

Tulsa's Path to Inclusive Growth:

The TIL Impact Report

JUNE 2023

Dear Friends,

I hope you can feel the momentum Tulsa has generated over the past few years! As a community, we've made tremendous strides in building an innovation economy that is accessible to all Tulsans. And I'm proud that Tulsa Innovation Labs (TIL) is leading this city-wide effort.

TIL began in January 2020 with a vision to catalyze an inclusive innovation economy in northeast Oklahoma. Shortly thereafter, we transformed that vision into "Tulsa's Tech Niche"—the first tech-led economic development strategy in Tulsa's history.

Today, thanks to our public, private, and social sector partners—especially the George Kaiser Family Foundation—we're implementing that strategy through a set of initiatives designed to create good jobs.

Four years into this journey, TIL is looking to write the next chapter in our organization's history. This milestone offers the opportunity for us to take stock of where we are, assess where we're headed, and identify the changes we must make to achieve our desired impact.

That means understanding what our impact can actually be. Admittedly, impact reports are often more art than science. But as we do throughout our work, TIL took a data-driven approach and leveraged the strongest analytics available to determine our projected impact.

I'm happy to report that independent analysis proves that TIL is on the right track, and that Tulsa has a path for significant and inclusive growth in the coming years. These findings are a testament to the hard work of the TIL team, the dedication of our partners, and the immense potential of our Tulsa community.



While grounded in data and realistic to achieve, the results are also ambitious *projections*. Given that much of our programming is just now getting underway, the impact results in this report are projections over time. To make them real, TIL will need continued capital, cross-sector collaboration, and successful initiative execution. We must keep up the hard work and focus now on implementation. With your help, we can build the inclusive innovation economy Tulsa deserves.

Thank you for your support,

Nicholas J. Lalla

FOUNDER & MANAGING DIRECTOR





About Tulsa Innovation Labs

Recognizing that the jobs of the future are rooted in a thriving innovation economy, TIL was founded with support from the George Kaiser Family Foundation to lead a city-wide strategy for inclusive, tech-led growth. Working with partners from across sectors, we design and launch economic and workforce development initiatives in four emerging tech clusters, what we collectively call “Tulsa’s Tech Niche”: virtual health, energy tech, advanced air mobility, and cyber. Our initiatives aim to support the growth of startups, train diverse talent, and spur academic innovation aligned to these clusters.

[HTTPS://WWW.TULSAINNOVATIONLABS.COM](https://www.tulsainnovationlabs.com)

LinkedIn: Tulsa Innovation Labs [➔](#)

Twitter: @tulsainnovation [➔](#)

TIL Impact Report Project Team

TULSA INNOVATION LABS

Nicholas Lalla

FOUNDER & MANAGING DIRECTOR

Jennifer Hankins

DEPUTY MANAGING DIRECTOR

Shawna Khouri

DIRECTOR, VIRTUAL HEALTH

Jessica Remer

MANAGER, MARKETING & COMMUNICATIONS

ASTRONAUT MONASTERY

Cody Min

FOUNDER

Tara Garner

PROJECT MANAGER

TIL wishes to thank the team at **McKinsey & Company** for the analytical support they provided this project.

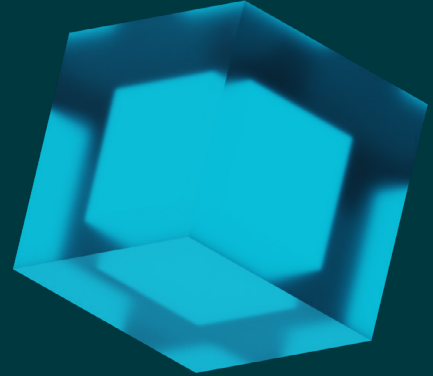
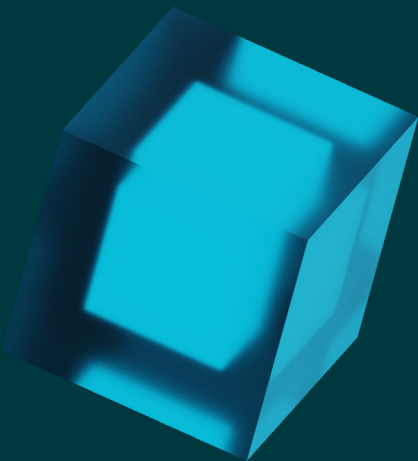


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Executive Summary

Four years ago, Tulsa Innovation Labs launched with a bold and disruptive mission: to catalyze a thriving and inclusive innovation economy in Tulsa. Our foundational strategy, “Tulsa’s Tech Niche,” identified four clusters in which the Tulsa region is positioned to become a leader: virtual health, energy tech, advanced air mobility, and cyber. TIL has worked to capitalize on these opportunities by launching economic and workforce development initiatives that support the growth of startups, ignite academic innovation, and cultivate local talent.

What success looked like when TIL launched in January 2020—or even what was truly possible—wasn’t readily apparent. But the TIL team was guided by the belief that with the right partners, a data-driven strategy, meaningful initiative investments, and disciplined implementation we could carve out a tech niche for the city and grow good jobs for all Tulsans.

Our hard work as a community is starting to pay off. Tulsa has experienced significant momentum in recent years, establishing itself on the national stage as a midsized city on the rise. For proof, look no further than the Tulsa Regional Advanced Mobility coalition, for which TIL led strategy. The Tulsa coalition was named one of twenty-one national winners of the Build Back Better Regional Challenge from the U.S. Economic Development Administration (EDA), winning nearly \$38 million in federal funding to the region.

As TIL’s work continues to expand and earn respect and trust, our vision is proving more and more realistic to achieve. No longer is building an inclusive innovation economy in northeast Oklahoma so farfetched.

While fundraising wins, positive press, and an influx of tech talent and startups are encouraging, at the end of the day, impact is what matters. It’s what inspires and guides TIL, and we must ensure that our work is as impactful for Tulsans as it can be.

To that end, TIL recently commissioned McKinsey & Company, the global management consultancy, to analyze TIL’s projected economic impact. The analysis focused on TIL’s 14 initiatives, representing over \$215 million in initial funding. The impact estimates use existing initiative data as a foundation for a more concrete analysis of TIL’s organizational impact across five primary metrics and three timeframes.

The key findings from this report demonstrate that TIL’s initiatives have the potential to generate significant impact, but only if we stay the course. With steadfast and effective implementation, TIL is on the path to transforming Tulsa into the tech hub we know it can be.

Key Terms

We examined the impact of TIL initiatives across two dimensions: Program and investment. Some TIL initiatives provide both programmatic and investment support, while others offer one or the other.

Program Impact encompasses program operations, such as the staff who operate the program or corresponding job placements.

Investment Impact covers the impact of equity-based investments and direct funding (through investments or non-dilutive grants) to companies participating in TIL initiatives.

When it comes to capturing the economic effects of our initiatives, we analyzed three subgroups, which together equate to overall impact:

Direct Effects refer to the number of jobs created by an initiative.

Indirect Effects cover ripple effects that reverberate outward, such as how the change in the direct industry shapes other industries along the supply chain.

Induced Effects encompass the broader impact of boosted cash flow—created by those direct and indirect effects—on the local economy;

this could look like increased spending on food, clothing, and other local goods and services.

Critical to TIL’s vision is creating good jobs.


Good Jobs are resilient to economic changes over time; they are accessible regardless of how much formal education a person has, offer annual wages and benefits that enable Tulsans to support themselves and their families, and provide the opportunity to create a stable life and career over the long term.

We must ensure all Tulsans have access to these opportunities. That’s why TIL intentionally designs initiatives to catalyze inclusive growth.

Inclusive Growth is economic growth that “translates into increased household consumption” whose “gains are broadly distributed” across various demographics of the population (Dooley, Meagan, and Homi Kharas. “How Inclusive Is Growth?” Brookings, 22 Nov. 2019,). TIL is interested in growth that provides opportunities for sustained economic mobility, especially for individuals from underserved communities.

Impact at a Glance

We are both encouraged and humbled by what the impact metrics tell us. The findings challenge TIL to double down on our focused strategy, to continue seeking support from mission-aligned partners, and to execute on our initiatives to make impact for our community.



	Jobs Created or Placed	Public and Private Investment	Jobs Accessible Without a College Degree	Average Wage in Jobs Created	Companies Attracted to the Region
Projected Annual Impact	1,300	\$151 Million	53%	\$67,000	18
Projected 5-year Impact	6,700	\$798 Million	53%	\$67,000	90
Projected 8-year Impact	10,000	\$1.11 Billion	53%	\$67,000	144

Headlines

TIL's impact trajectory can be captured in five headlines. These findings give us renewed energy to keep building on our organization's momentum and to deliver outcomes that will change the lives of Tulsans.

TIL is on pace to grow up to 10K jobs

Each and every Tulsan deserves a good job. Jobs sustain people's livelihoods, support children and families, and help make for safe, stable, and resilient communities. TIL's 14 active initiatives are expected to create or place approximately 10,000 jobs over the course of our initiatives' lives – representing a transformation of Tulsa's economy.

10K
JOBS CREATED OR PLACED

Job growth from TIL is estimated to increase Tulsa's tech employment by 5% annually.

TIL initiatives are projected to create roughly 500 direct jobs annually across multiple tech-related fields, yielding 1,300 overall jobs in the region each year. If we maintain this trajectory, this jump would equate to a 5% annual increase in Tulsa's overall tech workforce (tech workforce is defined by Moody's Analytics and is based on data from Lightcast, a labor market data repository).

5%
ANNUAL TECH JOB GROWTH

TIL is creating good jobs that pay an annual average wage of \$67,000.

We're excited to see that TIL's initiatives are on track to create or place good jobs that pay a livable wage. The annual wage for direct workers across our initiatives is projected to be \$67,000—more than both the national and Tulsa averages. In any city, but particularly in Tulsa given its cost of living, this wage represents a "good job" that enables Tulsans to take care of their families and get ahead.

\$67K
ANNUAL AVERAGE WAGE

Over half of all jobs being created by TIL are accessible without a bachelor's degree.

When we launched TIL four years ago, a key priority was to make economic opportunity in tech accessible to Tulsans regardless of formal education. The data suggest we are on track to ensure that over half of jobs (53%) created or placed through TIL initiatives are accessible to those without a bachelor's degree.

> 50%

JOBS ACCESSIBLE WITHOUT
BACHELOR'S DEGREE

TIL initiatives can attract nearly 150 new startups to Tulsa.

TIL wants Tulsa to become an attractive environment for firms to set-up shop, and we are on track to get there. In addition to developing and launching new companies, TIL is also projected to draw 144 new companies to the Tulsa region over eight years.

TIL's initiatives and the impact they can make represent a clear path toward inclusive growth for the Tulsa region. If we continue on our current trajectory, Tulsa can establish a reputable tech niche across high-growth industries, creating opportunities for economic mobility for Tulsans across demographic lines and educational levels.

≈ 150

NEW STARTUPS IN TULSA

TIL is on track to catalyze more than \$1 billion in public and private capital.

TIL sits at the intersection of the public, private, and social sectors, so we work to unlock and leverage capital. All of our initiatives have multiple funding sources because they have multiple benefits that add value to the region. Building an inclusive innovation economy, after all, requires cross-sector collaboration. Given this approach, it is little wonder that TIL's initiatives are expected to catalyze more than a \$1 billion in public and private capital over the course of our initiatives' lives.

\$1B

IN PUBLIC AND PRIVATE CAPITAL

Context

As Tulsa Innovation Labs shifts from startup mode to organizational maturity, we've developed a system for measuring impact. While we have work to do to improve and fully operationalize this system, it's helping us monitor and evaluate the performance of our initiatives and share learnings across the organization.

TIL's Impact System

TIL considers impact across three tiers—ranging from micro- to macro-level change. At the most granular level, we utilize key performance indicators (KPIs) to measure success across TIL's initiatives. In the second tier, which is the focus of this report, we analyze organization-wide metrics. And third, for a big-picture perspective, TIL looks at indicators of inclusive growth for Tulsa's innovation economy writ large, which we defined in our 2022 report, "The Economy Forward Framework" (EFF), created in partnership with The Aspen Institute and Heartland Forward.



TIL's Impact System

Tier One: Initiative KPIs

Initiative KPIs are the elemental level at which we measure progress. KPIs are unique to each initiative, but there are a number of commonalities. Here are examples of KPIs across our initiatives, which generally fall in one of three categories.



Academic Innovation:

Includes the number of sponsored research projects, total research and development (R&D) funding in the industry, the number of licensing deals facilitated, and related research and venture funding received from public and private partners.



Start-Up Support:

Tracks the number of firms created in or recruited to Tulsa, as well as investment capital raised, number of business deals reviewed, investors or venture capitalists reached, companies funded, and jobs created.



Talent Development:

Encompasses the number of applications, graduation rate, number of graduates, related local job placement within 90 days of graduation, percentage of people of color in the program, percentage of women in the program, and projected change in earnings.

Tier Two: Organization-Wide Metrics

When taken together, impact from our initiatives provides the basis of our organizational impact. While there are dozens of KPIs for our initiatives, it's important to focus on a subset of key metrics to assess organizational impact and to analyze how our initiatives contribute to those broader metrics. The metrics below represent TIL's priorities across the organization.



Jobs Created
or Placed



Public and Private
Investment



Jobs Accessible
Without a College
Degree



Annual Wage in
Jobs Created



Companies
Attracted to the
Region

TIL's Impact System

Tier Three: City-Wide Indicators

We know that it's not enough to simply create jobs that are in reach for some Tulsans; we need to cultivate an economy that can work for everyone. We also know that TIL is one part of the broader collective effort underway to transition Tulsa's economy. With that in mind, TIL built **"The Economy Forward Framework"** in collaboration with The Aspen Institute and Heartland Forward. EFF is a model for measuring inclusive growth in midsized cities. Organized by nine metrics across three categories, EFF also sets goals for Tulsa—goals that can only be achieved through collective action. TIL uses EFF to monitor the overall health and inclusion of Tulsa's innovation economy.



CITY-WIDE INDICATORS	
INDUSTRY	Share of Jobs in the "Knowledge Economy"
	Young Firm Employment Ratio & Young Firm Knowledge Intensity
	Academic Research and Development Expenditures
ACCESSIBILITY	Labor Force Participation Rate by Race and Sex
	Diversity of Enrollment in STEM Programs
	Share of Minority and Women-Owned Firms in Knowledge-Intensive Industries
VIBRANCY	Public Investment in Quality of Place
	Percentage of Residents with a Bachelor's Degree or Higher
	Retention of Graduates from Local Educational Institutions


Later, on page 23, we'll map tier 2 onto tier 3 to show how TIL's organization-wide metrics directly and indirectly impact the city-wide indicators we identified in "The Economy Forward Framework." TIL's active initiatives are contributing to the city's inclusive growth.

Active Initiative

Our impact analysis factors in only active TIL initiatives, which are defined as initiatives led, overseen, and pioneered by TIL that are operational, funded, or are formally in the pipeline. We provide a brief overview of each initiative below:

 = Operational

Virtual Health

 **BloomOK:** This initiative assists early-stage investors across Oklahoma by providing subject matter experts in virtual health and supporting due diligence efforts. Funding partners include EDA's Build to Scale Capital Challenge program, the Oklahoma Life Science Fund, and the George Kaiser Family Foundation. The program aims to catalyze regional investments in virtual health startups. BloomOK has recently expanded its offerings beyond virtual health into advanced air mobility.

 **Canopy HealthTech:** Canopy supports entrepreneurship, startup growth, and commercialization of virtual health innovations from regional academic institutions, including the University of Oklahoma, Oklahoma State University, and the University of Tulsa. Canopy partners with academics, clinicians, technologists, and industry mentors to build a bridge between the academic sector and private industry.

Health Nexus Tulsa: This initiative will be a centerpiece of TIL's virtual health portfolio. The initiative will serve as the home for high-impact startup support services and feature partnerships with regional payers, providers, and self-insured employers. Health Nexus Tulsa's initial focus will be leveraging these partners to boost virtual health startups' access to pilots, through the Fast-Track to Pilot program. This will improve ease and access to virtual health innovation testing opportunities, attract promising startups, and grow the virtual health industry in Tulsa.

Virtual Health Center of Excellence: The Virtual Health Center of Excellence will be an epicenter for new technology creation and industry translation in virtual health. Its researchers will build AI, hardware, and system solutions to the biggest problems in healthcare delivery, access, and equity. The Center



Representatives from TIL, Canopy HealthTech Executive Director Rachel Lane, Ph.D., RD, and Jay Calhoun and Tyler Pearson with the Intertribal Health Innovation Center

will feature world-class researchers, robust industry collaborations, streamlined technology transfer, pathways to startup formation, as well as novel workforce and training programs in digital/virtual care.

Active Initiatives

Energy Tech

 **EIC Rose Rock:** This venture fund invests in seed and early-stage technology companies and is supported by the George Kaiser Family Foundation, Devon, ONEOK, and Williams and is operated by Energy Innovation Capital (EIC), a Houston-based venture capital firm. The fund focuses on building innovative technologies and businesses to optimize and future-proof the energy sector. EIC Rose Rock provides unparalleled market, technology, and commercialization resources to accelerate the launch of the next generation of energy technology leaders.

📌 **Rose Rock Bridge:** This startup incubator was developed in collaboration with EIC, Williams, Devon, and ONEOK to provide resources to energy tech startups that help them succeed in the Tulsa market. Companies accepted into the incubator are awarded \$100,000 in non-dilutive capital to locate operations in Tulsa.

Advanced Air Mobility

📌 **Advanced Mobility Workforce Programs:** Funded by EDA's Build Back Better Regional Challenge grant, this initiative is part of the Tulsa Regional Advanced Mobility Coalition (TRAM). The program helps local institutions train and place workers in jobs with an emphasis on equitable access. The Tulsa Community Foundation awards grants to partner institutions across three projects: an "Advanced Mobility Associate" certification at Tulsa Tech, a bachelor's degree transfer pathway in mechanical and aerospace engineering between Tulsa Community College and Oklahoma State University, and apprenticeship programs led by the Oklahoma Manufacturing Alliance that facilitate transferable skills.

📌 **LaunchPad:** This TRAM initiative serves as the industry-focused research arm of OSU's Oklahoma Aerospace Institute for Research and Education (OAIRE) and the Unmanned Systems Research Institute (USRI). The LaunchPad will expand Tulsa's advanced air mobility R&D through partnerships with private companies, community organizations, philanthropies, government agencies, and research institutions. The program also includes a fellowship program designed to expose students to industry research.



Representatives from TIL, Williams, Devon, ONEOK, EIC, and GKFF at the launch of EIC Rose Rock and the Rose Rock Bridge incubator



Members of the TRAM coalition with EDA Deputy Assistant Secretary Dennis Alvord, Tulsa Mayor G.T. Bynum, and GKFF Executive Director Ken Levit

Active Initiatives



Advanced Mobility Venture Studio: America's Frontier Fund (AFF) will create a new venture studio in Tulsa with the vision of transforming the region into the nation's hub for innovation in advanced mobility and autonomy. The studio will work with partners such as Oklahoma State University and the University of Tulsa to identify or build commercially transformative, viable intellectual property, creating new companies around those technologies. Additionally, AFF will provide capital, access to networks, and expertise across industry, policy, and entrepreneurship to help these new companies succeed.

Skyway Range: This Beyond Visual Line of Sight flight corridor is a testing facility for advanced air mobility applications, supported by the EDA through the TRAM coalition. The range is 114 nautical miles and located close to the city of Tulsa. This range is being developed to attract startup, corporate, and research and development activity to the region while addressing key challenges of air traffic management.

Mobility and Energy Foundry: This initiative is a venture creation engine in partnership with Team8, an Israeli cybersecurity venture firm. The Foundry will build category-leading companies across the mobility and energy sectors, encompassing sub-domains such as supply chain and logistics, transportation, utility power, and agricultural technology. The Foundry will focus on solving problems spanning data and security, connectivity, and payment layers, among others.

Active Initiatives

Cyber

TU/Team 8 Cyber Fellows: This doctoral program is co-managed by TIL, the University of Tulsa (TU), and Team8. It supports doctoral fellows pursuing commercializable projects on topics including computer science, electrical and mechanical engineering, data privacy, cybersecurity, explainable AI, intelligent agents, and security for machine learning algorithms. Graduates will use their research for commercial applications and compete for roles at well-known firms.

Cyber Skills Center: TIL and Tulsa Community College partnered to create a center that upskills talent for cyber and analytics careers through a 24-week, part-time training program. Wrap-around childcare, transportation, and in-home technology services are provided, and tuition is free. The Center strives to help Tulsans level-up and equip participants with skills to rejoin the workforce, pursue an apprenticeship, or receive credit toward a two- or four-year degree.

Cyber Innovation Institute at the University of Tulsa: The Institute will build on TU's national expertise in cyber and enhance the city's cybersecurity ecosystem through applied research in areas including critical infrastructure protection, digital transformation, artificial intelligence, machine learning, predictive analytics, and human and organizational security. Key goals include drawing top tier cyber talent to Tulsa, helping form high-growth cyber startups, and advancing commercialization opportunities in this space for local businesses.



A TU/Team8 Cyber Fellow and their faculty adviser demonstrating a methane detection technology for a potential client



Participants of the Cyber Skills Center's first cohort

Our Partners

While TIL continues to develop new initiatives, moving forward, our top priority will be ensuring the success of the active initiatives above. These initiatives and, in turn, TIL's impact are made possible by a suite of local and national partners that span sectors. These operating, capital, and strategic partners are the heart and soul of TIL, and we are grateful for their support and contributions.





Methodology

TIL's existing initiative data (e.g. budget models and KPIs) was used as the foundation for a more rigorous analysis of the organization's impact trajectory.

Utilizing data from TIL, Lightcast, and the Association of University Technology Managers, McKinsey independently analyzed the impact of TIL's 14 active initiatives across two dimensions:

- **Program Impact**, defined as program operations (such as program staff) and activities (which covers job placements).
- **Investment Impact**, defined as the impact of investments and direct funding administered to Tulsa companies through TIL-led initiatives.

For each dimension, McKinsey calculated “direct,” “indirect,” and “induced” impacts for each of five primary metrics. McKinsey then aggregated the impacts of each initiative to estimate the total impact for each metric.



Jobs Created
or Placed



Public and Private
Investment



Jobs Accessible
Without a College
Degree



Annual Wage in
Jobs Created



Companies
Attracted to the
Region

Two metrics merit additional explanation: The “Annual Jobs Created or Placed” metric refers to the number of jobs created or placed per year. Within this metric, job years refers to full employment—created or placed—for one person. Meanwhile, the “Annual Wage in Jobs Created” metric represents the average wage for direct workers, such as software developers or engineers.

This wage metric does not represent workers at the indirect and induced levels—like truck drivers or retail salespeople—who tend to earn lower average wages.

Readers should also note that much of TIL's work is aimed at developing new startups. This impact is captured not in the “Annual Companies Attracted to the Region” metric but factored primarily in the “Annual Jobs Created or Placed” metric.

Key Assumptions

McKinsey utilized a number of assumptions to build the impact model. Here are the most important ones:

- This analysis is solely based on initiatives that are active and TIL-led.
- Metrics are based on funding at launch and assume at least one round of follow-on funding per initiative.
- Impact effects are derived from Tulsa MSA multipliers from Lightcast. “Direct” in the impact model is called “initial” in Lightcast—these refer to the first change in an industry, for example adding a certain number of jobs. “Indirect” in the impact model is the sum of “direct” and “indirect” in Lightcast—Lightcast defines “direct” and “indirect” as the first and second “ripple effects” of changes in the initial industry’s supply chain.
- Jobs to sales multipliers are used to translate program funding to jobs (where sales is a proxy for program funding).
- Accessible jobs are calculated using Lightcast input/output scenarios, based on a sample change of 1,000 jobs in a given industry and determining the share of those occupations that typically require less than a bachelor’s degree.
- Average wages are calculated using Lightcast input/output scenarios, based on a sample change of 1,000 jobs in a given industry and calculating the weighted average of median occupational earnings.
- For initiatives that provide direct financial support to firms, second order impact (such as jobs created at those firms) is included in investment impact.
- Firms created and recruited are included in second order effects when there is no direct investment from TIL initiatives.
- Firms recruited are included as part of the “companies attracted to region” metric, regardless of investment from TIL initiatives.



Additional Impact

The impact analysis focused on TIL-led initiatives only, which captures the core of our work, but not all of it. TIL is adding value to the Tulsa region in a host of other ways not represented in the impact metrics. Not included are activities that are either secondary to TIL's mission or activities in which TIL plays an important but supporting role:

- **Non-TIL-Led Corporate Attraction:** TIL works closely with other local organizations on their corporate attraction efforts. This is a critical but secondary aspect of TIL's work not factored into this analysis. TIL initiatives that formally recruit, engage and support startups, however, are included in the analysis.
- **Tulsa Port of Inola:** This project is part of the TRAM coalition, and as a component project within this award, the Port is now able to develop an additional 2,300 acres of pad-ready sites. The Port of Inola is projected to catalyze up to 12,000 jobs, \$3 billion to \$6 billion in GPD, with greater than 60% of contributing jobs accessible without a college degree, paying an average annual wage of \$55,000 to \$65,000.
- **Tax Revenues:** It's common for economic development impact analyses to include multiplier impacts, such as indirect sales tax revenues and sales taxes from direct employees and employees at supported local businesses. This report does not factor in these impacts, though our initiatives do increase the Tulsa region's tax base.



George Kaiser giving members of TIL's Leadership Council a tour of the Gathering Place during the Inside Innovation Summit in 2022



TIL's Nicholas Lalla, former Arkansas Governor Asa Hutchinson, former Oklahoma Science & Innovation Secretary Elizabeth Pollard, Oklahoma Governor Kevin Stitt, and TIL's Jennifer Hankins at the signing of the advanced mobility MOU

• **Convening & Thought Leadership:** It is impossible to fully capture the value and impact TIL has had on our community from our convening and thought-leadership activities. For example, in 2022, TIL brokered an MOU between the Oklahoma and Arkansas Governors to collaborate on advanced mobility and organized the Inside Innovation Summit, which brought dozens of national leaders to Tulsa. Teammates also regularly write op-eds in such publications as Fast Company, Newsweek, and Stanford Social Innovation Review as well as speaking at conferences, including SXSW-EDU, NWA Tech Summit, and the Rock Health Conference.

The analysis of TIL’s initiatives has brought our impact trajectory into focus. Because the analysis only includes active initiatives, the results are somewhat conservative, but have a high degree of integrity. TIL’s projected impact has been estimated on three timeframes: annual impact, at five years, and at eight years (currently designed life cycle of initiatives). A look at the full potential for impact helps paint a rich picture of Tulsa’s path for inclusive growth.



05-19-23 | IMPACT COUNCIL

To innovate in uncertain times, think like an urbanist

Cross-pollination can impact these three challenges to innovation.



OPINION

Why the Next Cyber War Should be Fought by the Heartland | Opinion

NICHOLAS LALLA, CO-FOUNDER AND MANAGING DIRECTOR, TULSA INNOVATION LABS

ON 9/14/21 AT 8:30 AM EDT



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VIEWPOINT

Inclusive Growth for Heartland Cities

Tulsa is piloting a new model to measure its growth, hoping other cities will follow suit.

BY NICHOLAS LALLA

The US economy is badly unbalanced. Most of the country’s growth attaches to a handful of large coastal metro areas, almost entirely ignoring the country’s vast heartland and its small- and midsize markets. This divide has created pockets of prosperity and dynamism that are also becoming too expensive for young people to live in, depressing opportunity in the rest of the country and sowing bitterness far and wide. Recognizing that geographic inequity is a major US problem and that the jobs of the future are needed in a thriving innovation economy, the George Kaiser Family Foundation launched Tulsa Innovation Labs (TIL) in 2019 to help build a tech hub in Tulsa, Oklahoma, that would leverage local strengths and expand tech opportunities for all residents. Toward that end, our team sought to identify new economic indicators to measure and track our progress and to ensure that Tulsa was growing in the right way. But this exercise challenged us more than we expected. We struggled to identify an existing framework that reflected our aspiration for inclusive growth. We concluded that traditional metrics, such as jobs created or average wage, often fail to capture the real drivers of growth and can exclude more nuanced analyses that address the inclusiveness, diversity, and resilience of jobs. The knowledge economy is quickly disrupting legacy industries and labor markets, and growth metrics of the past are losing their relevance. Given the complex shifts underway, we sought new tools to gauge readiness, track progress, and ensure that the knowledge economy growth would reduce inequality rather than exacerbate it.

We realized that the scarcity of metrics and the systemic problems were bigger than Tulsa and that solutions we and others might devise could be applicable more widely. Expanding beyond the scope of Tulsa, TIL partnered with Heartland Forward and the Aspen Institute to establish the Economy Forward Framework—a set of nine inclusive growth metrics that, when applied together, give a sense of how a city is growing and what areas need to be addressed to make the local economy more vibrant and equitable.

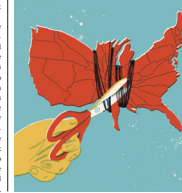
Inclusive Metrics

Our original research and analysis focused on 38 midsize cities with metropolitan area populations between 750,000 and 1.5 million. We identified these cities as the focal point of the demographic movement we were witnessing from coastal tech hubs to

emerging heartland cities that might create a more equitable America. We examined them over a 30-year period (2000-2030). Three of the metrics related to industry and the particular segment of the knowledge economy that a city is looking to grow. The first is the share of jobs in the knowledge economy, which are better paying and scarcer in many Midwest cities. The second, the share of employment at innovative firms less than six years old, measures a city’s ability to produce and retain potential high-growth companies. The third counts academic R&D expenditures, which can serve, through local universities and colleges, to anchor innovation ecosystems.

The second set of metrics looked at accessibility, the degree to which education and career opportunities are available to underserved populations. One is labor force participation rate by race and sex, which can indicate whether vulnerable workers are being adequately prepared for the economic transition. The second is diversity of enrollment in science, technology, engineering, and math (STEM) programs, which is a nationwide challenge, especially among Black or African American, American Indian or Alaskan Native, and Hispanic students. The last counts the share of minority- and women-owned firms in knowledge-based industries. A high score here indicates success in building entrepreneurs from underserved populations to succeed in innovative industries, helping to close the country’s innovation wealth gap.

The last bucket of measures related to what we called *community vitality*. One was public investments in quality of life, which relates to the cultural and recreational amenities that are increasingly important determinants of where knowledge economy workers and firms that employ them choose



Hari Sreenivasan, PBS Newshour; Ramona Schindelheim, Editor-in-Chief of Working Nation; Nicholas Lalla of TIL



Projected Impact

Projected Annual Impact

Estimates show significant annual impact across five metrics.¹



**Jobs Created
or Placed**
THOUSAND



**Public and Private
Investment**
MILLION \$



**Jobs Accessible
Without a College
Degree**
%



**Annual Wage in
Jobs Created**
THOUSAND \$²



**Companies
Attracted to
the Region**

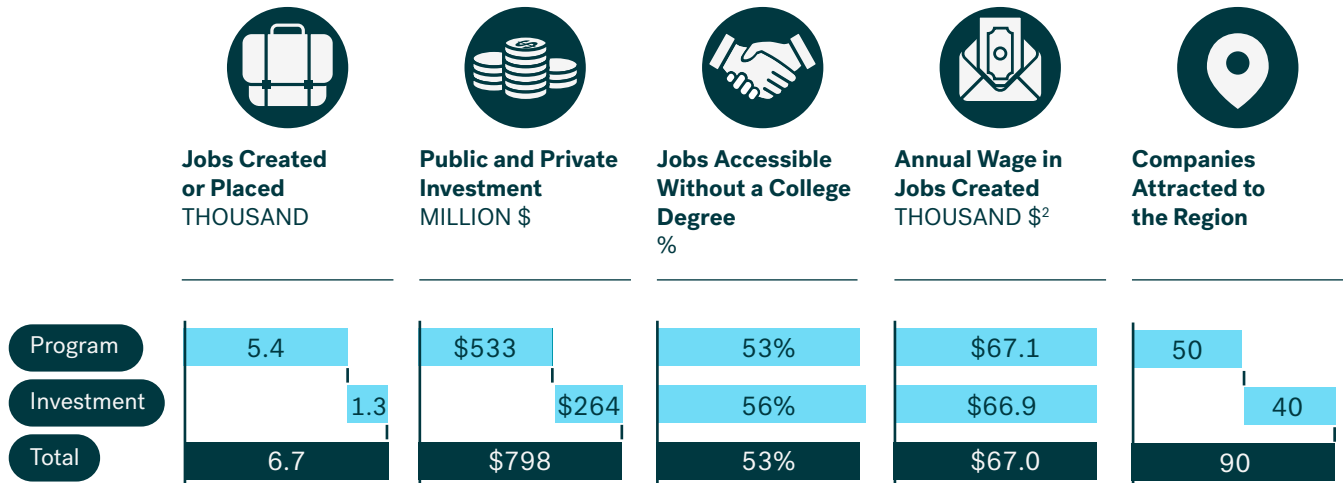


1. Estimate; Impact figures for Tulsa MSA; analysis includes 14 TIL programs
2. Represents average wage for direct workers (e.g., software developers, engineers), not workers at the indirect and induced levels, who tend to earn lower average wages (e.g., truck drivers, retail sales)

Source: Tulsa Innovation Labs data; Lightcast; AUTM;

Projected 5-Year Impact

Estimates show significant 5-year impact across five metrics.¹



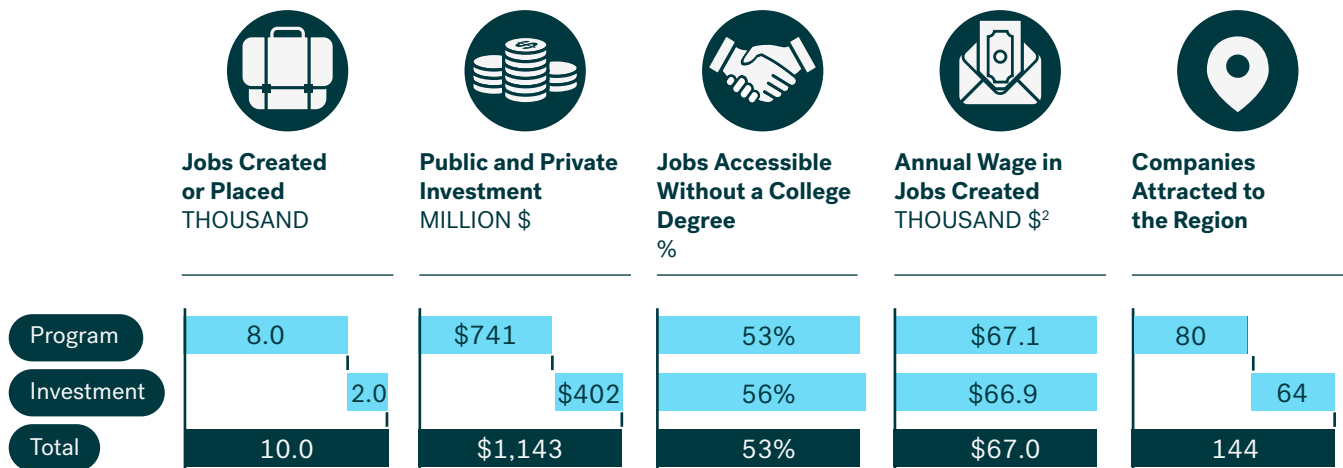
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Source: Tulsa Innovation Labs data; Lightcast; AUTM;

Projected 8-Year Impact

Estimates show significant 8-year impact across five metrics.¹



1. Estimate; Impact figures for Tulsa MSA; analysis includes 14 TIL programs

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Source: Tulsa Innovation Labs data; Lightcast; AUTM;



“The Economy Forward Framework” Mapping

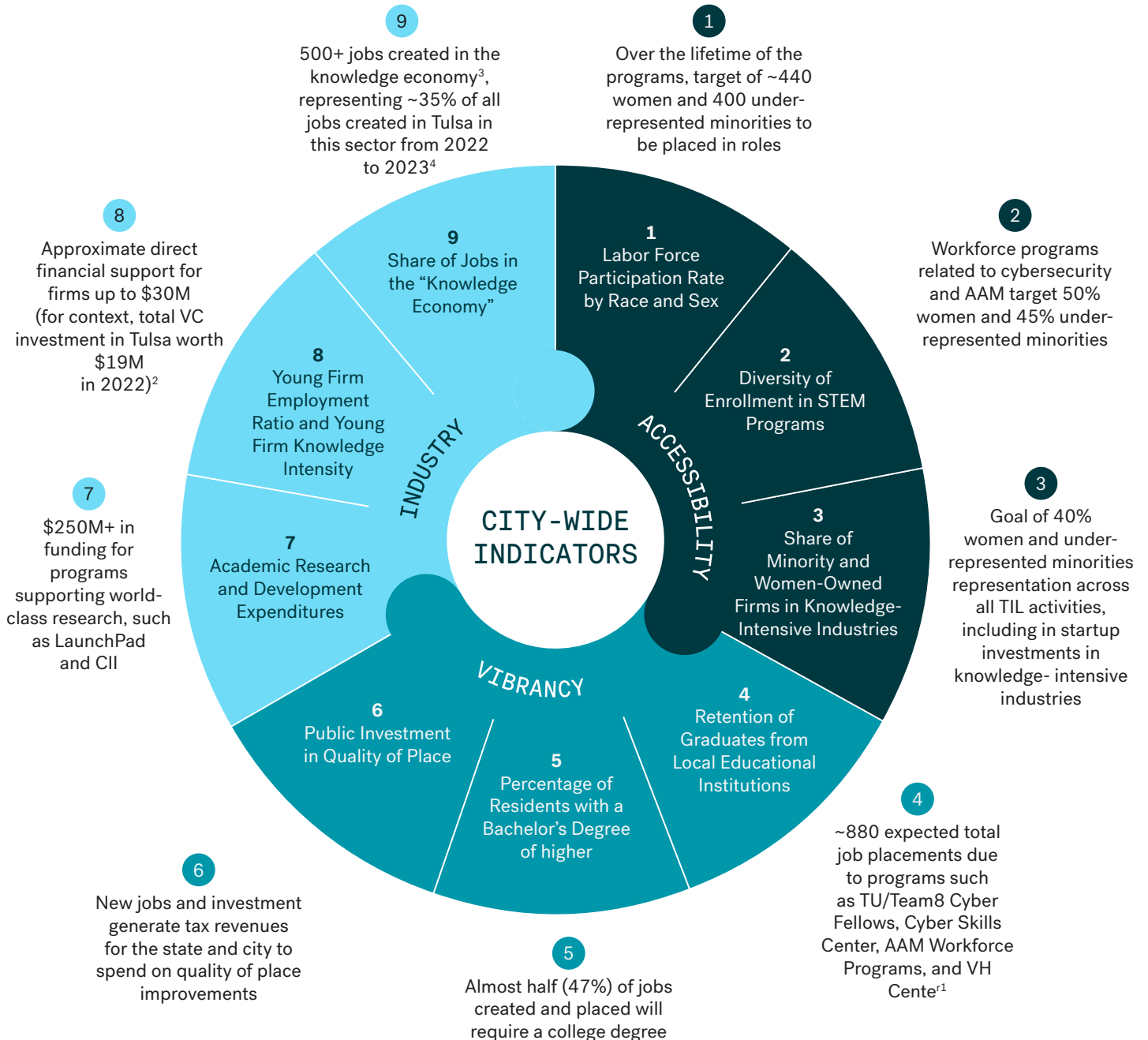
TIL’s organizational impact directly supports the city-wide indicators we identified as most important in “The Economy Forward Framework”—a tool for mid-sized cities to use to measure the inclusive growth of their innovation economies.

Mapping our organizational metrics onto the EFF metrics reveals new insights that can inform TIL’s work. This exercise also underscores the fact that TIL is one organization among many working to expand Tulsa’s innovation economy.

To achieve both TIL’s organizational metrics and the city-wide indicators EFF identified, TIL must continue to partner with local stakeholders, for economic and workforce development are collective efforts.

“The Economy Forward Framework”

TIL is Contributing to the City’s Inclusive Growth



1. Throughout entire length of the programs
2. Total VC investment for Tulsa combined statistical area (CSA) rather than MSA, due to Pitchbook data availability
3. Assumes that all direct jobs created through TIL initiatives are in the knowledge economy
4. Based on EFF knowledge economy definition; data from Lightcast

Source: The Economy Forward Framework: How Midsized Cities can Achieve Inclusive Growth in the Knowledge Economy, TIL Impact Projections, Pitchbook, Lightcast

Conclusion

If you take away one thing from this report it should be that TIL and Tulsa are on the right track, but we have more work to do! While we're encouraged by the findings, this project has surfaced areas of improvement—from an initiative design and implementation perspective as well as from a TIL operational perspective.

At our recent team retreat, TIL brainstormed ways to improve how we monitor, evaluate, and learn (M&E&L) from our initiatives—all critical aspects to achieving impact. Here are four action items we're working on as an organization:

- **Design for Inclusion:** TIL's workforce initiatives are projected to make strong diversity, equity, and inclusion impact a standard we must universalize across TIL initiatives. Our startup and academic innovation initiatives, in particular, need to improve in this area. DEI in the entrepreneurial world is difficult no matter the city. But TIL must take the challenge and do better through thoughtful up-front design, ambitious and consistent goals, continuous refinement of current initiatives, and appropriate follow-on interventions.
- **Establish a Data Collection System:** This project revealed inadequate data-gathering processes within our organization. TIL needs to establish effective processes to gather, collect, track, and compare initiative data. Data must be updated more regularly and should be owned by one dedicated person within TIL, charged with managing our M&E&L scheme. Utilizing a central dashboard, where metrics for all initiatives are stored, will help ensure performance and surface related insights.

- **Create a Culture of Learning:** Each TIL initiative solves a specific barrier to growth and involves a multitude of nuances. However, TIL needs to normalize sharing best practices and lessons learned across our initiatives to boost efficiency and effectiveness. The performance dashboard will aid this effort, but TIL also needs to increase communication across and visibility into TIL's four industry portfolios to foster a stronger internal culture of collaboration and learning.
- **Simplify Communications:** TIL has a compelling narrative to share, and the Tulsa story is resonating with stakeholders across the country. Yet many of our partners are not familiar with the economic development profession or its terminology. Moreover, because our work is innovation-based, TIL's messaging can also overly rely on technical jargon. The bottom line is that we need to simplify how we explain who we are and how we work. And we need to more regularly (and widely) promote the opportunities we're creating for the Tulsa region.

As Tulsa Innovation Labs celebrates its four-year anniversary, we are heartened by the key finding of this impact analysis: that the initiatives we're designing and launching with public, private, and social-sector partners have high-impact potential for the Tulsa region. If we maintain momentum and press on, TIL is on its way to transforming Tulsa and building an inclusive innovation economy that can serve as a model for the nation.

TULSA INNOVATION LABS®