degree is expected to increase from \$17.10 in the Baseline Scenario to \$17.90 in the Innovation District. This translates to an approximate increase in annual salary per worker of \$2,000 a year. These higher wages will improve quality of life for Austin residents and provide living wage opportunities for a broader spectrum of Austin's population.

Overall, HR&A found the Innovation District will create a net new annual economic output of \$800 million, 44% more than the Baseline.

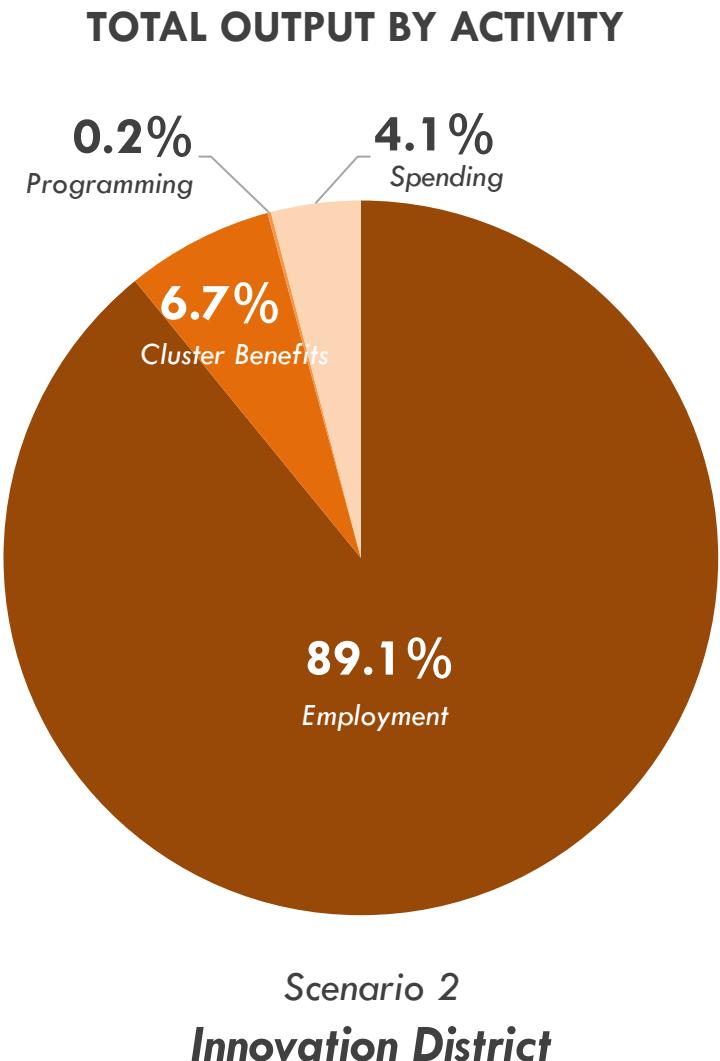


Excluding the impacts of construction, the Baseline Scenario is expected to generate \$1.7 billion in total economic output while the Innovation District by comparison is expected to generate \$2.5 billion in total economic output. In other words, the Innovation District generates 44% more or 1.5x the output compared to the Baseline Scenario. This translates to a net incremental output of \$800 million – **a significant difference for the Travis County economy that clearly indicates the importance of this project for the wider regional community.**

The total economic output created by the Innovation District is driven by four interrelated activities which only collectively can produce the estimated impact.

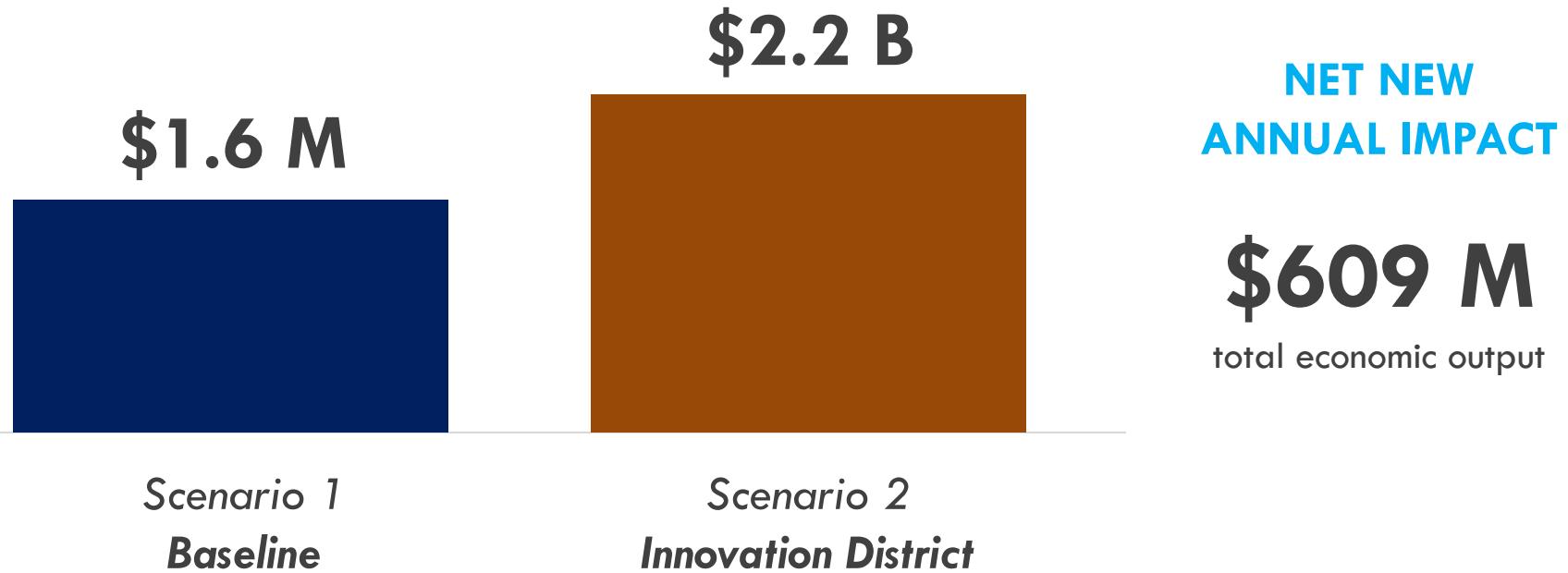
Once the Innovation District is developed and operating at full build-out, it will generate \$2.5 billion in total economic output on an annual basis. This total output is driven by the four activities measured in this analysis: **Employment, Spending, Programming, and Cluster Benefits**. While these activities generate different shares of the total output produced by the Innovation District Scenario, they represent interrelated and interlinked actions which can only accomplish the expected Innovation District Scenario impacts if they occur collectively.

For instance, while programming in and of itself might generate only a small share of the overall output, programming is the key ingredient to successfully attracting tenants and producing the overall employment impacts. Similarly, while resident and tourist spending might only create modest economic output by itself, residents and tourists are essential to creating a vibrant, active, live-work-play atmosphere that will catalyze economic growth and attract new employers to the district. While these activities are discussed separately in the following slides, the estimated impact of the Innovation District depends on the collective implementation of all these activities.



New jobs in the Innovation District will also produce more than \$2.2 billion in economic output, 39% more than the Baseline.

Total Output from Employment



The new employment opportunities created by the office and lab space in each scenario will also generate substantial economic output through the production of goods and services that these industries create. In both scenarios, **the output produced from new jobs constitutes the lions share of each scenario's overall impact** - 89% in the Innovation District Scenario and 93% in the Baseline Scenario. The new jobs in the Innovation District Scenario alone will generate an annual economic output of more than \$2.2 billion compared to \$1.6 billion in the Baseline Scenario. This indicates that the greater number of jobs and mix of employment in the Innovation District Scenario will generate 39% more output than the jobs created in the Baseline Scenario.

Based on the projected development program, the Baseline will likely have more residents and more tourists compared to the Innovation District.

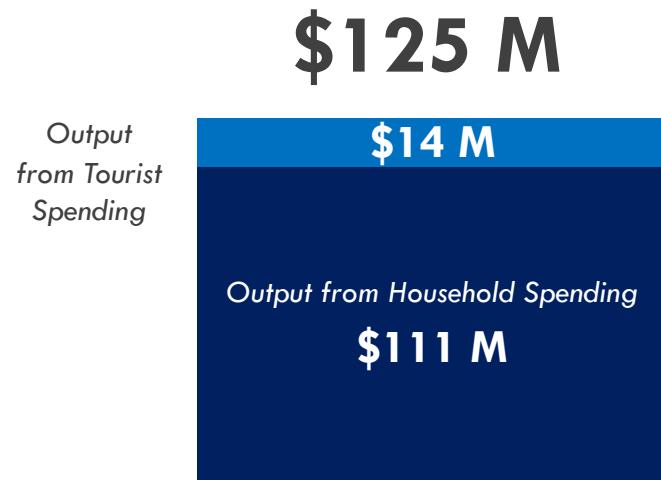
Annual Spending by Residents & Tourists

1,000 households	→	\$117M aggregate income	800 households	→	\$94M aggregate income
105K tourists	→	\$19M annual spending	79K tourists	→	\$14M annual spending
Scenario 1			Scenario 2		
Baseline			Innovation District		

In the Baseline Scenario, the residential and hotel uses comprise approximately 61% of the total development program compared to 46% in the Innovation District Scenario. Assuming both of these uses reach target occupancy levels in each scenario, we estimated there would be **1,000 households (~1,450 residents)** and **105,000 annual tourists in the Baseline** and **800 households (~1,160 residents)** and **79,000 annual tourists in the Innovation District**. For residents, HR&A estimated aggregate income using the current average household income in Downtown. For tourists, HR&A assumed an average length of stay of 1.95 days and continued average visitor spending patterns on transportation, food, shopping, and entertainment. Based on these assumptions, the team then estimated the total annual tourist expenditure in the region for both scenarios. In the Baseline Scenario tourist spending was approximately \$19 million per year and in the Innovation District Scenario this was approximately \$14 million per year.

Combined spending from these groups will generate more economic output in the Baseline Scenario.

Total Output from Spending



Scenario 1
Baseline



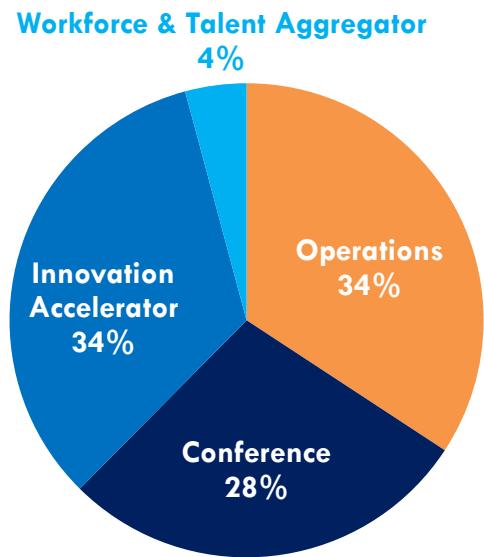
Scenario 2
Innovation District

**NET NEW
ANNUAL IMPACT**
(\$26 M)
total economic output

Due to the smaller population of residents and tourists in the Innovation District Scenario, the total economic output generated by the annual spending of these groups will be less than in the Baseline Scenario. The direct, indirect, and induced impacts of spending by both residents and tourists generated **\$125 million annual economic output in the Baseline** and **\$99 million annual economic output in the Innovation District**. This reflects a 20% difference in economic output produced by this activity in each scenario. However, the overall economic output produced by the Innovation District is still 44% or \$800 million more than the output produced in the Baseline. **In both scenarios, the output produced by resident and tourist spending comprises a small share of the overall impact** (5% in the Baseline and 4% in the Innovation District).

Unlike the Baseline, the Innovation District will include a variety of programs designed to generate tremendous value for tenants, residents, and visitors.

CCI Annual Operation and Programming Spending



\$2.4 M

Annual Spending

UnCharted Conference

UT Dell Med and Capital City Innovation plan to create an event that brings together academic, corporate, community and start-up organizations through an annual conference called “Uncharted”. Topics covered might include patient-orientation, community health, tech product development, and others.

Innovation Accelerator

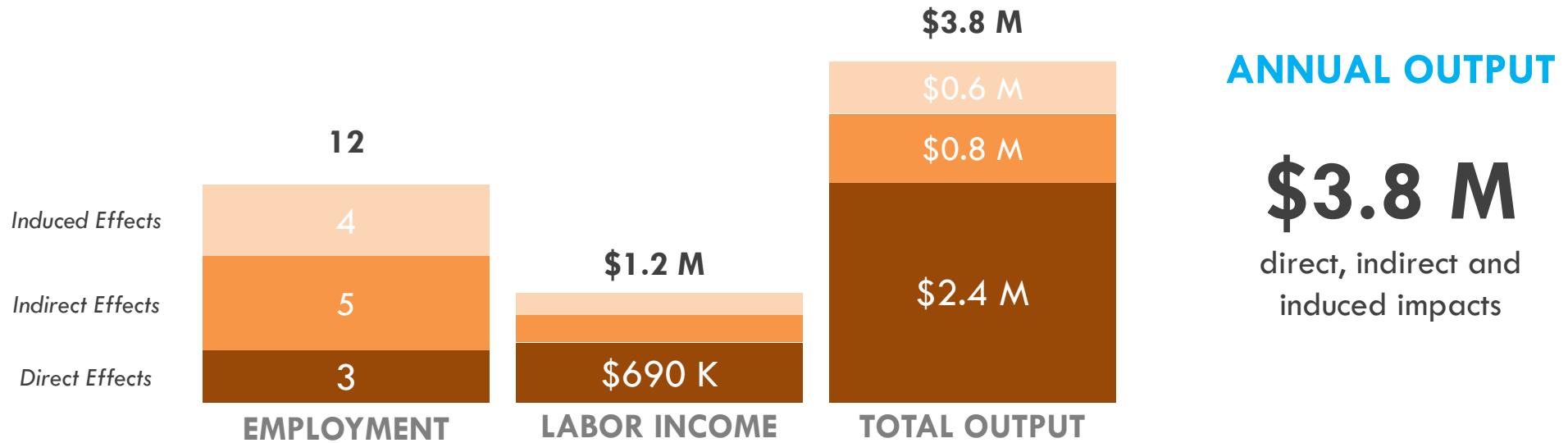
Capital City Innovation plans to use the Innovation Accelerator as a way to direct investments to health-focused, early stage companies. CCI will build on existing Austin accelerator programs, supporting at least 10 projects per year.

Workforce & Talent Aggregator

CCI plans to help scale and connect incoming innovation companies to local workforce development programs. Particularly, CCI will focus on skill development programs, as they are most attractive to corporations looking to secure and build talent in the area.

The total annual output produced by the programming investment planned to-date is approximately \$3.8 million in the Innovation District Scenario.

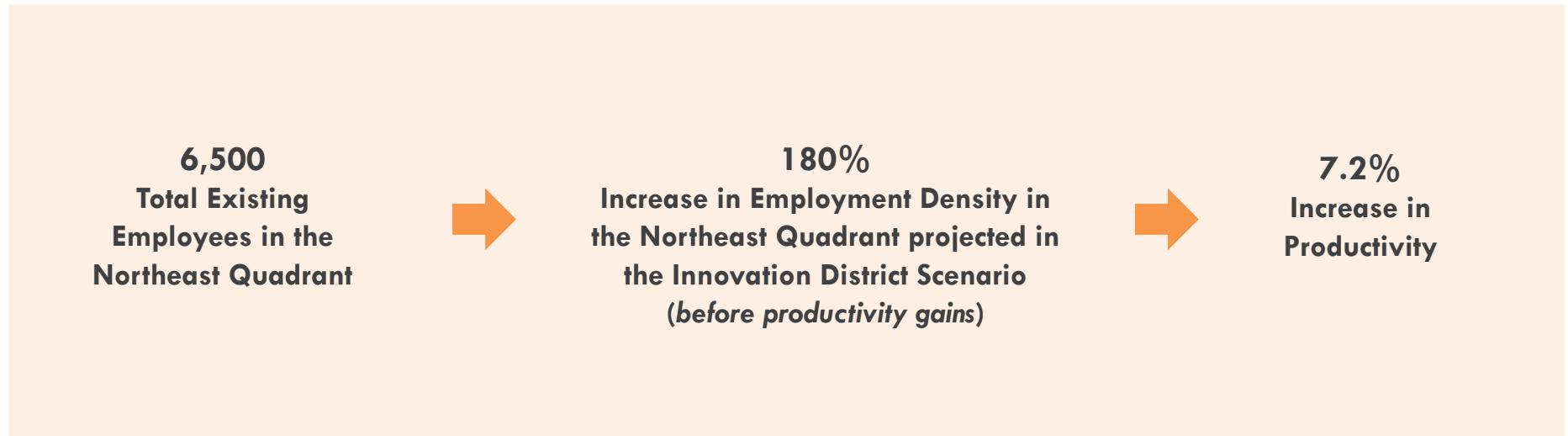
Total Impacts from Programming



Capital City Innovation will play a critical role in the Innovation District and **the impact of its annual operations and preliminary mix of programs is approximately \$4 million**. Since CCI is intentionally limiting their staff to just 3 full-time employees, the direct employment impacts are relatively small but the output this activity produces relative to the cost of programming investment reflects a direct return on investment of 1.6x their initial investment. Taking that a step further, if we assume the investment in programming is the true root cause of the entire district's success and total economic output, then this reflects a return on investment of more than 1,000x. Additionally, as the district becomes more established, **a variety of partner organizations beyond CCI may commit to supporting additional events and programs that would create even larger impacts** than what is estimated here. Not only will these programs help solidify the value proposition of the Innovation District, but they will also continue to create ripple effects throughout the local economy.

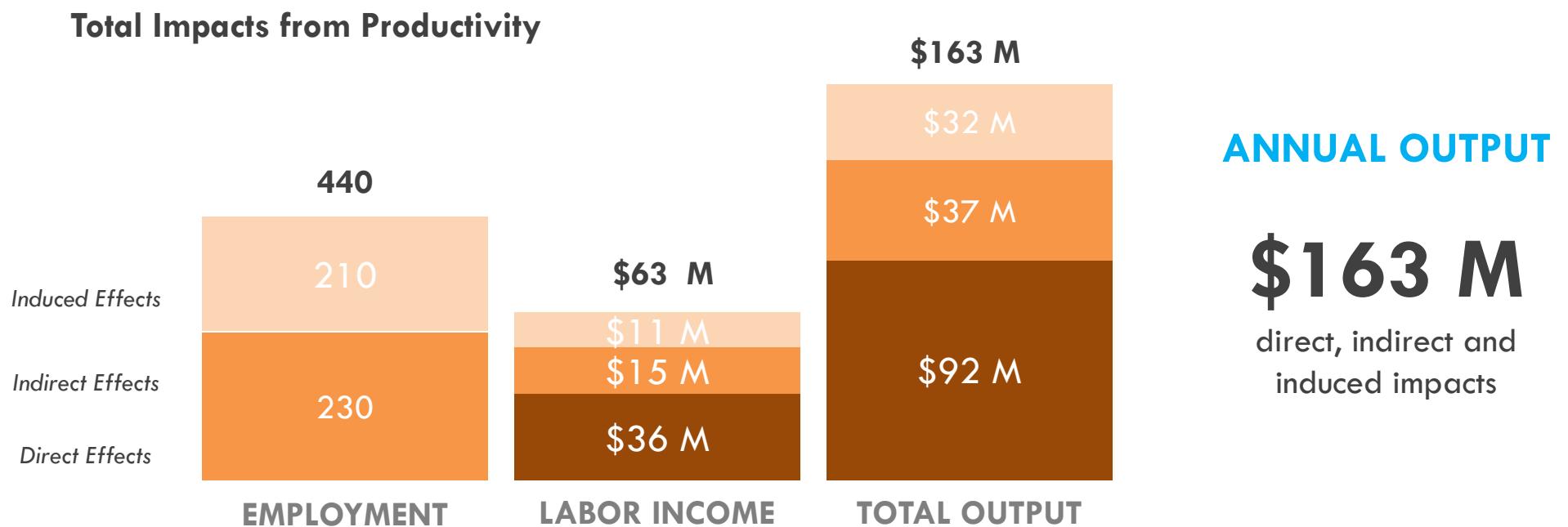
As a result of clustering, we expect the overall productivity of firms in the Innovation District Scenario to increase by approximately 7%.

Innovation District Productivity Gains



The benefits of clusters and the agglomeration economies have been extensively documented in academic literature. One of the many benefits most frequently cited is the productivity benefits generated by urban agglomeration as **close proximity encourages knowledge spillovers and collaboration, which leads to increased productivity for firms and workers**. Denser employment clusters are the locus of the knowledge economy, where increased interactions result in new ideas, products, and technologies that drive productivity gains and economic growth. The creation of a health and life sciences Innovation District would facilitate the development of such an employment cluster where we might expect to realize these productivity gains. A variety of studies have quantified the relationship between agglomeration and productivity, but in their seminal paper “*Productivity and the Density of Economic Activity*” Ciccone and Hall found that **doubling the density of employment in a cluster led to an increase in productivity of approximately 4%**. To simulate that effect here, HR&A assumed a linear relationship between employment density and productivity gains and estimated that with a 180% increase in density expected under the Innovation District Scenario, the Austin Innovation District will experience an increase in productivity of 7.2%.

The increase in productivity will lead to an annual economic output of \$163 million in direct, indirect, and induced impacts in the Innovation District Scenario.



While direct employment will remain constant, the gains in productivity will create ripple effects on indirect and induced employment, labor income, and total output. **More than 400 indirect and induced jobs** will be created by the enhanced productivity of workers in the Innovation District. Additionally, more than **\$63 million in cumulative labor income** and **\$163 million in output** will be gained due to the growth in productivity. This comprises 6.7% of the total economic output produced by the Innovation District Scenario. Without the investment in programming and the coordinated, intentional efforts to foster a true employment cluster oriented around Technology, Healthcare, and Life Sciences, we do not expect the Baseline Scenario to experience the same enhancements to productivity that will occur in the Innovation District Scenario.

The Innovation District will also generate net new fiscal benefits, including an increase in state and local taxes by almost \$12 million annually.

Fiscal Benefits Analysis

INNOVATION DISTRICT	BASELINE	NET NEW VALUE
\$60 M Total Taxes	\$48 M Total Taxes	\$12 M Total Taxes
\$35 M Property Taxes	\$30 M Property Taxes	\$5 M Property Taxes
\$25 M Sales Taxes	\$18 M Sales Taxes	\$7 M Sales Taxes

The Innovation District will create many benefits for the state and local governments— including net new fiscal benefits which are quantified above. Compared to the Baseline Scenario, at full build-out the Innovation District will create almost \$12 million additional state and local taxes, with \$5 million generated from Property Taxes and \$7 million from Sale Taxes. This **represents a 25% increase in taxes collected by state and local governments in Travis County** which can be used to reinvest in the regional community.

ACTION PLAN

To implement the district vision and realize the associated benefits, CCI has developed a strategic roadmap with four primary initiatives.

CCI Roadmap for the Austin Innovation District

1. ENGAGE IN TARGETED BUSINESS DEVELOPMENT

Support the economic development, marketing, and corporate relations efforts of district stakeholders to attract and retain tenants.

2. PROMOTE AND GROW THE PROFILE OF THE DISTRICT

Coordinate a cohesive brand and identity for the coalition and build awareness of the district.

3. IMPLEMENT DISTRICT-WIDE AMENITIES AND PROGRAMS

Develop a roster of programs to activate the district, connect innovators, and build workforce pipelines and capacity.

4. LEAD CIVIC, GOVERNMENT, AND PARTNER ENGAGEMENT

Establish relationships and develop a framework for ongoing collaboration.

Capital City Innovation (CCI), in consultation with its founders, has developed a strategy for the Austin Innovation District that is outlined in their strategic roadmap. The roadmap **articulates the priority initiatives required to advance the district vision, the roles of CCI and its partners, and a preliminary financial plan for supporting a sustainable business model**. The roadmap is based on the creation of a **non-equity joint venture or alliance among a consortium of partners** that represent the academic institutions, civic stakeholders, and property owners in the district who are committed to the common purpose of fostering growth based on inclusive health and opportunity.

In its first two pilot years, CCI has advanced a number of plans and established a framework for ongoing collaboration for each initiative .

CCI Strategic Roadmap

1. ENGAGE IN TARGETED BUSINESS DEVELOPMENT	<ul style="list-style-type: none">Hosted 14 visiting groupsAttended 2 international conferencesEngaged 5 prospective tenants w/ developers; Growing relationships with additional firmsOngoing collaboration w/ the Chamber & the City on data analysis and business marketing
2. PROMOTE AND GROW THE PROFILE OF THE DISTRICT	<ul style="list-style-type: none">Created a suite of digital marketing tools & collateral materialsPublished first Annual Report and secured National League of Cities commitmentPlans to highlight 10 success stories each year and advance thought leadershipInitial discussions around a comprehensive branding exercise to develop a cohesive identity
3. IMPLEMENT DISTRICT- WIDE AMENITIES AND PROGRAMS	<ul style="list-style-type: none">Developed regional Affinity Group w/ 6 incubatorsIdentified initial priorities and estimated capital and operating costs
4. LEAD CIVIC, GOVERNMENT, AND PARTNER ENGAGEMENT	<ul style="list-style-type: none">Hosted regular consortium and CCI Board meetings and preliminary discussion around a charterFormed regional Affinity Group w/ 6 local incubators and partnered w/ existing organizations on 25+ eventsEngaged in planning efforts for district propertiesPlans to develop economic and social-impact metrics and monitor ongoing progress

In its first two years of pilot operations, CCI has leveraged the work produced by various past planning groups to advance a variety of significant efforts across each of these initiatives. These efforts are at various stages of implementation. One of the most notable achievements to-date is the establishment of both formal and informal collaboration mechanisms and information-sharing channels which have created a crucial foundation for fostering continued collaboration in the future.

To build on the work that CCI has completed, and collectively continue to advance the district vision, HR&A has outlined a three-pronged action plan.

Action Plan

**Formalize
Relationships**

**Physical
Framework**

**Programs &
Evaluation
Metrics**

To advance immediate next steps and establish a framework for long-term sustainable collaboration and engagement, the strategic action plan includes outlines three primary components: **formalize relationships** – build on the informal structures that have been established to-date to formalize relationships between partners and identify capacity and responsibilities for key initiatives, develop a **physical framework** – in a collaborative process with the consortium members that outlines the physical objectives and priorities for the innovation district, and create **programs and evaluation metrics** – activation, innovation, and workforce development programs that will foster a successful innovation district and metrics for monitoring ongoing alignment between district progress and marketing, economic, and social impact goals.

To facilitate seamless engagement among the stakeholders as district plans advance, the district should formalize existing relationships.

Formalize Relationships

Adopt official governance, operational, and funding agreements.



CCI should advance discussions to adopt an official charter among consortium members and enact any other formal arrangements required to ensure informal collaborations continue into perpetuity.

Develop targeted working groups.



CCI should organize cross-institutional working groups around key initiatives like programming that are staffed with the necessary experts and decision-makers for each topic area.

Dedicate capacity to key initiatives.



CCI should secure dedicated capacity for key initiatives. To supplement these resources, they can also work with partners to identify available capacity within organizations that can provide formal allocations of staff time.

Solidify communication channels.



CCI should develop formal reporting structures, meeting schedules, and a designated point of contact for working groups.

While there has been considerable informal collaboration among existing stakeholders, **much of this coordination has been through informal channels**. The district needs to define the relationships CCI has cultivated with key partners and consortium members and **create the governance structure needed to support ongoing operations**. This structure will also be equipped with the necessary authority and funding to act on that authority. To move forward, stakeholders need to organize dedicated capacity for each of the key initiatives and there needs to be clear assignments for core responsibilities and milestones.

To translate the vision of the Innovation District into reality and rally consortium members to action, it is essential to develop a physical framework for the district.

Physical Framework

Secure commitment(s) for an initial location for Phase I development.

CCI should advance discussions with property owners who control sizable portions of land within the district. Phase I targets and public land should be the top priority and CCI should sign MOUs with committed property owners.

Initiate a collaborative process to develop a physical framework.

In partnership with a physical planning partner, CCI should lead a collaborative process to develop a framework to guide development that includes all consortium members and relevant property owners.

Outline clear objectives for desired physical development.

Building on the analysis conducted in this study, the framework should articulate the overall program mix and density, desired typologies, target activity nodes, and desired community benefits.

Inventory available incentives, resources, 380 agreements, and other tools.

The framework should catalogue the suite of tools and resources that can support development of desired resources and district objectives.

Outline infrastructure, zoning, and other regulatory needs.

The framework should identify priority infrastructure needs, zoning changes (PUD rezoning for the Brackenridge site), and other needs that require public action to implement.

A physical framework is a **tool that will be used to guide both internal and external district partners**. For internal partners, the framework will help **unite various stakeholders** behind a shared plan and for external partners will serve as a **toolkit for guiding physical development projects** within the district. CCI should engage a physical planning partner to build on this analysis and assist with developing a detailed physical framework.

To foster a successful and sustainable district, it is critical to implement a compelling program mix and develop evaluation metrics for monitoring progress.

Programs & Evaluation Metrics

Develop activation, innovation, and workforce development programs.

CCI should work with partners to foster a suite of diverse programs that create a vibrant, amenity-rich environment, connect innovators and entrepreneurs, and build capacity in the current and future talent pipeline.

Identify priority reporting areas and outline performance metrics.

CCI should work with partners to identify priority areas that will define success for the Innovation District, identify specific metrics, and outline the collection point, the data source, and the reporting format.

Establish reporting process and responsible party.

CCI should identify the entity responsible for each metric(s), a timeline for monitoring and collection, and a structure for delivering and sharing results to the party responsible for overseeing metrics consolidation.

Conduct ongoing analysis and adapt/ refine metrics..

CCI should develop a schedule for monitoring metrics and analyzing implications for each priority area. Periodically metrics should be evaluated for effectiveness and/or adapted to reflect district priorities

Programs are a crucial element to the success of aspirational innovation districts around the country. Having a **healthy mix of programs is key to creating the value proposition** that translates to real estate premiums. Evaluation metrics are also essential to tracking progress towards a desired goal and **fostering a shared understanding of key accomplishments and areas of need**. A formal evaluation system will also help institutionalize knowledge sharing and aggregate key indicators across a variety of fragmented data sources and district stakeholders.

CCI should work with partners to advance the strategic action plan for the district.

Short-term 0 to 1 year	Medium-term 1 to 2 years	Long-term 2+ years
<ul style="list-style-type: none">• CCI will advance discussions on commitments to an official charter• CCI will develop and secure formal contracts or other alternative agreements to oversee relationships between partners• CCI will organize additional supporting advisory arrangements (working groups) and designate reporting structures for each• CCI will conduct an analysis of capacity needs and existing resources across partner organizations to outline a plan for required dedicated resources and supplemental resource sharing• CCI will advance discussions on programming funding commitments• CCI will create an aggregated programming calendar to highlight partner-led programs and begin district-wide marketing	<ul style="list-style-type: none">• CCI will work with partners to secure commitment for Phase I of the Innovation District• CCI will leverage the findings of this analysis to outline a physical framework for the Innovation District• CCI (and property owners) will engage a physical planning partner and secure commitment for development of Phase I• CCI will continue to market district-wide programming• A working group will develop a strategic programming plan that builds on CCI's initial priority list	<ul style="list-style-type: none">• CCI will monitor development progress of Phase I and work with partners and property owners to streamline processes• CCI will develop performance metrics for ongoing evaluation• CCI will continue to monitor results and adapt metrics as needed• CCI will continue to market district-wide programming• CCI will develop metrics to monitor programming reach and community impacts• CCI will work with programming partners to adapt programming based on community feedback and district priorities