



2024 Irvine's Innovation Economy

PHASE 3 FINDINGS CONDENSED

AUGUST 2024



Presentation Outline

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- 02 | Story of Innovation in Irvine
- 03 | Current State of Irvine's Innovation Economy
- 04 | Irvine Innovation Scorecard
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What is an Innovation Economy?

A region in which:

- Entrepreneurs & stakeholders **cluster and connect to fuel commercialization** of new products, services, business models, or processes.
- Innovations **drive economic growth**, creating high value-added opportunities with large economic and employment multipliers.
- Innovations **fuel growth in supply chains** in connected industries, generating economic and fiscal benefits

Story of Innovation In Irvine

1960

1970

1980

1990

2000

2010

2020+

Defining the Vision for the City of Irvine

Master planning of a city built around a university, with a mix of housing, retail, civic amenities, & open space

Developing quality real estate & infrastructure

Completion of the Irvine Business Complex in strategically located areas to ensure a strong jobs base

Investments driven by real estate

Attracting high quality anchor tenants

Mazda & Edwards Lifesciences catalyze growth of industry clusters

Approval of plans for \$1 billion Irvine Center retail-commercial project

Creating a strong innovation backbone

Founding of UCI Research Park, fostering collaboration between UCI & major local tech and mobility firms

Developing a local talent ecosystem

Power Park Designation for UCI Research Park by the U.S. Department of Energy

Growing a critical mass of venture capital

Founding of the UCI Beall Center for Innovation and Entrepreneurship

Surge in venture capital investments, triggering an investment boom

Redefining priorities: paradigm shift

Inflection point: COVID-19 pandemic forces regions to reevaluate strategic priorities related to growth and resilience

Rapid adoption of breakthrough technologies begins to transform industries & offer new growth opportunities

What Makes Irvine a Great Place To Do Business?

1

A planned community built on high-quality educational institutions and a well-educated workforce.

2

A vibrant local business community, with both small and larger anchor business, that are well-served by local government.

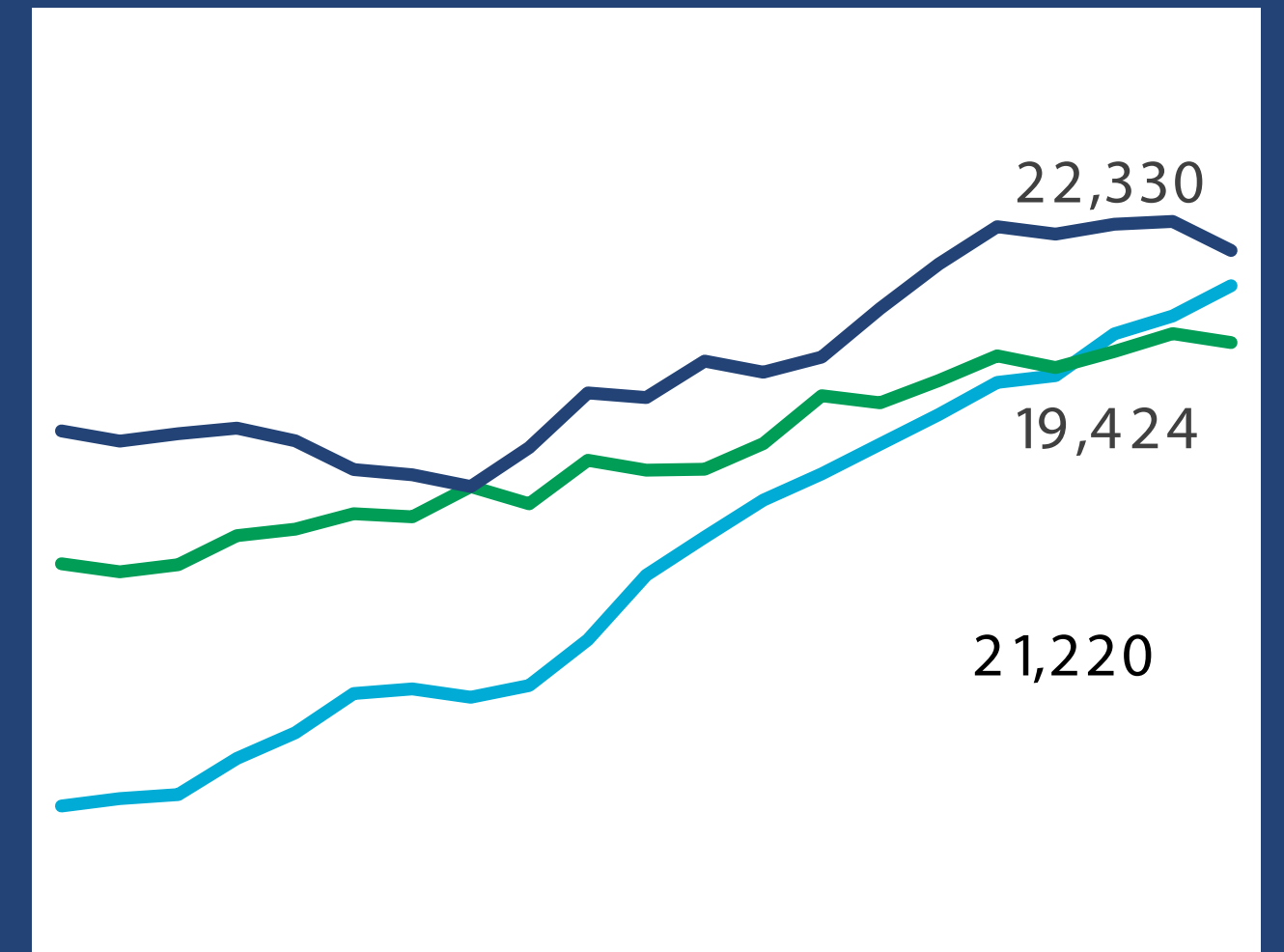
3

A history of thoughtful real estate development, a driver of Irvine's economy in the past, but not likely in the future

4

A community that provides a high quality of life, attracting entrepreneurs, investors, and business leaders.

A HISTORY OF ROBUST JOB GROWTH



2003 2005 2007 2009 2011 2013 2015 2017 2019 2021 2023

— Healthcare Innovation
— Medical Technologies
— Enabling and Creative Technologies



Current State of Innovation In Irvine

Irvine

Primary Innovation Industries

HEALTHCARE INNOVATION

(Advanced Diagnostics, Genomic Sequencing, Telehealth)

21,220

Jobs (2023)

\$62,635

Average Wages

Key Local Employers

UCI Health &
Kaiser Permanente

(Below-average employment concentration)

MEDICAL TECHNOLOGIES

(Remote Monitoring Tech, Surgical Robotics, Cardiovascular Tech)

19,424

Jobs (2023)

\$115,711

Average Wages

Key Local Employers

Edwards Lifesciences, B Braun
Medical, Masimo

(Very high employment concentration)

ENABLING & CREATIVE TECHNOLOGIES

(Artificial Intelligence, Quantum Computing, Gaming/Simulations)

22,330

Jobs (2023)

\$152,664

Average Wages

Key Local Employers

Broadcom,
Activision Blizzard

(Very high employment concentration)

Innovation Scorecard

REGIONAL INNOVATION HUB	INNOVATION SCORE
Boston Kendall Square (MA)	1
Research Triangle Park (NC)	1
Elevate Quantum Tech Hub (CO/NM)	1
Medical Alley (MN)	2
Bloch Tech Hub (IL)	2
Austin (TX)	3
Oakland Innovation District (PA)	3
Irvine	3
Silicon Slopes (SLC)	4
Seattle (WA)	4
Phoenix (AZ)	5
Long Beach (CA)	5

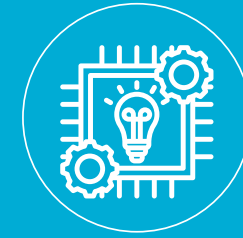
INNOVATION SCALE	
1	Top Innovator Strengths across all metrics
2	Strong Innovator Weakness in 1 metric
3	Moderate Innovator Weaknesses in 2 metrics
4	Emerging Innovator Weaknesses in 3-4 metrics
5	Nascent Innovator Weaknesses in 4-5 metrics

* Regional Innovation Scores were calculated based on a comparison of (1) **Patent Activity**, (2) **Rate of New Business Formation**, (3) **Rate of Venture Capital Spending**, (4) **Rate of Federal R&D Spending**, and (5) **Rate of University R&D Spending**.

Risk- Ranked Growth Scenarios

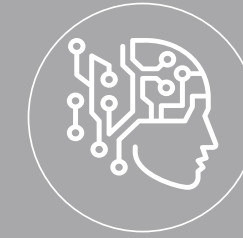
(SIMPLIFIED)

PROBABILITY



EVOLUTION OF HEALTHCARE INNOVATION

(Next-Generation Medical
Technologies, Treatment Delivery, &
Continued Evolution of Irvine as a
Premier Destination for Healthcare)



ENABLING & CREATIVE TECHNOLOGIES

(AI, ML, Quantum Computing,
Smart Manufacturing,
Gaming)



NEXT-GENERATION DEFENSE TECHNOLOGIES

(Advanced Autonomous Systems,
Cybersecurity)

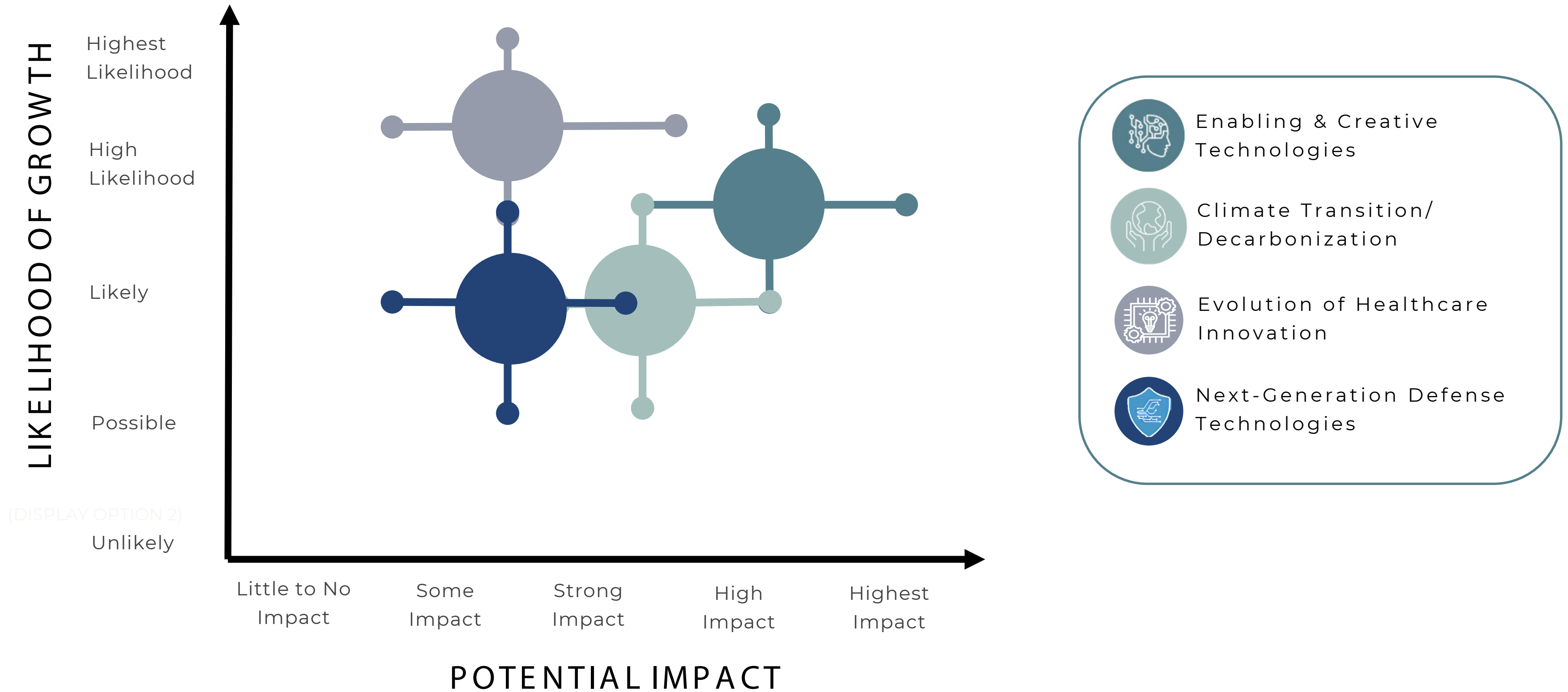


CLIMATE TRANSITION/ DECARBONIZATION

(Mobility, Cleantech Software,
Hydrogen, Alternative Vehicles and
Other Clean Energy Mobility
Applications)

IMPACT

Risk-Ranked Growth Scenarios





Evolution of Healthcare Innovation

SCENARIO PREMISE

Irvine continues to evolve as a **premiere healthcare destination**, leveraging its historical strengths in medical devices and healthcare into the design and creation of next-generation healthcare technologies and advanced treatment delivery.

GROWTH DRIVERS

- Increasing Share of Senior Population
- Growing Shortage of Healthcare Workers
- Rising Per Capita Health Expenditures
- Emphasis on Value-Based Care

44

UCI Ranking, U.S. News & World Report Best Medical Schools for Research

\$355m

UCI School of Medicine research funding, FY 22-23

277

UCI opened clinical trials, FY 2023-2024

IRVINE'S STRENGTHS

- Global healthcare innovators based in Irvine
- Local business-supported healthcare pathways
- Well-developed medical device supply chain
- Highly regarded medical research program at UCI
- Strong local talent cluster



POTENTIAL RISK FACTORS

- Costly & lengthy FDA approval processes
- Vulnerability to cyber attacks & data breaches
- Regulatory & legislative risk
- Data transparency & privacy legal risks surrounding use of AI

\$10.9M

Average cost of healthcare data breaches, 2023

364,571

Healthcare data records breached daily in the U.S., 2023

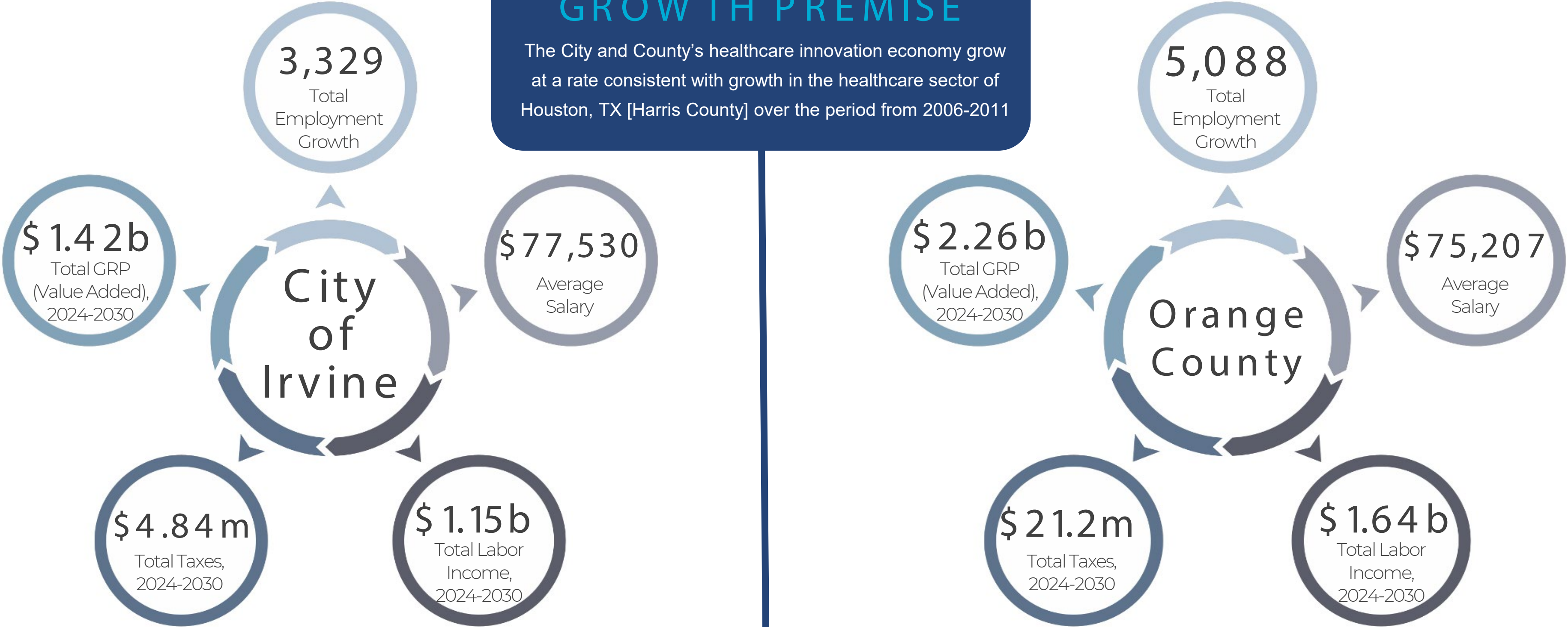
32%

Healthcare industry share of data breaches, 2015-2022

Evolution of Healthcare Innovation

Potential Growth, 2024-2030

GROWTH PREMISE
The City and County's healthcare innovation economy grow at a rate consistent with growth in the healthcare sector of Houston, TX [Harris County] over the period from 2006-2011





Enabling & Creative Technologies

GROWTH PREMISE

Irvine **builds on its legacy** of tech innovation but leans into enabling and creative technologies that (a) enhance productivity across multiple industries, such as AI and quantum computing, and (b) gaming and simulations.

GROWTH DRIVERS

- Sustained growth in cloud computing
- Use cases spanning multiple industries
- AI driving quantum demand

2,917

AI investment deals
in Orange County,
2020-2023

38%

Share of Orange
County's AI-skilled
talent educated in
local schools

\$230

Per capita
investments in AI
R&D in Orange
County

IRVINE'S STRENGTHS

- Strong existing tech & gaming talent base
- Highest concentration of AI skills in Orange County
- Gaming cluster built around Activision Blizzard
- Home of EON Reality, world's largest AI-powered AR/VR immersive library
- Emerging Southern California quantum cluster

VS

POTENTIAL RISK FACTORS

- Insufficient AI investment funding to foster entry in Orange County
- Shortage of workers with AI skills in Orange County
- Vulnerability to cyber attacks & data breaches
- Rising game development costs
- Market saturation in gaming industry

97%

Concentration of
funding in AI
investment in 5 major
companies in Orange
County

740

Games released
in 2023

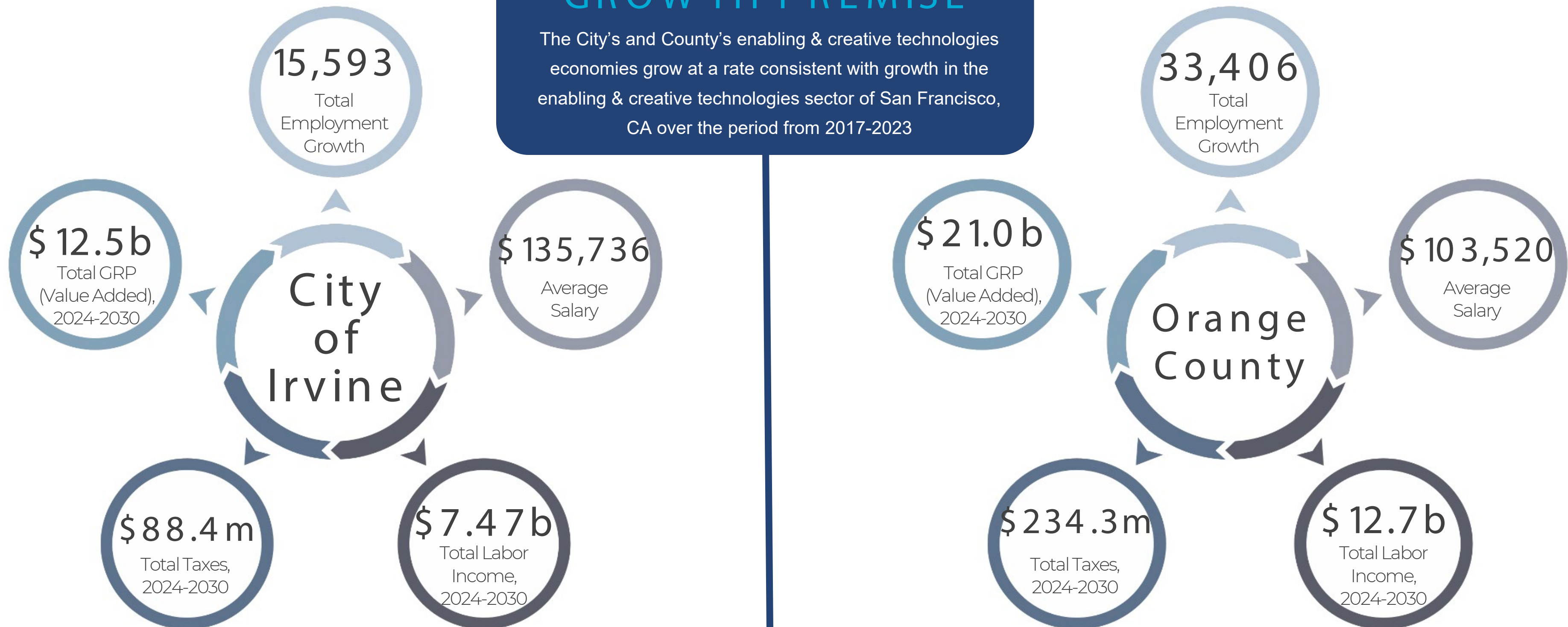
\$1m +

Cost to develop
AAA game (2023)

Enabling & Creative Technologies Potential Growth, 2024-2030

GROWTH PREMISE

The City's and County's enabling & creative technologies economies grow at a rate consistent with growth in the enabling & creative technologies sector of San Francisco, CA over the period from 2017-2023





Next-Generation Defense Technologies

GROWTH PREMISE

Irvine leverages its geographic proximity to major aerospace and defense bases and companies in Southern California, and **builds on its expertise in mobility**, to pursue opportunities in military vehicle electrification and defense & space technologies.

GROWTH DRIVERS

- Escalating geopolitical tensions
- Disruptive defense innovations
- Growing cybersecurity threats
- Resurgence of space exploration initiatives

\$56.2B

Federal defense spending in California, 2022

Nearly 30

Major military installations in California

1.6%

Defense share of California GDP, 2022

IRVINE'S STRENGTHS

- Home of A&D companies (Panasonic Avionics, Parker Aerospace, & Terran Orbital)
- Proximity to Anduril, \$1B defense unicorn
- Proximity to Los Angeles & San Diego County military bases
- UCI inclusion in California DREAMS Superhub
- Skilled mobility workforce

VS

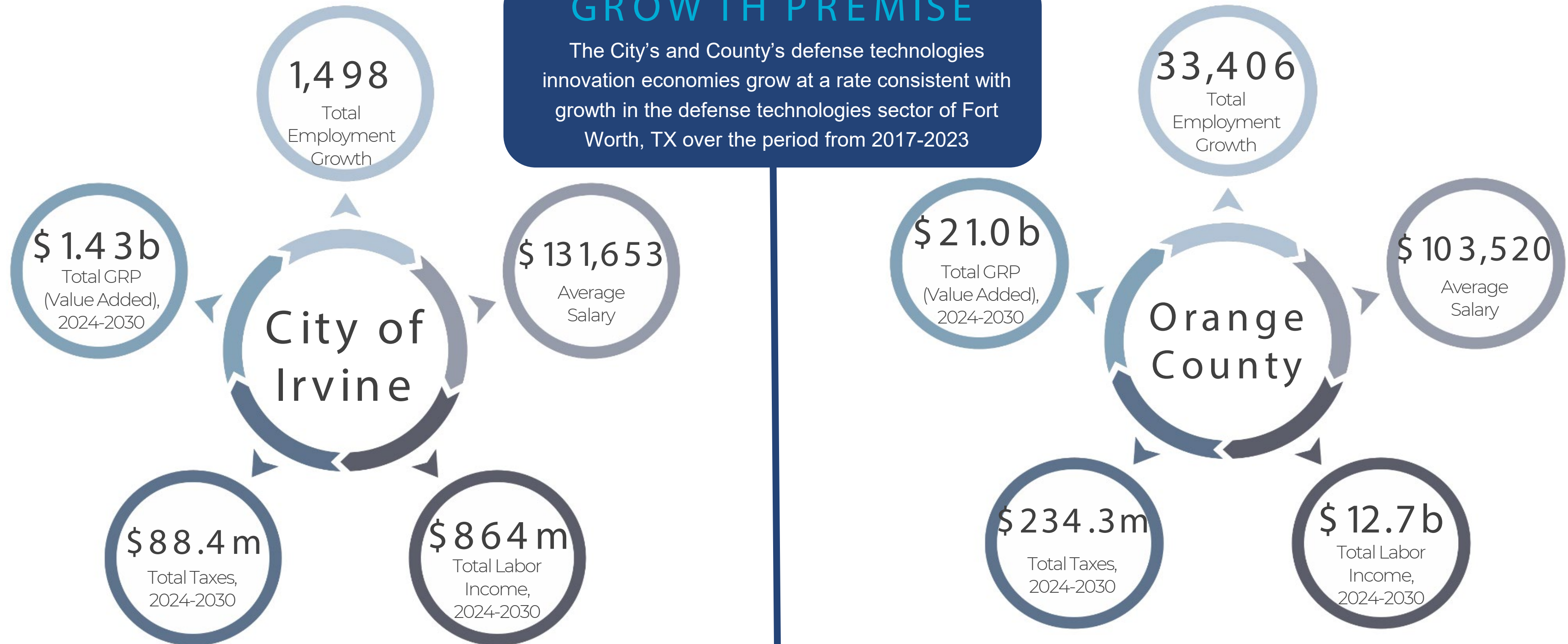
POTENTIAL RISK FACTORS

- Geopolitical & economic volatility
- Dependence on federal funding
- Government contracting experience needed to win contracts
- Potential misalignment of public & private revenue cycles
- Extensive compliance requirements

Defense Technologies Potential Growth, 2024-2030

GROWTH PREMISE

The City's and County's defense technologies innovation economies grow at a rate consistent with growth in the defense technologies sector of Fort Worth, TX over the period from 2017-2023



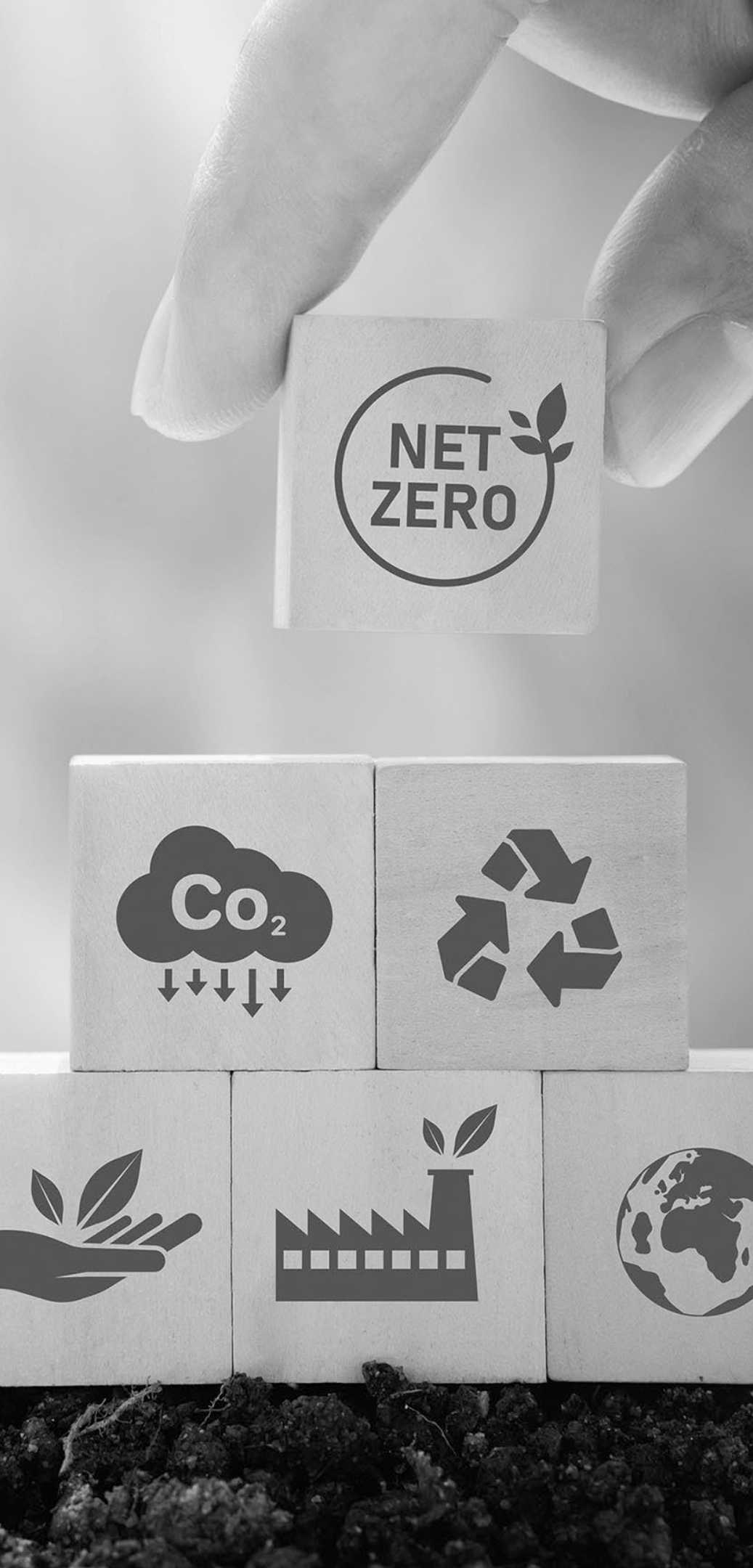
Climate Transition/ Decarbonization

GROWTH PREMISE

Irvine **supports growth of a cleantech industry** focused on innovations supporting the transition to a clean energy economy, such as clean hydrogen, cleantech software, and alternative vehicles and other clean energy electric mobility applications.

GROWTH DRIVERS

- High levels of federal and state funding available
- Clean energy leads new U.S. electricity generation
- Continued cost reductions in cleantech
- 2024 launch of ARCHES, California's hydrogen hub



\$700K

Max early-stage grant funding per awarded entrepreneur via CalSEED

14

Refereed clean energy journal articles published by UCI, 2023

5

Clean energy research initiatives supported by UCI, 2024

IRVINE'S STRENGTHS

- UCI Clean Energy Institute R&D collaboration opportunities
- Proximity to Los Angeles & San Diego innovation hubs
- Eligibility for CalSEED funding
- Eligibility for California sales & use tax exemptions for qualifying investments
- Proximity to incubators in Los Angeles & Riverside

VS

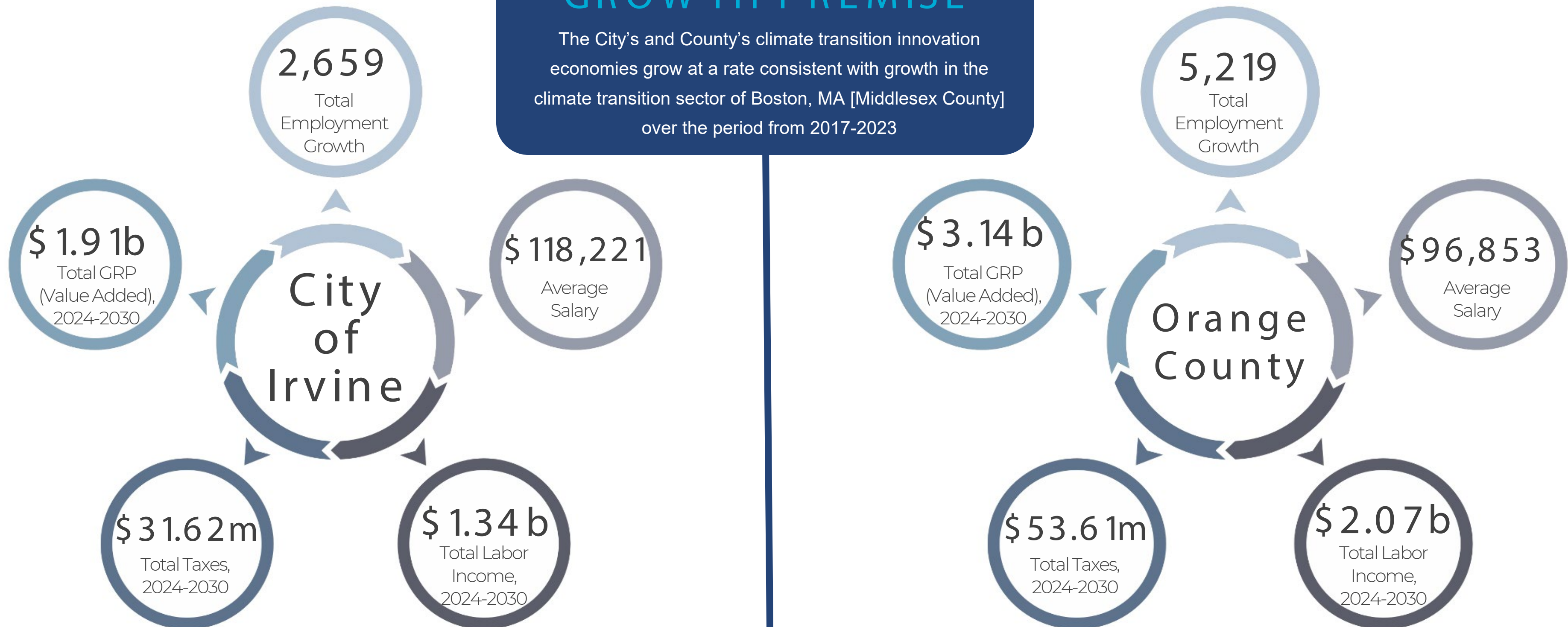
POTENTIAL RISK FACTORS

- Lack of clean energy workforce specialization in Irvine
- Reliance on favorable regulatory regimes
- Dependence on federal funding
- Transmission & storage issues
- Permitting challenges
- Geopolitical risks to supply chains

Climate Transition Potential Growth, 2024-2030

GROWTH PREMISE

The City's and County's climate transition innovation economies grow at a rate consistent with growth in the climate transition sector of Boston, MA [Middlesex County] over the period from 2017-2023





2024 Irvine's Innovation Economy

Thank You!



PHASE 3 FINDINGS CONDENSED