



CBRE RESEARCH

THE TEXAS TRIANGLE OFFICE MARKETS

60 Degrees of Separation

SEPTEMBER 2016

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60 Degrees of Separation

In Texas, six degrees of separation is really 60 -- not just because everything is bigger here, but because the physical locations of Dallas/Fort Worth, Houston and Austin form a triangle.

Despite their geographic proximity, though, their office markets couldn't be more different.



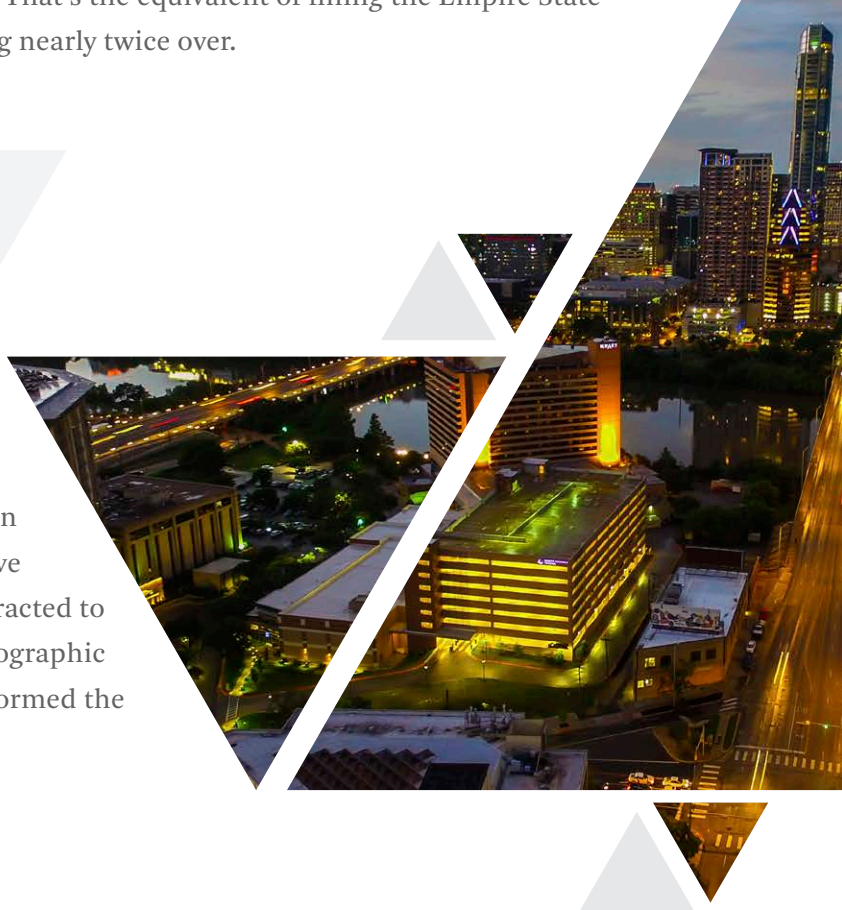


DALLAS TAKES OFF

Dallas/Fort Worth is the largest office market in the state and the most diverse. Ranked first in the country for job growth over the past year, Dallas had record-smashing absorption in 2015 totaling 5.2 million sq. ft. That's the equivalent of filling the Empire State Building nearly twice over.

AUSTIN GETS TECHNICAL

Austin is a major player in the tech world. Last year alone, 80% of the 119 relocations to or expansions in Austin came from the tech industry, driving explosive growth in the co-working sector. Companies are attracted to Austin's young, socially-centric and tech-savvy demographic that has ignited an office building boom and transformed the Texas capital into an 18-hour city.



SPACE CITY

Houston's nickname has taken on new meaning. Its 210 million-sq.-ft. office market is largely supported by energy-related tenants and is vulnerable to changes in commodity prices. Following the crude oil price downturn, sublease offerings have soared, thrusting office space availability up to 19.8%—a level not seen since the mid-1990s—and stopping in its tracks a five-year consecutive streak of ferocious demand.



60°
OF SEPARATION

DALLAS/FW, TX
222,016,684 SF
OFFICE INVENTORY

DALLAS/FW OFFICE MARKET
46%

MAJOR OFFICE DRIVERS

FINANCE,
PROFESSIONAL &
BUSINESS SERVICES



HOUSTON, TX
210,142,623 SF
OFFICE INVENTORY

HOUSTON OFFICE MARKET
44%

MAJOR OFFICE DRIVERS

ENERGY & LEGAL



AUSTIN, TX
45,960,286 SF
OFFICE INVENTORY

AUSTIN OFFICE MARKET
10%

MAJOR OFFICE DRIVERS

TECHNOLOGY &
GOVERNMENT



Source: CBRE Research, Q2 2016.



THE TEXAS TRIANGLE OFFICE MARKETS

60 Degrees of Separation

Texas has achieved almost legendary status as an engine of economic growth, and has one of the country's most recognizable state cultures where everything is BIG. Its commercial office sector is no different. The Texas Triangle office market—comprised of Houston, Dallas/Fort Worth and Austin—totals nearly a half billion sq. ft. Yet the inventory cycles within Texas' signature city skylines are vastly different, driven by a wide and diverse set of influences. A wave of corporate headquarter relocations is creating Texas-sized demand in the DFW Metroplex. In Austin, high-tech job growth is transforming the Texas capital into a metro with a vibrant 18-hour city core. And in Houston, a saturated construction pipeline has overlapped with a precipitous oil glut, leading to an office market currently facing some Texas-tough challenges. Clearly, Texas' metro office markets function

independently of one another despite being equally important constituents of a \$1.7 trillion state economy. To appreciate its economic scale, consider that if Texas were a sovereign country, it would rank as the 10th largest economy in the world, ahead of both Italy and Brazil.

“If Texas were a sovereign country, it would rank as the 10th largest economy in the world.”

In this report, CBRE Research explains how these three Lone Star office markets move within 60 degrees of separation to form a distinct 180-degree geographic triangle that is as varied and large as the state of Texas itself.



LONE STAR RISING:

DEMOGRAPHICS ALIGN, EMPLOYMENT TRENDS DIVERGE

Texas continually attracts corporate relocations to its major metros due to the state's stable business climate, relatively low taxes, ease of access, skilled workforce and steady pro-business public policy environment. With over 500 non-stop domestic and international flights in the three markets combined, office occupiers have access to the global connectivity they need. The result has been a history of healthy office demand, population gains and surging single-family home sales in record volume for all of the major Texas metros.

The state can be further defined in terms of the Texas Triangle, a region comprising the major state metros of Dallas/Fort Worth, Houston and Austin that together form a geographic triangle.

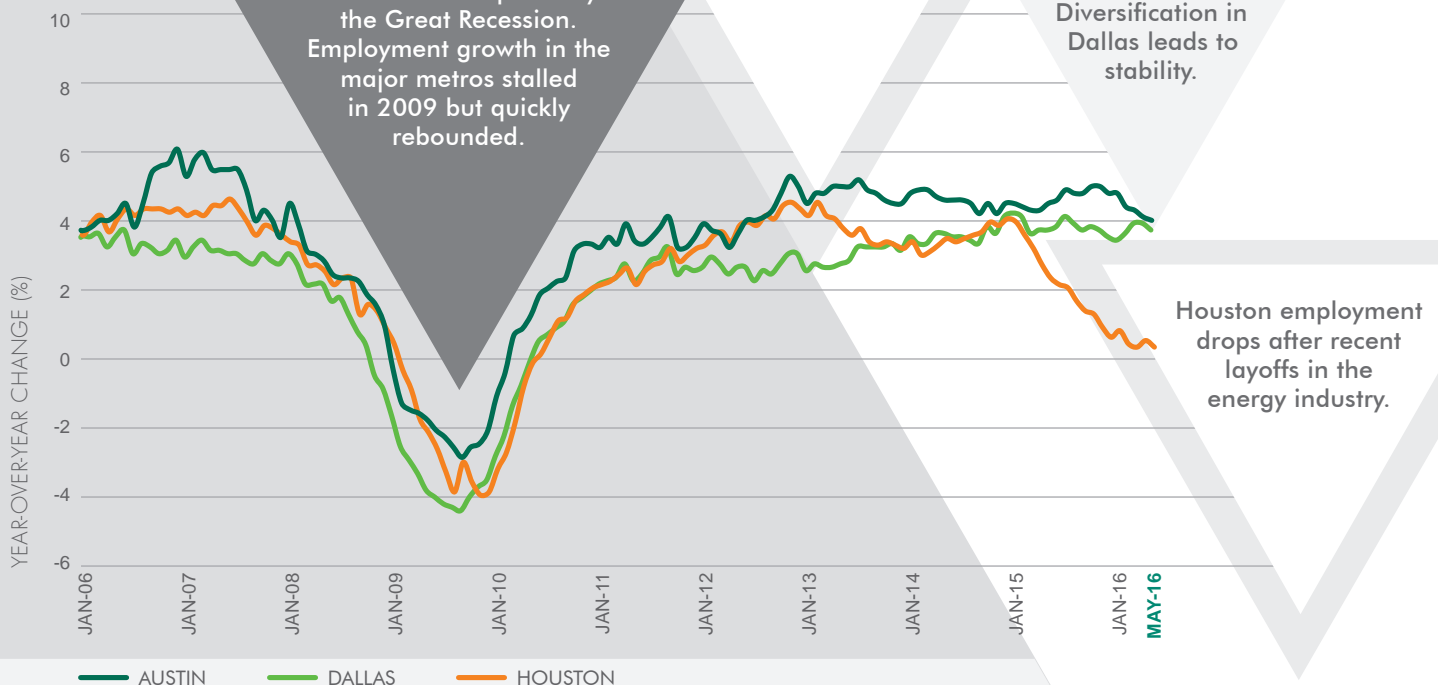
FIGURE 1: JOB GROWTH

Employment growth in the major Texas metros follows national employment trends. Technology keeps Austin's employment growth elevated.

Texas was not spared by the Great Recession. Employment growth in the major metros stalled in 2009 but quickly rebounded.

Diversification in Dallas leads to stability.

Houston employment drops after recent layoffs in the energy industry.



Source: Bureau of Labor Statistics, May 2016. Note: Data are not seasonally adjusted.



The region is forecast to grow to 31 million people by 2045, with 412,000 new residents added in the past year alone. Lone Star State population gains are driven primarily by metros alive with job growth and economic opportunity.

TOTAL EMPLOYMENT GROWTH

Employment growth in Dallas/Fort Worth far outpaces all other metro areas in Texas. Nationwide, Dallas/Fort Worth consistently reports the third-highest year-over-year job growth (most recently with 120,800 new payrolls year-over-year in May 2016), behind only Los Angeles and New York. Additionally, Big D has the 74th-lowest unemployment rate (3.7% in May 2016) out of the 427 U.S. metropolitan statistical areas ranked by the U.S. Bureau of Labor Statistics.

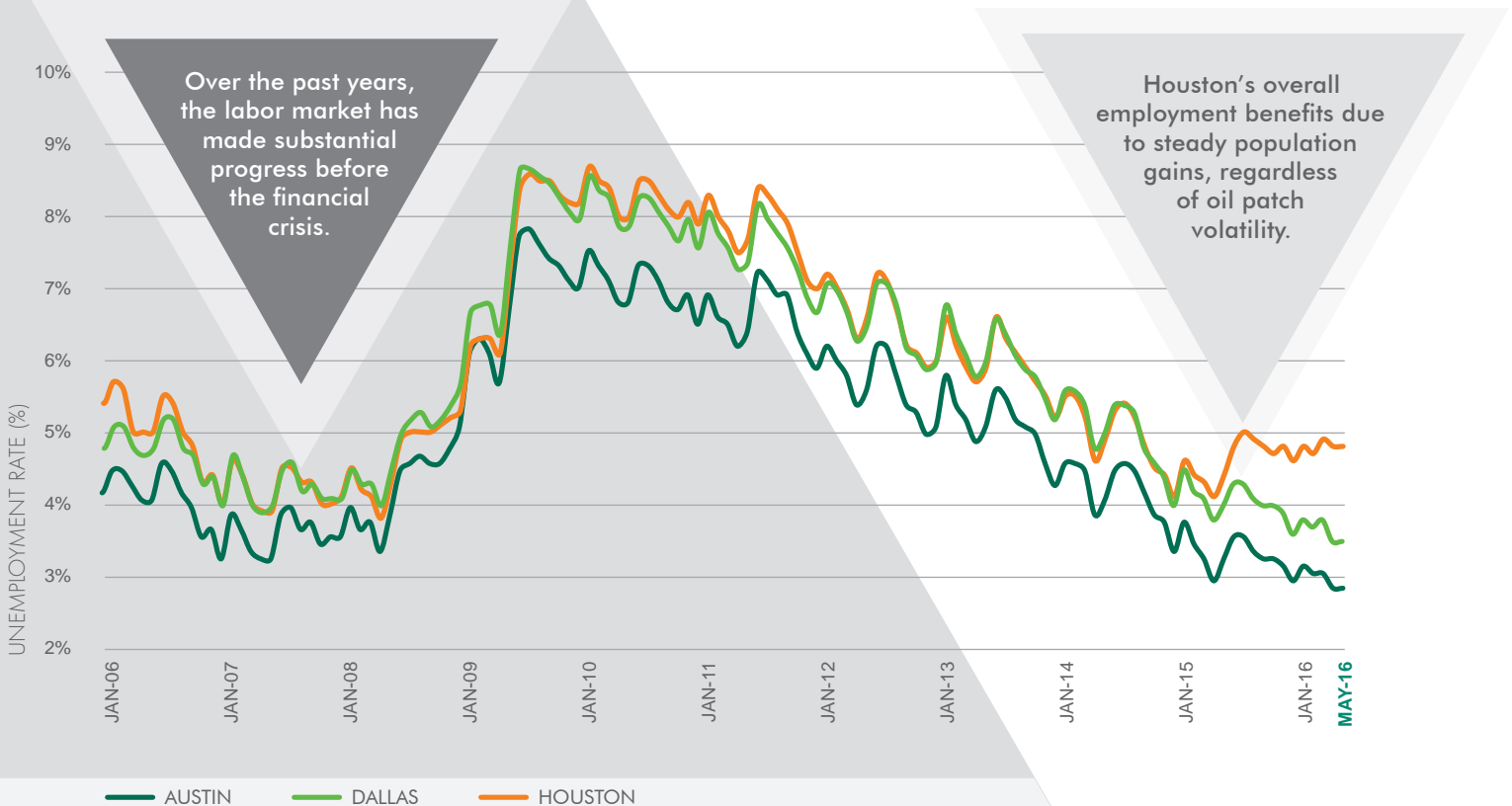
Austin is another Texas jobs churning machine, where an unemployment rate of 2.9% is among the lowest in the country and well below its 7.8% rate at the height of the last recession. Tech and services employers here have a limited supply of prospective software developers, applications specialists and computer systems analysts, creating a dynamic where jobs seem to be chasing people.



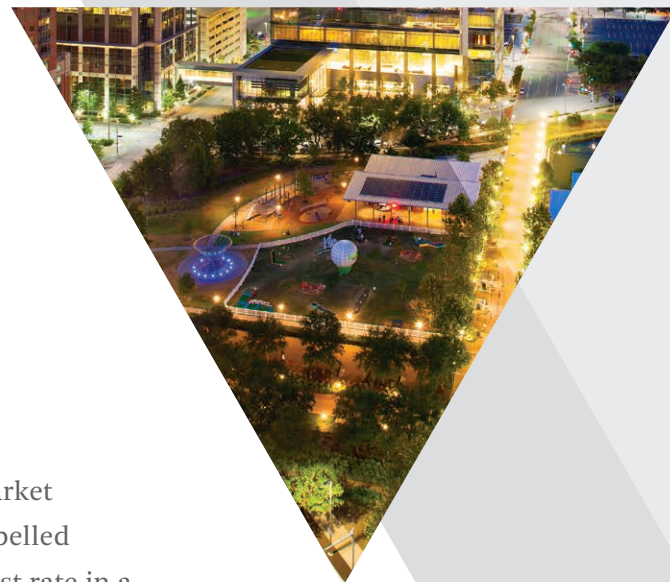
While employment growth in Houston has substantially slowed in the past year, job cutbacks are relatively contained to the oil exploration and production (E&P) sector, oil field services and oil field equipment manufacturing. However, the losses in these areas have been partially offset by job gains in retail and the city's burgeoning healthcare sector, boosted by the rapid population growth of the post-Great Recession period.

Because of their dissimilar economic bases with varying industry drivers and job creation rates, Texas' major office markets tend to operate on distinctly different office space inventory planes. As the last major metro in the U.S. to enter the Great Recession and one of the first to emerge, Houston, for example, had a head start on every other major office market in the country.

FIGURE 2: TEXAS UNEMPLOYMENT



Source: Bureau of Labor Statistics, May 2016. Note: Data are not seasonally adjusted.

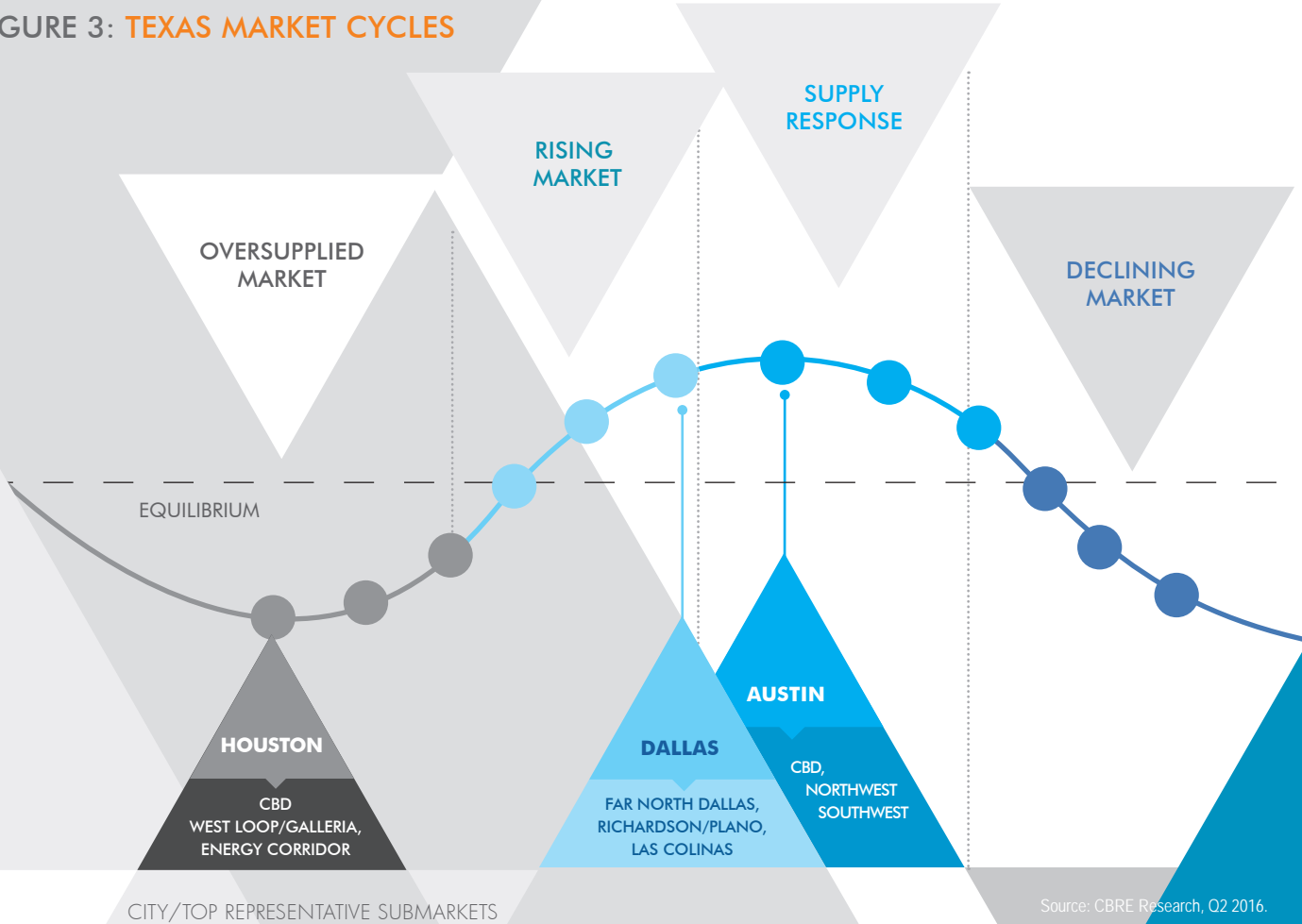


Together with the post-recession commodity boom, the office market saw record-breaking absorption and low vacancy ignite what would become a Texas-hot development cycle totaling more than 27 million sq. ft. since 2010. Falling oil prices recently pushed Houston out of an expansion cycle just as Dallas was gaining momentum as a magnet for corporate relocations by the likes of Toyota, Liberty Mutual, Sunoco and Jamba Juice. Meanwhile, Austin's office market has been robustly expanding with occupier demand largely propelled by technology companies. Office vacancy in Austin is at its lowest rate in a generation, while sublease availability is currently less than 1% of the total office market. Austin's office market witnessed a record year in 2015 by filling more than 2 million sq. ft. of space.

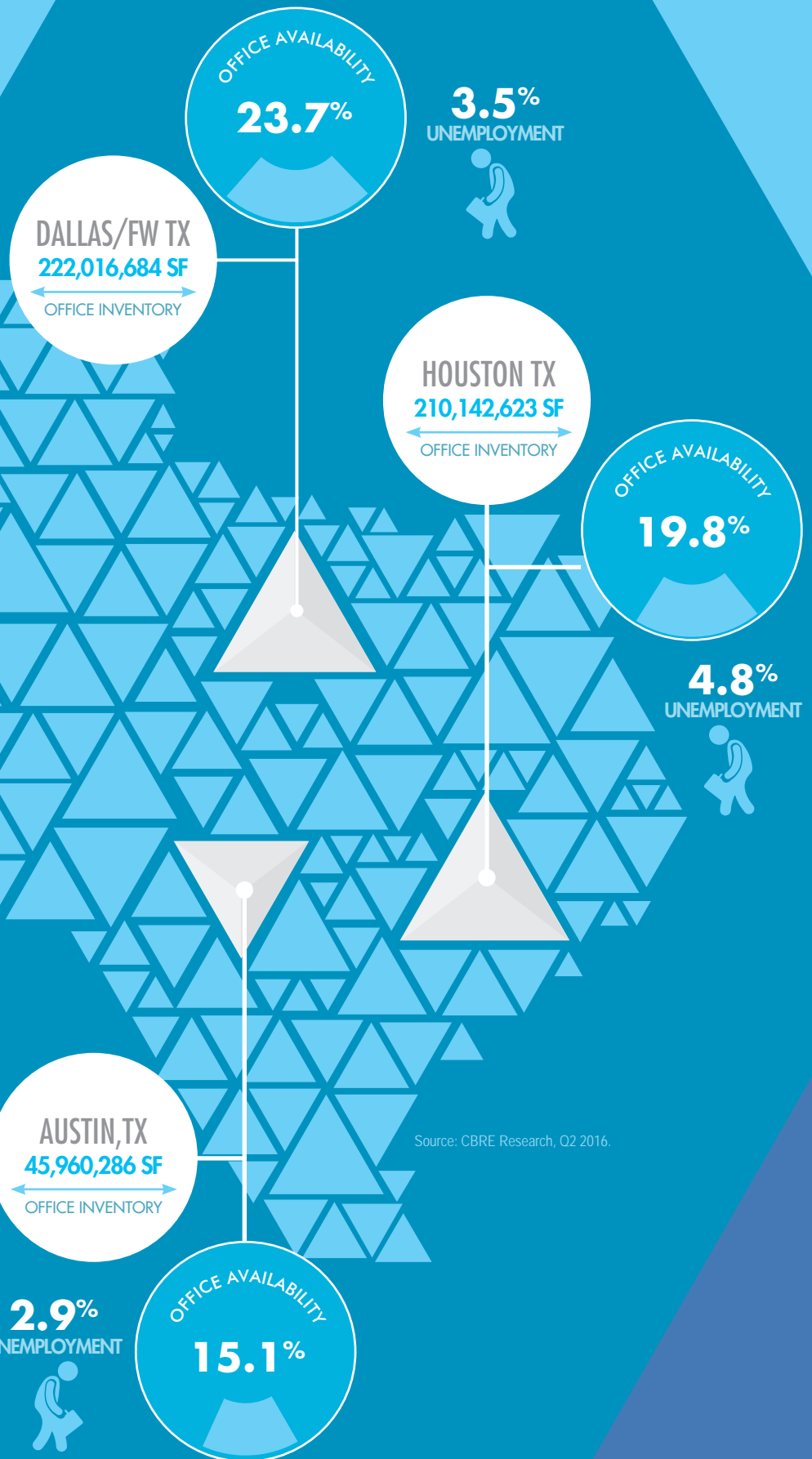


When it comes to analyzing office space demand, the Texas markets are energized by three very different machines. To put it simply, oil in Houston and technology in Austin are very different, signature industries fueling a majority of tenant demand. On the other hand, the DFW Metroplex is more diversified and follows a real estate cycle more aligned with U.S. trends and overall American corporate fiscal performance.

FIGURE 3: TEXAS MARKET CYCLES



60°
OF SEPARATION





DRAWN TO DALLAS: A CORPORATE RELOCATION MAGNET

When companies look to relocate, the Dallas/Fort Worth metro is frequently on the list of options. Blue-ribbon corporate relocations are the main demand driver in the Dallas/Fort Worth office market, resulting in diverse and relatively stable demand for space. To a degree, the city is insulated, due to its diverse economy and mature employment base, from some of the fluctuations affecting Houston and Austin during energy or tech booms and busts. Generally, the Dallas/Fort Worth economy is more affected by U.S. economic cycles than by any single employment sector or industry category.

From an industry perspective, financial services, manufacturing and professional and business services were the top sectors for corporate expansions and relocations in the office market from 2008 to 2014. During this period, Dallas/Fort Worth attracted

approximately 68 companies from California alone—the most notable being Toyota, which brought more than 3,000 jobs and made a \$350 million capital investment. In 2015, three of the top 20 relocations in the state were to the Dallas/Fort Worth Metroplex. Recent expansions by Liberty Mutual, Raytheon and Geico accounted for 8,200 jobs and 1.5 million sq. ft. of office space.

“Dallas/Fort Worth attracted approximately 68 companies from California alone.”

This corporate activity has fueled 24 consecutive months of positive net absorption, breaking an annual record in 2015 by posting 5.2 million sq. ft. of net new demand as several large corporate build-to-suits were completed and tenants took occupancy.





LIKE A FIREWORK: HOUSTON'S FICKLE ENERGY KING

As the energy capital of the world, Houston and its office market are sensitive to the volatile energy industry, particularly the global price of crude oil. More than 4,800 energy companies are located in Houston, accounting for 10% of the metro area's total employment. In addition, this industry impacts the expansion or contraction of many others supporting it, such as legal, financial, and professional and business services. Indeed, Houstonians often measure their resilience by the number of oil downturns they've survived. Because the office market is heavily dependent on energy-related tenants, it is characterized by acute cyclical swings in space availability.

The most recent boom from 2010 to 2014 created more than 500,000 jobs—more than triple the 156,000 jobs lost during the Great Recession. As growth in energy companies rippled throughout Houston, the Class A office vacancy rate dropped below 10%, driving development in such signature submarkets as the Energy Corridor of West Houston, the CBD and The Woodlands on the north side. Looking for ways to recruit and retain employees, many large oil and gas companies chose new development in order to consolidate employees into a single location, while also carving out more space to accommodate for future growth. Record-high commodity prices drove office space demand in excess of Houston's available

supply, and rapidly rising rents caused many energy companies to secure space before rents rose even further and options quickly diminished.

During Houston's high-growth period from 2012 to 2014, the energy industry accounted for 52% of Houston's office leasing activity. Since 2015, energy saw its share slump to 26.8%, indicative of the sector's demand decline. Likewise, prior to the drop in crude oil prices, overall office vacancy was 12% and sublease space totaled 3.8 million sq. ft. Shortly after crude oil prices began their dramatic drop, office vacancy began increasing at a steady clip while sublease soared to a record high each quarter. And it continues to escalate, with the vacancy rate reaching a five-year high of 15% in Q2 2016. Historic sublease levels totaling more than 10 million sq. ft. pushed the availability rate to a 20-year high of 19.8% in Q2 2016, and it will likely spill over the 20% watermark by the end of Q3 2016. More than 1 million sq. ft. of office space is leased to energy

companies that filed for bankruptcy protection this year alone, and a portion of this office space will likely become available as some of these companies restructure and rightsize to a new office footprint.

“Looking for ways to recruit and retain employees, many large energy companies chose new development in order to consolidate into a single location, while also carving out more space to accommodate future growth.”

Nearly 1 million sq. feet of additional sublease space is expected to hit the market during Q3 2016, which could further inflate space availability past 21% by 2017.



VENTURE CAPITAL:

TECH BEHIND AUSTIN'S STEERING WHEEL

As the Texas capital and home to the state's flagship University of Texas, Austin has an economy historically centered on government activities. But in the 1960s, the first sprouts of the tech economy in Austin began to grow, and the dot-com era of the late 1990s solidified the city as one of America's leading tech markets. These three economic pillars—tech, government and education—now power the Greater Austin economy and its steadily expanding office market.

Area employers have a limited pool of talented software developers, applications specialists and computer systems analysts, creating a very tight labor market attractive for job seekers. The relatively high-paying positions in office-using industries, particularly in the tech sector, attract skilled workers from throughout the state and beyond. As the tech labor force grows, more and more companies are following the highly concentrated talent pool and recognizing the value of having operations in Austin. Major players in the tech sector continue to relocate and expand their presence here: Of the 119 relocations or expansions documented since 2015, 80% were in the tech industry (software, life sciences, e-commerce and data analytics sectors), with five of these relocating companies on the Fortune 500 list.





Many of these expansions are by blue-chip, large-cap companies such as Home Depot, General Motors, Oracle and Office Depot. And though many of them are not tech companies per se, they all have high-tech needs that Austin can readily meet. Even with a rapid influx of workers, the Austin labor market remains tight. As of June 2016, unemployment in the Texas capital is just 2.9%.

Beyond computer software and hardware design, life sciences are quickly becoming a larger piece of Austin's knowledge industry community. Currently, life sciences occupiers are primarily clustered in North Austin along the Research Boulevard corridor and near the stretch of U.S. highways 290 and 71 in South Austin. These firms occupy multiple types of commercial space from light industrial manufacturing to flex and traditional office space.

This new demand resulted in nearly 2.1 million sq. ft. of office absorption in Austin last year, and this momentum has carried over into 2016, with more than 740,000 sq. ft. of net absorption recorded by midyear. It is unlikely that this pace of absorption can be sustained indefinitely.

And looking forward, this expansion still has time to run judging by the size requirements of tenants currently in the market. In addition, qualitative differences set the current cycle apart from the tech bubble of the early-2000s. Unlike that boom and subsequent bust, Austin's current crop of startups have robust business plans with realistic targets for revenue growth and profitability, and for the most part, are not floated by unsustainable levels of venture capital.

“

Beyond computer software and hardware design, life sciences are quickly becoming a larger piece of Austin's knowledge industry community. ”

Today Austin is powered by an increasingly diversified tech base and serves as a hub for businesses with income streams beyond the tech sector itself, making the Texas capital well-positioned to capitalize on growth in the tech, life sciences, and knowledge-intensive industries going forward.

TEXAS TWISTER:

CYCLE(LONE)S IN NEW CONSTRUCTION AND SPACE AVAILABILITY

Dallas/Fort Worth is in the midst of an office construction boom due to demand ignited by corporate relocation activity. Dallas developers can justify new construction even when vacancy is in the upper teens because the local market equilibrium for the office sector is historically higher given overall structural vacancy throughout the Metroplex. For instance, construction projects currently total more than 7 million sq. ft. and the pre-lease rate for all combined speculative projects as of mid-year is 38%. Many projects in this newest wave of construction have been built on “Main and Main” sites and are more likely to lease quickly. The majority of this new development is taking place

in the Far North Dallas submarket, including the West Plano/Legacy area where several significant corporate campus projects, such as the 2.1 million-sq.-ft. Toyota headquarters, are currently underway.

“Construction activity totals more than 7 million sq. ft., with much of it taking place in the Far North Dallas submarket.”

Large corporate campus developments, particularly those within the 1 million-sq.-ft. Legacy West in Plano and 1 million-sq.-ft. CityLine in Richardson, have spurred surrounding development of other property types in order





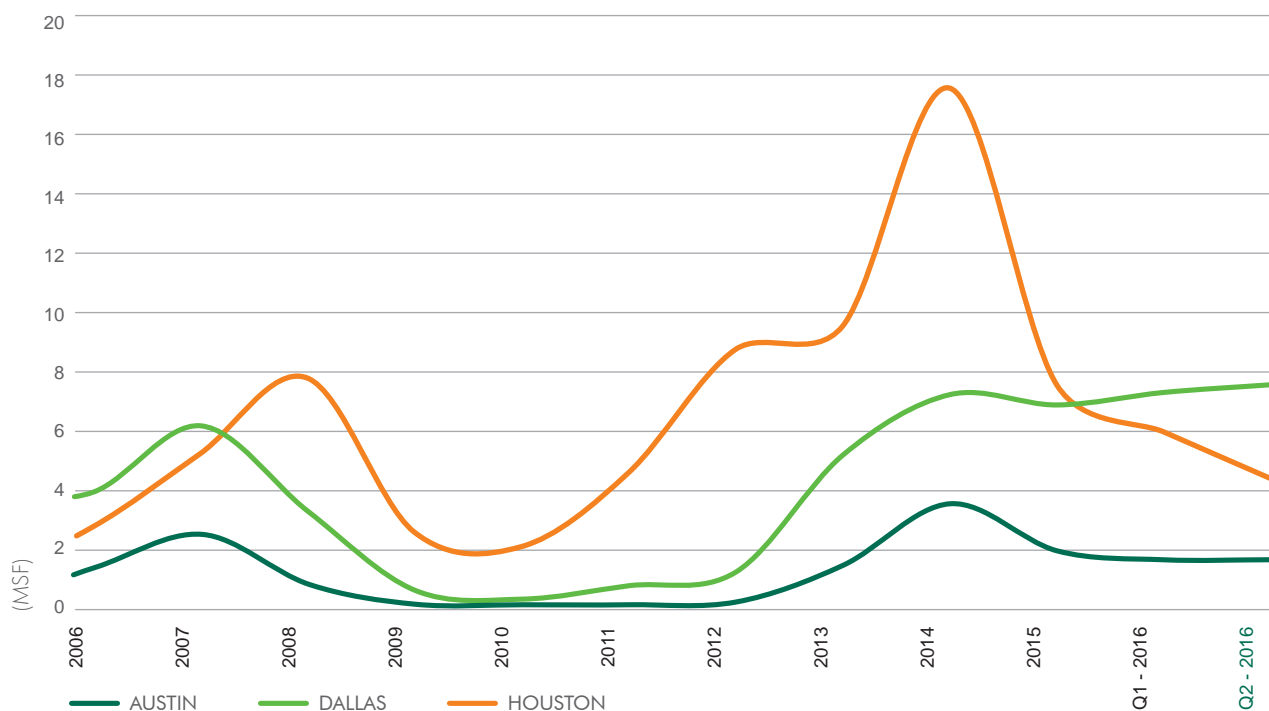
to accommodate and enhance the live/work/play functionality of these growing areas. Other significant mixed-use projects under development include The Union, an 800,000-sq.-ft. high-rise in Uptown; the vast 1,000-acre Cypress Waters master-planned development in Las Colinas; and Frisco's \$2 billion Wade Park positioned along the "\$5 Billion Mile" —a name coined to describe a stretch of the Dallas North Tollway characterized by dynamic investment and development activity.

Meanwhile, Houston is on the tail end of delivering its current cycle's new office product. Responding to aggressive leasing decisions by energy tenants in the early stages of Houston's present leasing cycle, developers added more than 26 million sq. ft. of office inventory since 2010.

This is equal to six times the square footage of Chicago's 110-floor Willis Tower and has produced a significant product overhang in the near term.

FIGURE 4: METRO CONSTRUCTION PIPELINE

CITY	TOTAL DELIVERIES 2010 - 2016 (\$F)	UNDER CONSTRUCTION (\$F)	TOP DEVELOPMENT SUBMARKETS
AUSTIN	3,774,771	1,590,601	CBD, Northwest, East
DALLAS/FORT WORTH	12,970,369	7,495,842	Far North Dallas, Uptown/Turtle Creek, Las Colinas
HOUSTON	25,791,778	4,233,363	Energy Corridor, North, The Woodlands



Source: CBRE Research, Q2 2016.

The City of Houston is developer-friendly with weak zoning risk, yet, even in office-dense suburban submarkets where zoning is a marked consideration (Sugar Land, The Woodlands and Katy are some examples), office development was active throughout the cycle. While it may appear that the Houston office market has overbuilt, past construction cycles have

increased office inventory by more than 60%. In contrast, this current inventory cycle produced only a 15% rate of overall growth.

For analysis of development activity in Austin, please see CBRE's May 2016 Viewpoint report entitled "[Austin, Tech and 18 Hours.](#)"

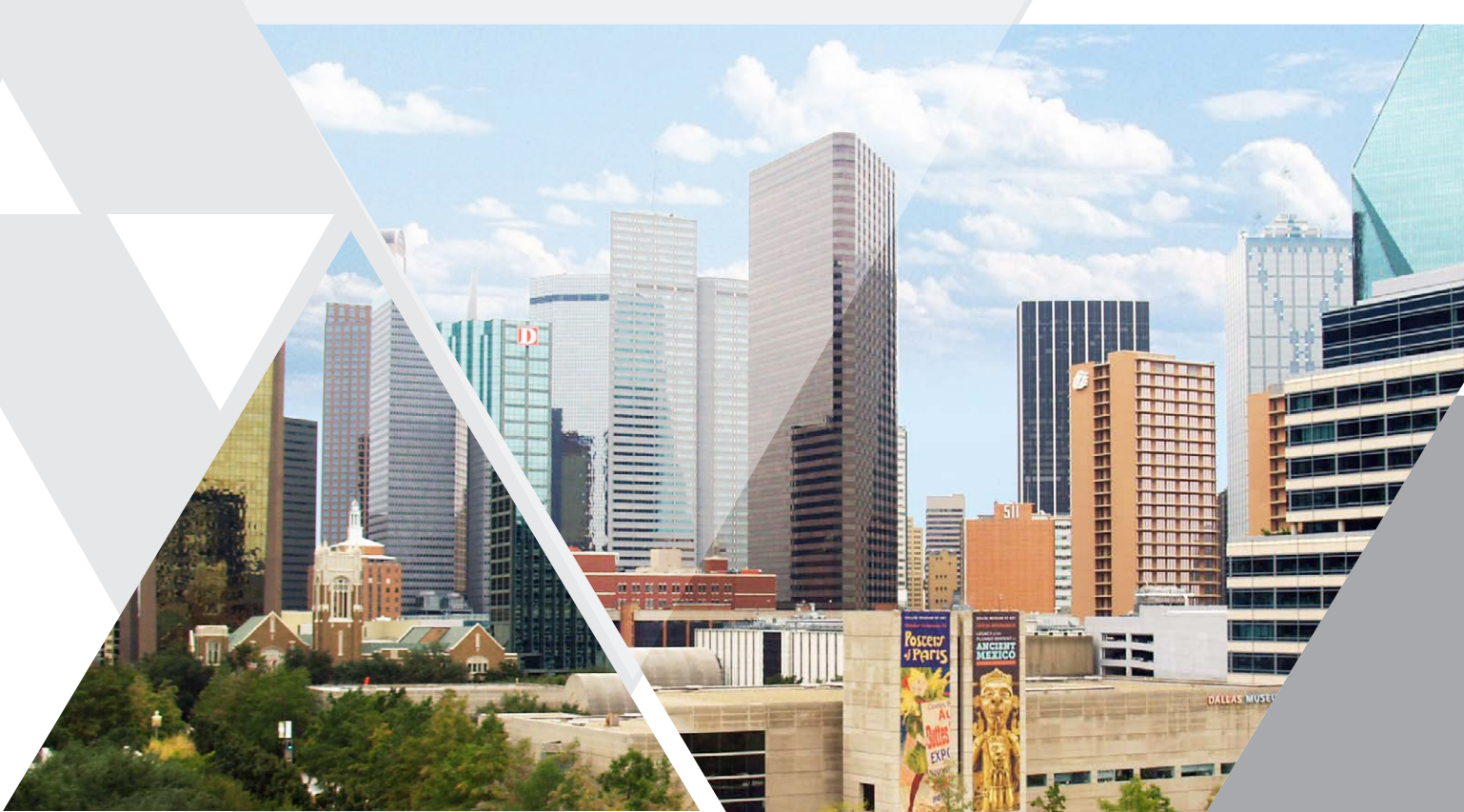
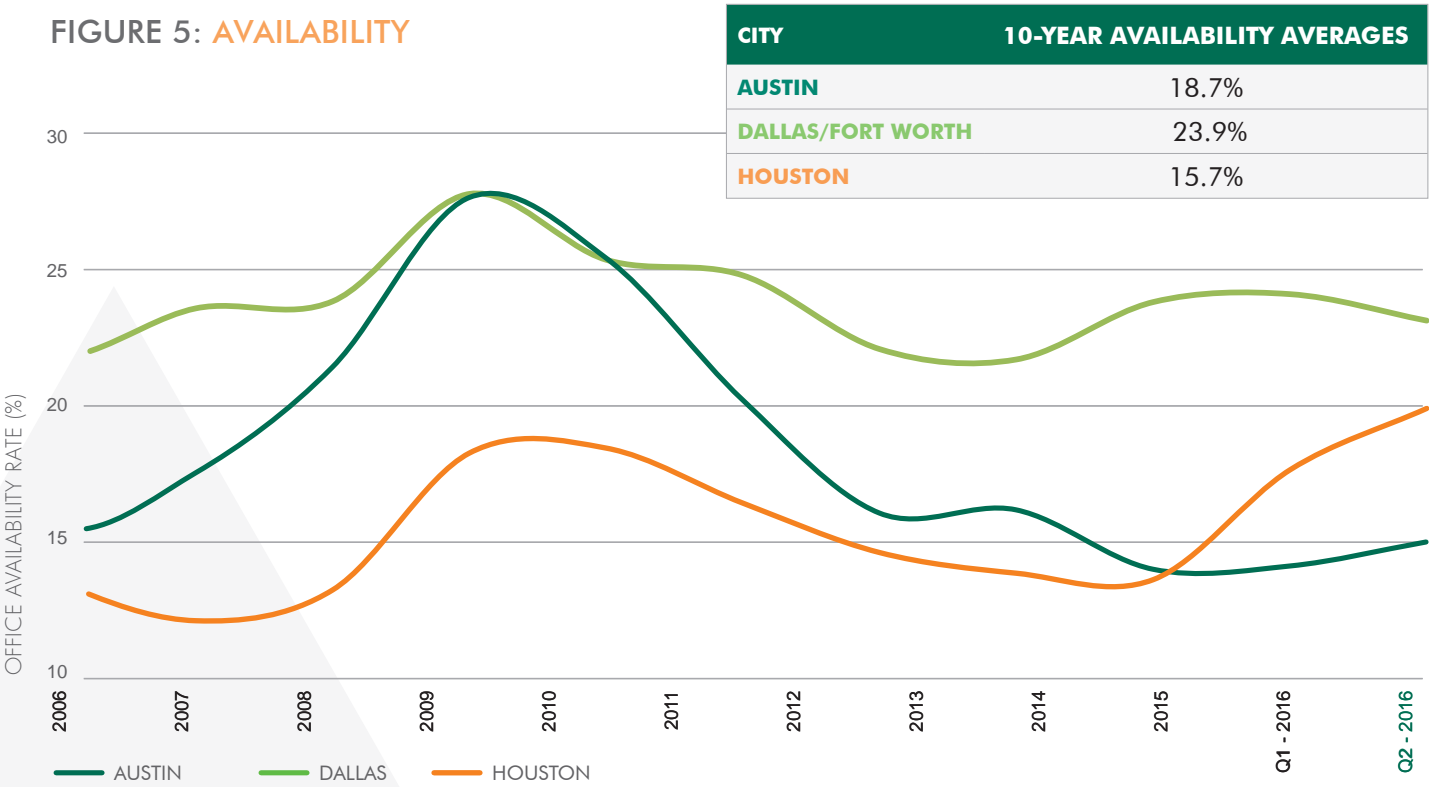


FIGURE 5: AVAILABILITY



Source: CBRE Research, Q2 2016.



THE NEXT TEXAS TWO-STEP:

TENANTS NOW IN THE MARKET

Prevailing office demand requirements and transactions also show how these Texas metros are moving differently. For example, occupiers in Dallas/Fort Worth remain active with requirements for more than 7 million sq. ft., and approximately 50 tenants are in search of at least 25,000 sq. ft. of space. In terms of square footage, the dominant industries within this pipeline include telecommunications and financial services, as well as two energy companies currently considering relocation, accounting for almost half of the 12 total active lease agreements. The Greater Downtown, Far North Dallas and Las Colinas areas continue to attract the most occupier interest, each with more than 1 million sq. ft. of requirements.

In Austin, demand for office space remains high. CBRE Research is tracking approximately 100 occupiers with lease requirements totaling up to 3.3 million sq. ft. across all submarkets, and seven occupiers interested in purchasing buildings. Specifically, users have their sights on the CBD, East, Northwest, North Central and Southwest submarkets, however the majority remain impartial to location specifics for now.

“Occupiers in Dallas/Fort Worth remain active with requirements for more than 7 million sq. ft. of space.”

It is not surprising that technology, professional services and life sciences tenants are driving leasing activity, together comprising the largest single share (30%) among tenant industry types.

CBRE Research is tracking 92 tenants in the Houston market looking for just over a total of 4 million sq. ft. As expected, demand has slowed in Houston's office market with fewer tenants looking for less space. Energy companies continue to drive leasing activity and account for 40% of the tenants currently in the market, while financial, legal and business services comprise 11% each. The CBD and West Houston remain attractive to the majority of tenants, with more than 90% of them considering office space in these submarkets. Interestingly, these two submarkets are in equal demand, as 45% of tenants in the market prefer the CBD and 45% prefer West Houston.

Texas' major office markets may vary in size, demand, inventory cycle and industry occupier mix, but they do share an important commonality: These three markets are historically strong performers with distinctly independent paths forward. There is no doubt that Houston's large energy-based sector will face a tough near-term before seeing early signs of equilibrium as global commodity prices and domestic production rebound. In contrast, the rising DFW office market—fueled heavily by corporate relocations and an inventory of affordable product relative to other major metros—is in the midst of a maturing

expansionary cycle with steady growth for the near-term. Similarly, Austin's office market has seen a stable construction cycle over the past two years after a significant boom in 2014. Austin's unique role as the state's capital, a booming tech center and a dynamic urban core has presented a unique development environment for owners and users in terms of both opportunities and challenges. With development active in Austin, the vacancy rate climbed gradually, but remains low at 7.8% in the CBD.

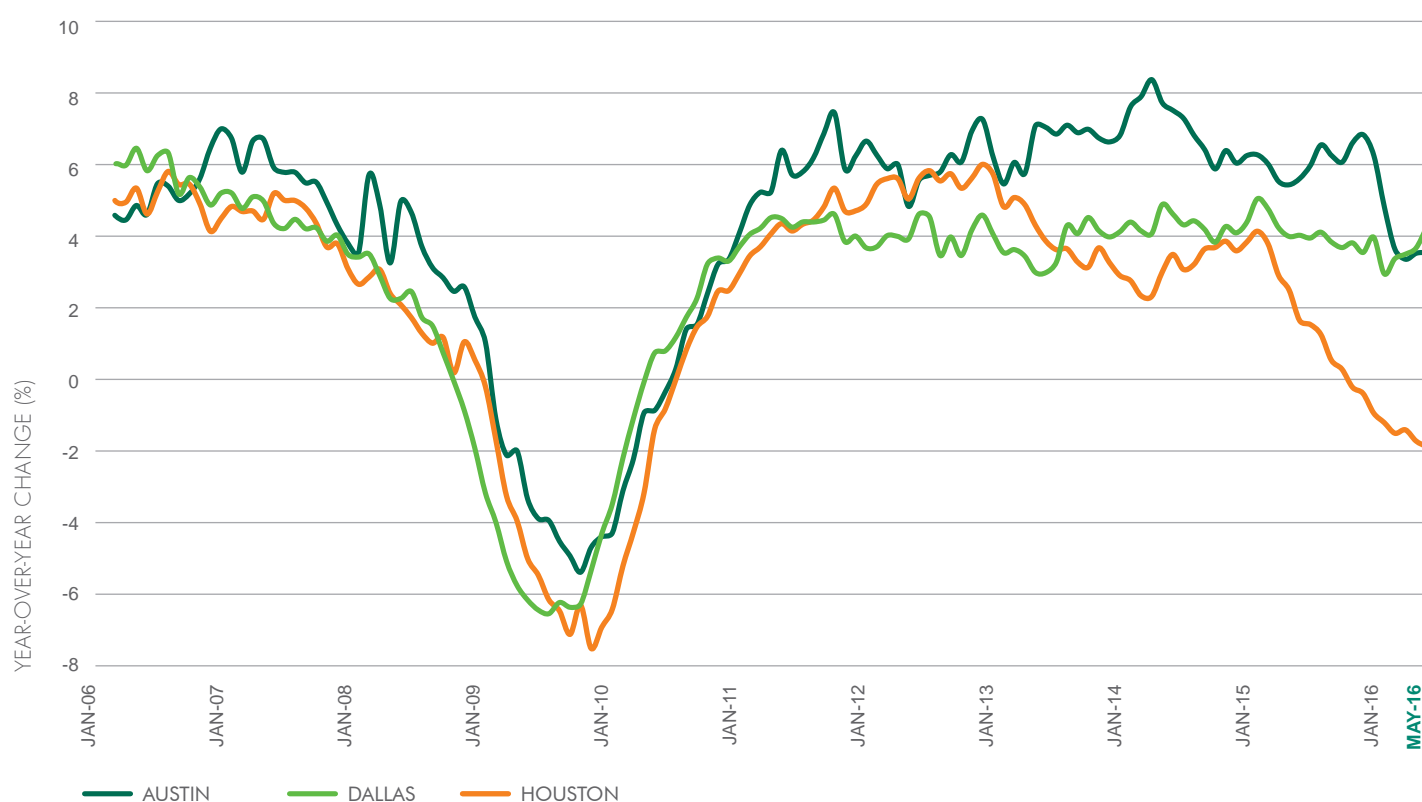
“Energy companies continue to drive leasing activity and account for 40% of the tenants currently in the market.”

Overall, the diversity between the major metros comprising the Texas Triangle is one of the state's greatest fundamental strengths, and will continue to fuel Texas' reputation as a leading engine of national economic growth.

And that is no Texas tall tale.



FIGURE 6: OFFICE OCCUPIER EMPLOYMENT



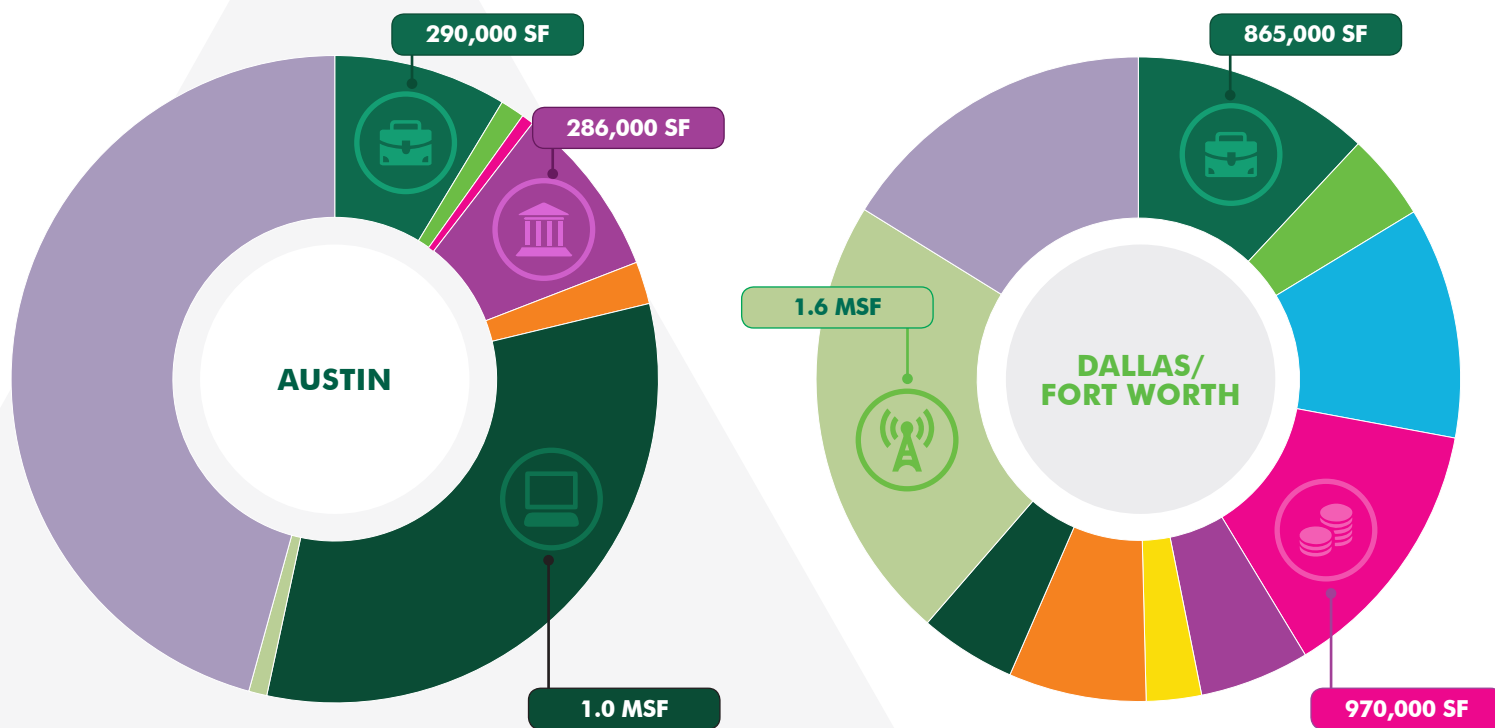
Source: Bureau of Labor Statistics, May 2016.

Note: Data includes employment in professional and business services and financial activities sectors.

TENANTS IN THE MARKET	ENERGY	TECHNOLOGY	PBS/FINANCE
AUSTIN	0	23	4
DALLAS/FORT WORTH	12	5	25
HOUSTON	40	11	19

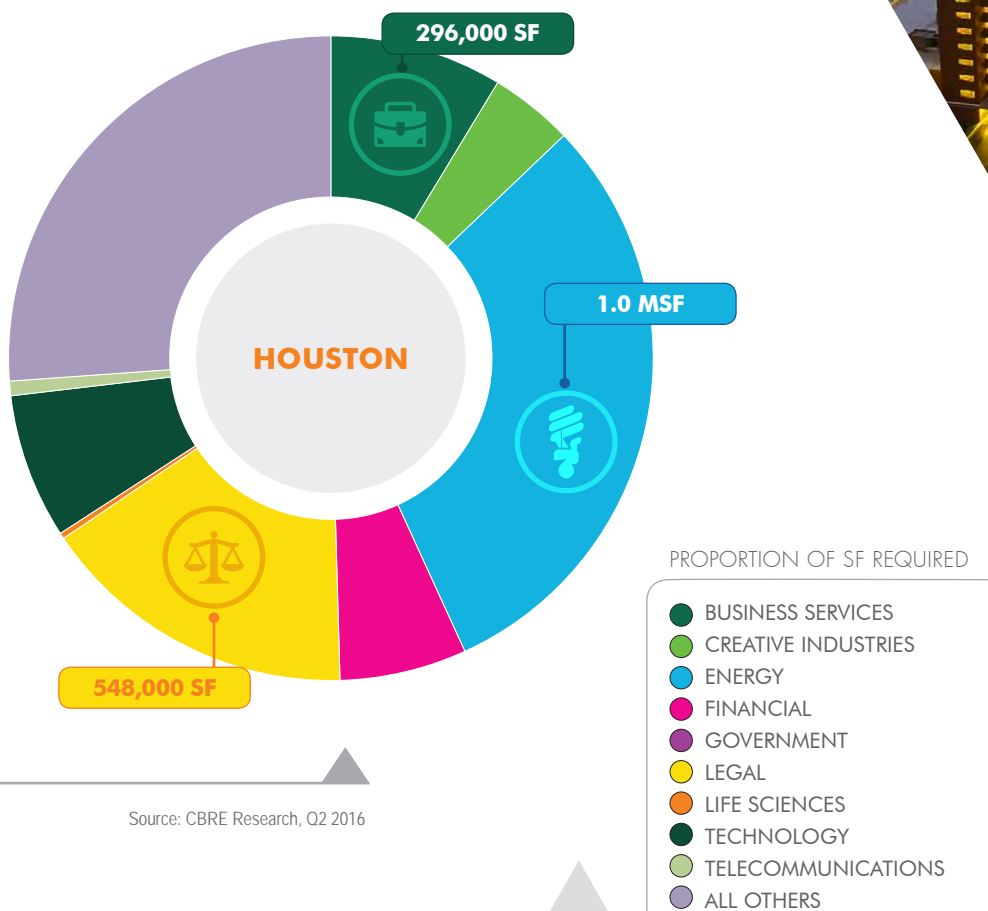
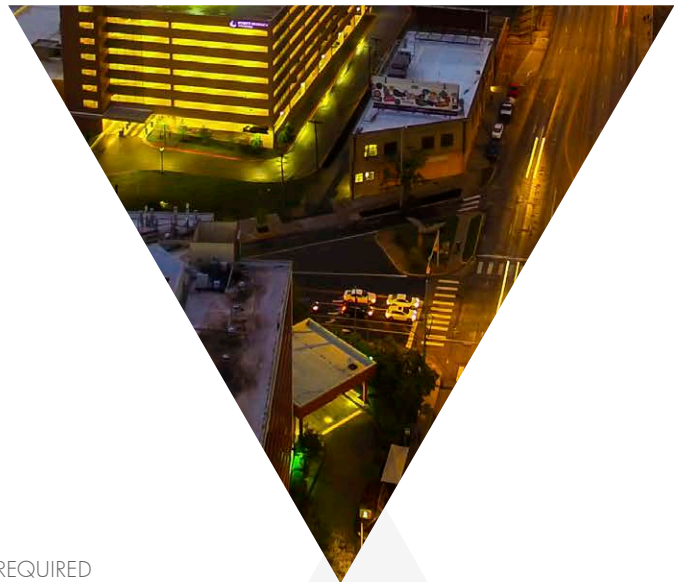
Source: CBRE Research, Q2 2016.

FIGURE 7: TENANTS IN THE MARKET: INDUSTRY SIZE REQUIREMENTS



“Texas’ major office markets may vary, but these three markets are historically strong performers with distinctly independent paths forward.”



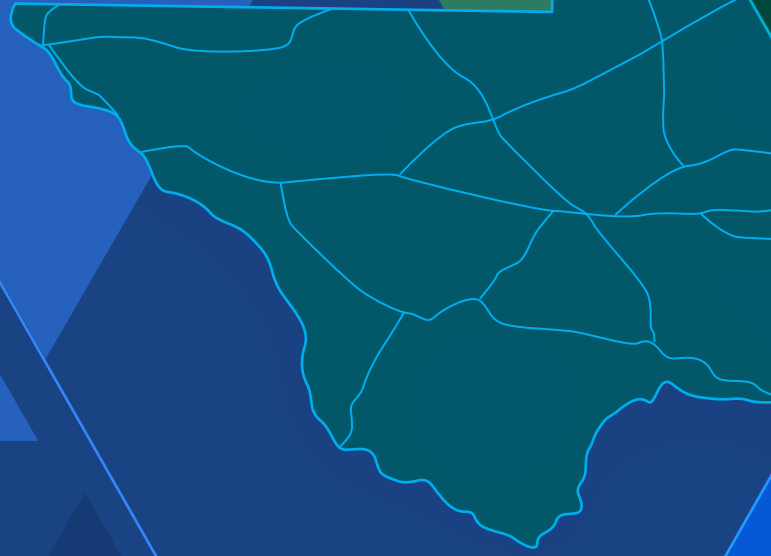


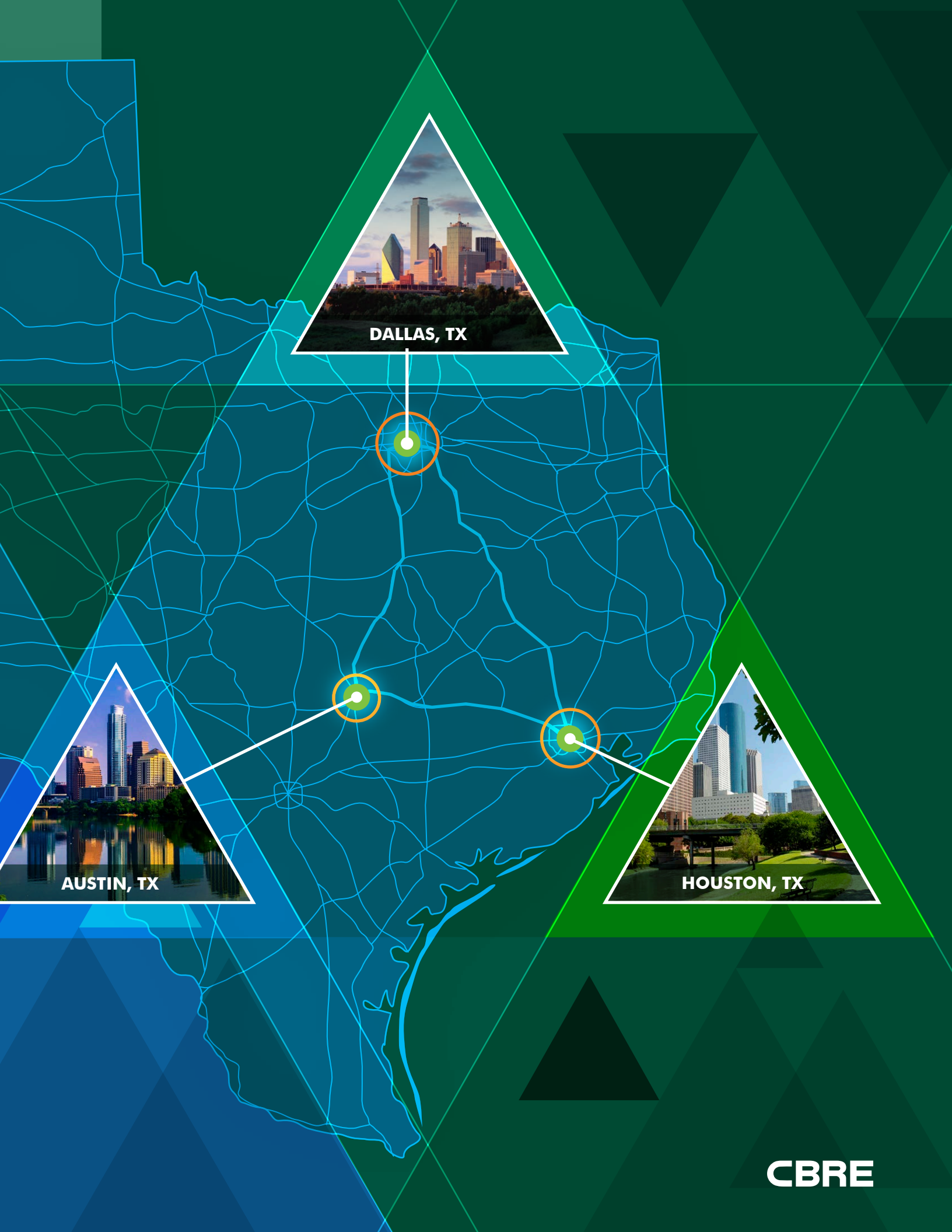
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Edward J. Schreyer

Americas Asset Services & Advisory and
Transaction Services | Investor Leasing
Tel: +1 214 863 3042
ed.schreyer@cbre.com

Spencer G. Levy

Americas Head of Research
Tel: +1 617 912 5236
spencer.levy@cbre.com
Follow Spencer on Twitter: [@SpencerGLevy](#)

Andrea Cross

Americas Head of Office Research
Tel: +1 415 772 0337
andrea.cross@cbre.com
Follow Andrea on Twitter: [@AndreaBCross](#)

Robert C. Kramp

Director, Research & Analysis
Texas-Oklahoma
Tel: +1 713 577 1715
robert.kramp@cbre.com
Follow Robert on Twitter: [@RobertKramp](#)

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