

## TODAY'S PRESENTERS...



**Matt Curtis**, *Smart City Policy Group*



**Chris Nielsen**, *eCab*



**Sarah Garza**, *Workforce Solutions Capital Area*



**Michael Shear**, *Broadband Planning Initiatives*



# Are Smart Cities Healthy Cities?



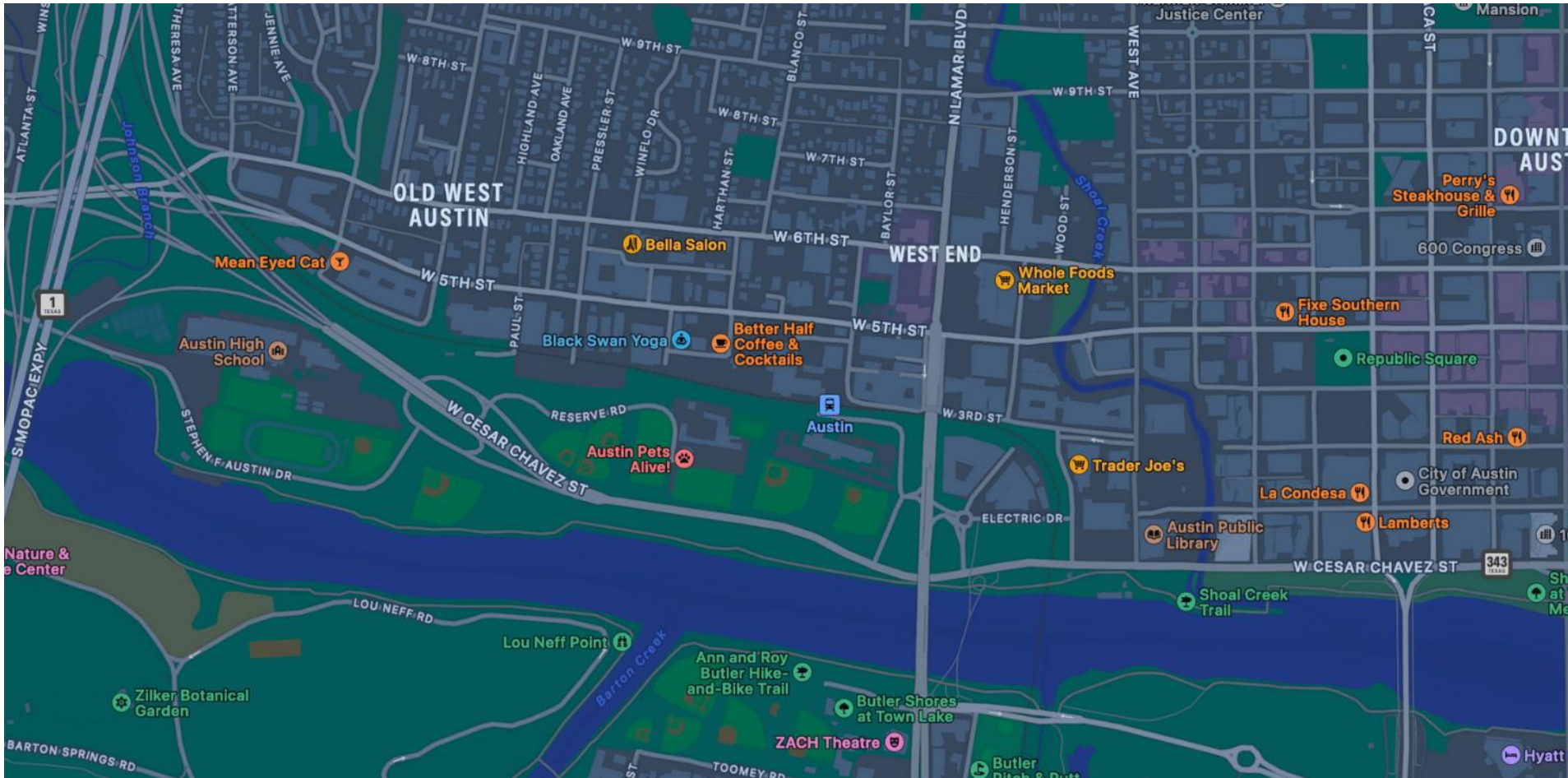


# Our Everyday Environment





# Changing My Surroundings



# My Community Was Active

## One Ton of Fun Group

told by Matt Curtis

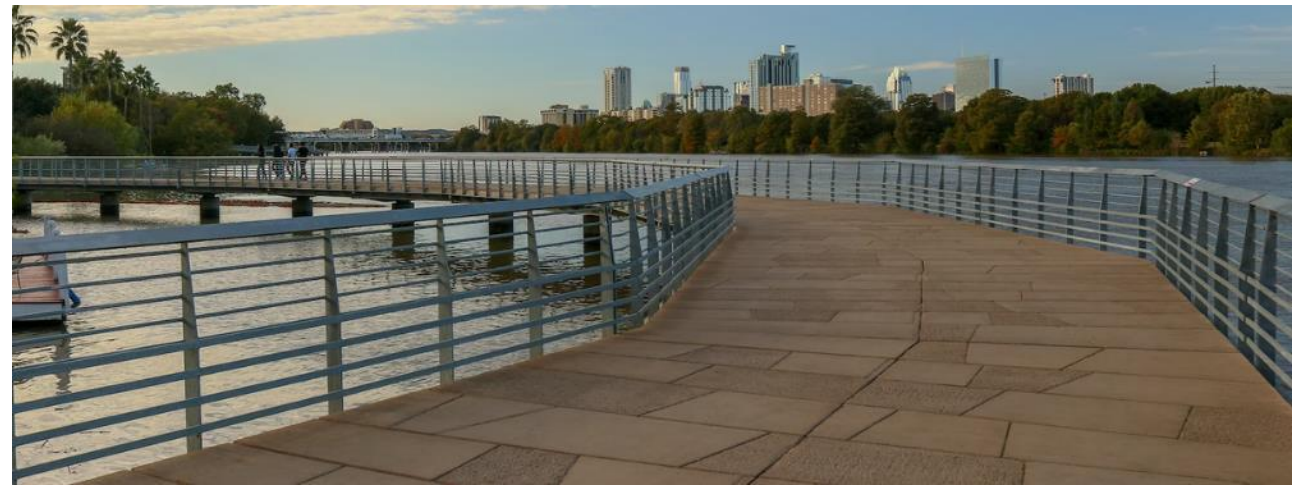


When I hear about people dropping dead of a heart attack at the age of forty, it scares me. After tipping the scale at 437 pounds, I looked at my two young nieces and thought about my own future, and realized how critical it was for me to start making some

lifestyle changes. I'm only thirty-four years old, and I want to be around for at least another thirty-four, for them and for me.



# Austin Built A Better City





# Take Austin's Smart City On The Road



# Discover Multi-Modal



 **Matt Curtis** ...  
Dec 9, 2013 · Brugge, Belgium · 

Bike "Share" in Bruges



 16 4 comments 3 shares

 Like  Comment  Copy  Share



How Does a  
City STAY a  
Smart City?





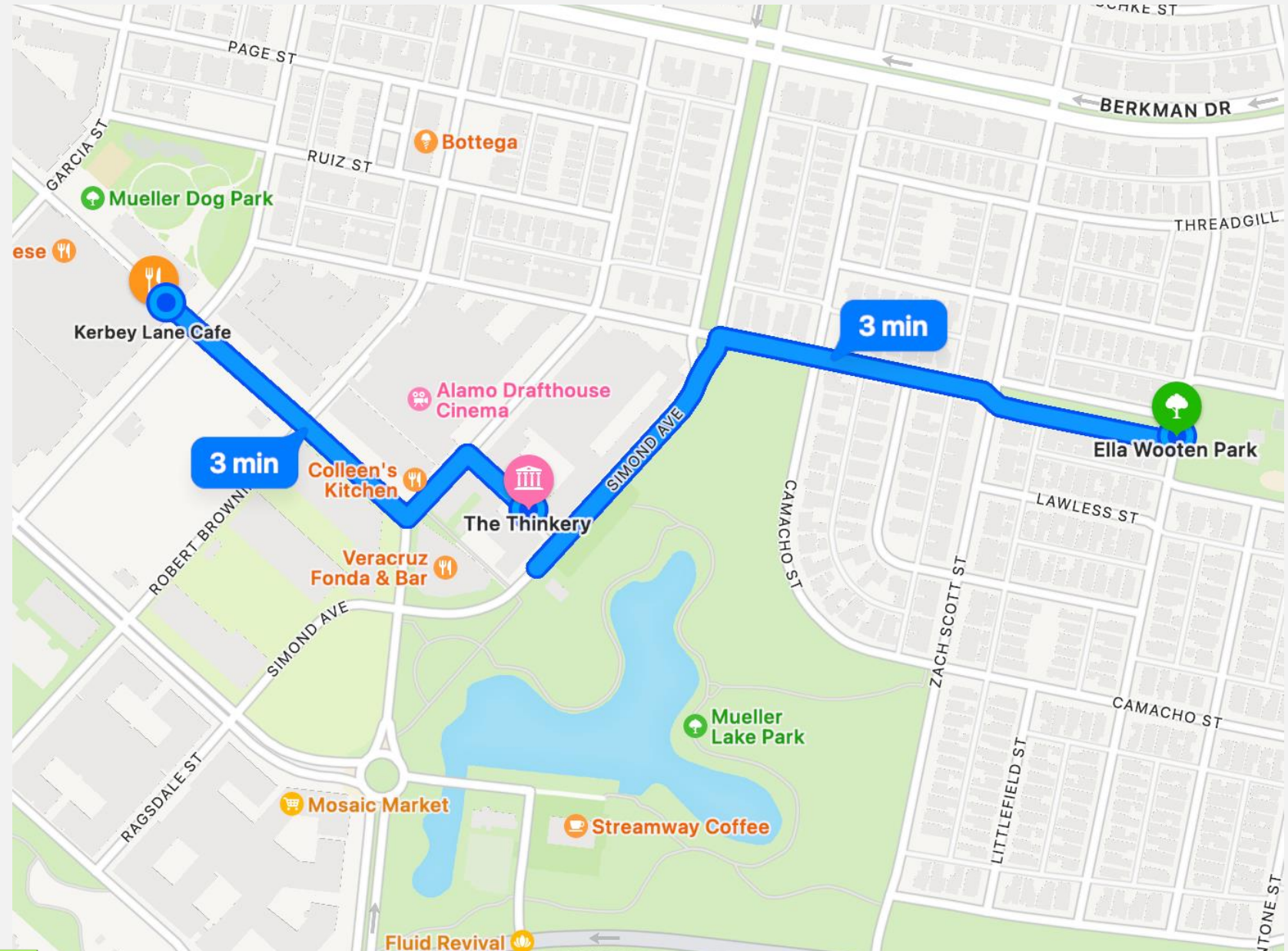
WHO WILL LEAD  
US THROUGH THIS  
MAZE?



# How Are We Going To Get Around?



# Healthy Cultures Walk





# Do We Embrace Innovation?



Do We  
Incentivize  
Emerging  
Solutions?



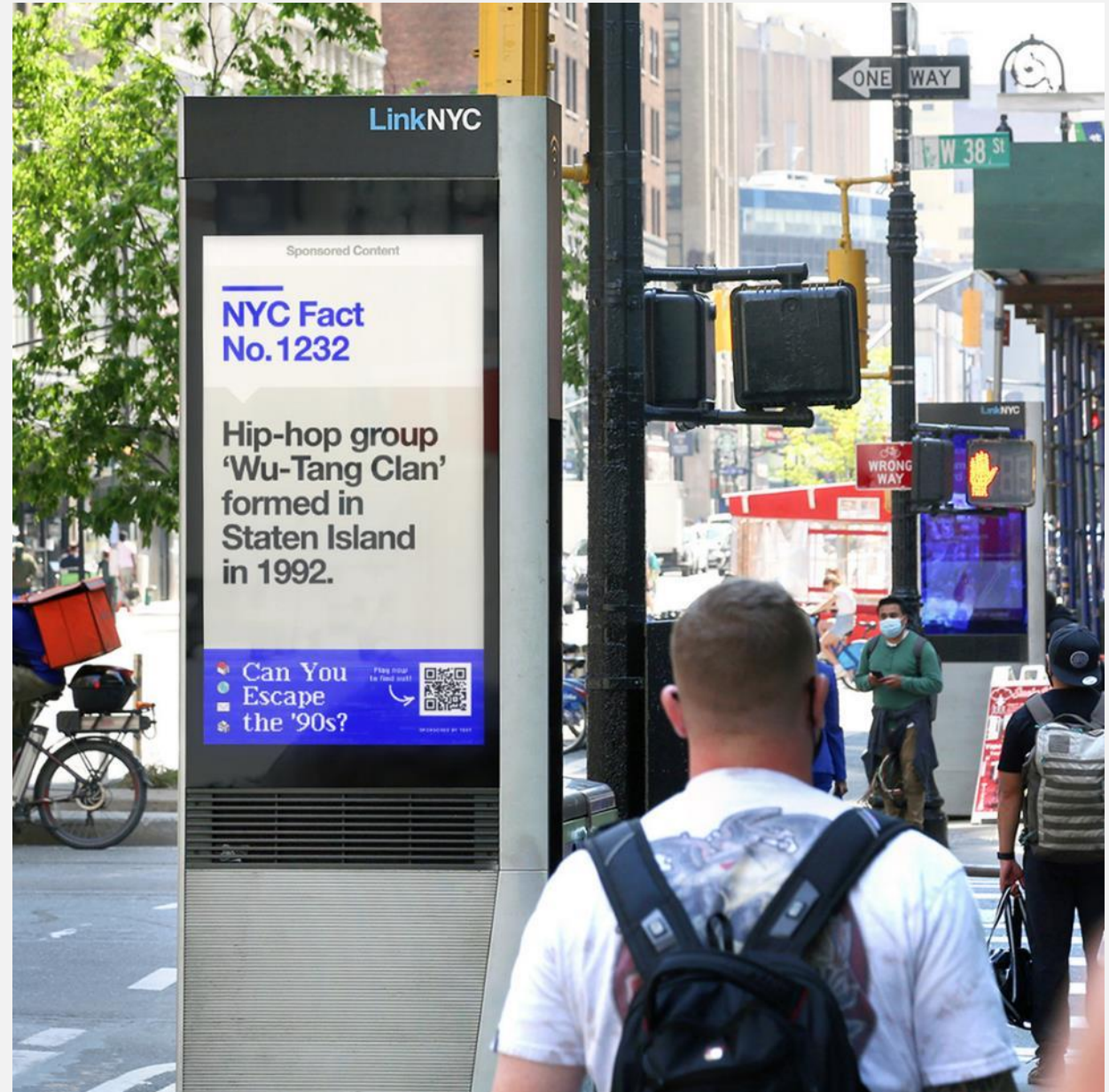


# Is It A System We're Looking For?





# What Gets People To Use The System?



# But What About The People?



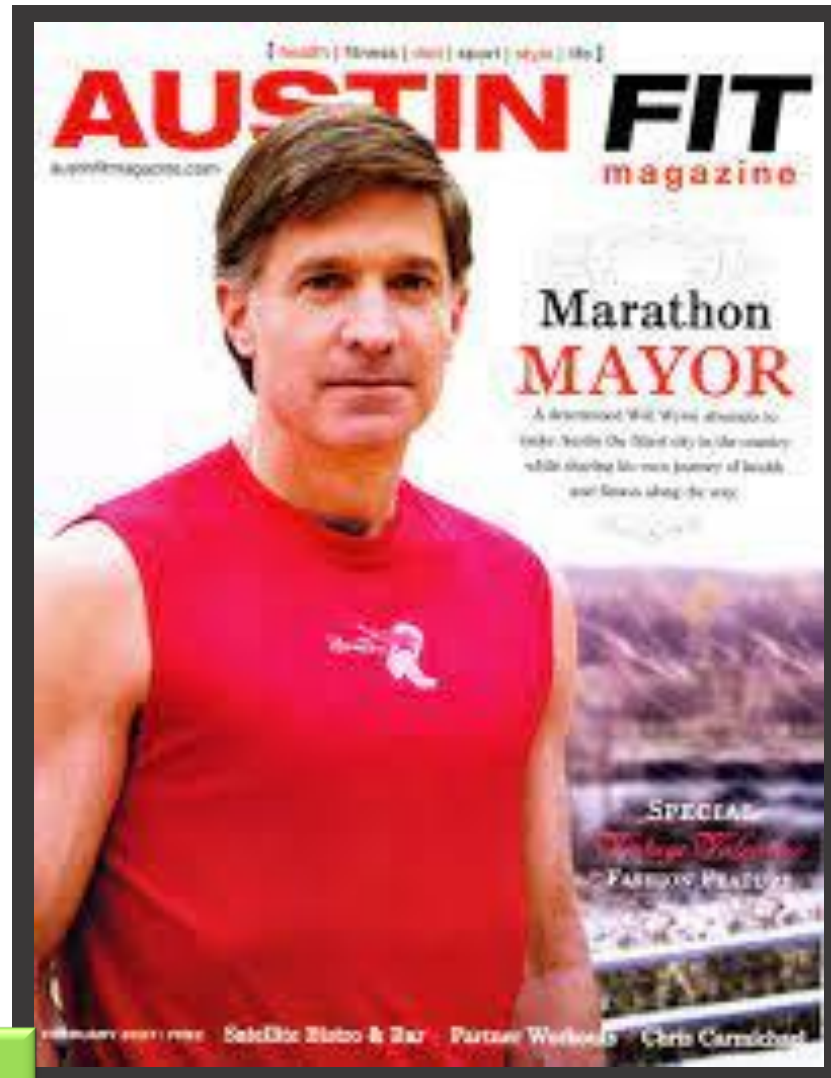


# Are Smart Cities Active Cities?





# Creating A Healthy Smart City



Actively  
Listening,  
Actively  
Hearing



# Losing Half, Winning It All





UP NEXT: SARAH GARZA





CIVICSOL

# Pecha Kucha:

# MOBILITY & INFRASTRUCTURE PARTNERSHIP

November 2023

A proud partner of the [americanjobcenter](#) network

Workforce Solutions Capital Area is an Equal Opportunity Employer/Program. Auxiliary aids and services are available, upon request, to persons with disabilities.  
Relay Texas: 1.800.735.2989 (TDD) / 711 (Voice) · [www.wfscapitalarea.com](http://www.wfscapitalarea.com)



**Job  
Creators**

**Training  
Providers**

**Project  
Sponsors**

**CBO**

**Project  
Connect**

**Airport  
Expansion**

**I-35  
Expansion**

**Tesla  
Gigafactory**







With the investment in transformational regional infrastructure, we can address affordability challenges by creating family-supporting jobs and sustainable career pathways, while improving regional mobility.

## What are we working towards?



**A robust, skilled labor force to deliver generational construction and infrastructure projects**



**Defining economic development opportunities in a new, different way**

# Achievements to Date

## Established Industry Partner Group

Learning from industry to understand M+I workforce needs

## Designated Policy Leadership Group

Getting the right people in the room for policy action

## Announced Partnership to the Public

Garnering support and buy-in for the upcoming action items

## Conducted a SWOT Analysis

Strengths, Weaknesses, Opportunities, and Threats around the M+I sector

## Hosted Industry Focus Groups

Convened stakeholders to gain a deeper understanding of the challenges ahead

## Started Comprehensive Research Study

Started significant M+I industry study and long-range forecast

## Launched Two Action Groups

Addressing policy areas around contracts and non-traditional populations

## Held M+I Workforce Summit

Convened stakeholders to share findings and brainstorm actions



# In 2022, 222,646 make up the region's M+I labor pool.



## Operations & Supervision

64,197  
employed

\$95,341  
avg. ann. salary



## Skilled Trades

50,029  
employed

\$47,780  
avg. ann. salary



## General Construction

42,799  
employed

\$46,974  
avg. ann. salary



## Fleet Repair & Maintenance

35,314  
employed

\$46,717  
avg. ann. salary



## Frontline Mobility

30,306  
employed

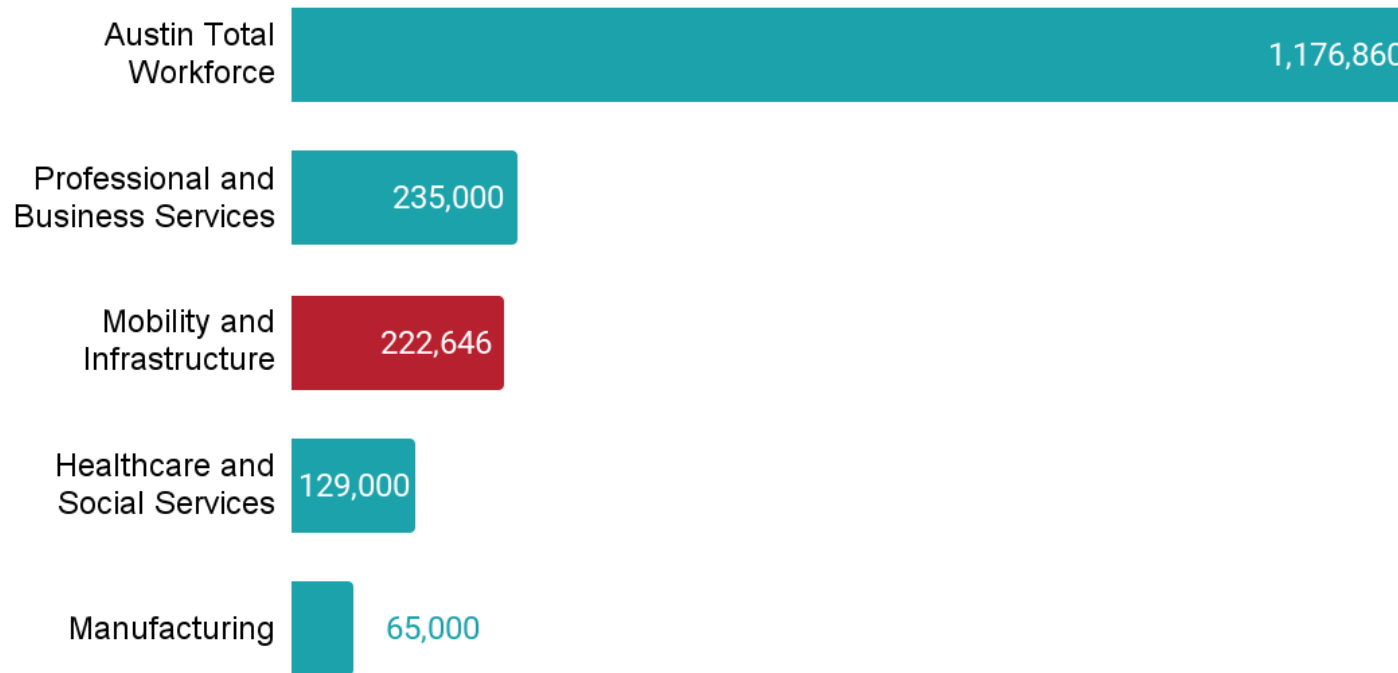
\$43,016  
avg. ann. salary

Sources: Lightcast for employment data, as of 2022Q4; Lightcast for wage data, as of 2022Q4.

Note: The average annual salary in Austin is \$63,890 (BLS, 2023). The prevailing wage is [defined as \\$22/hr.](#) or approximately \$45,760 annually

# The region's M+I sector is among its largest employment base.

## Austin Labor Force Comparison





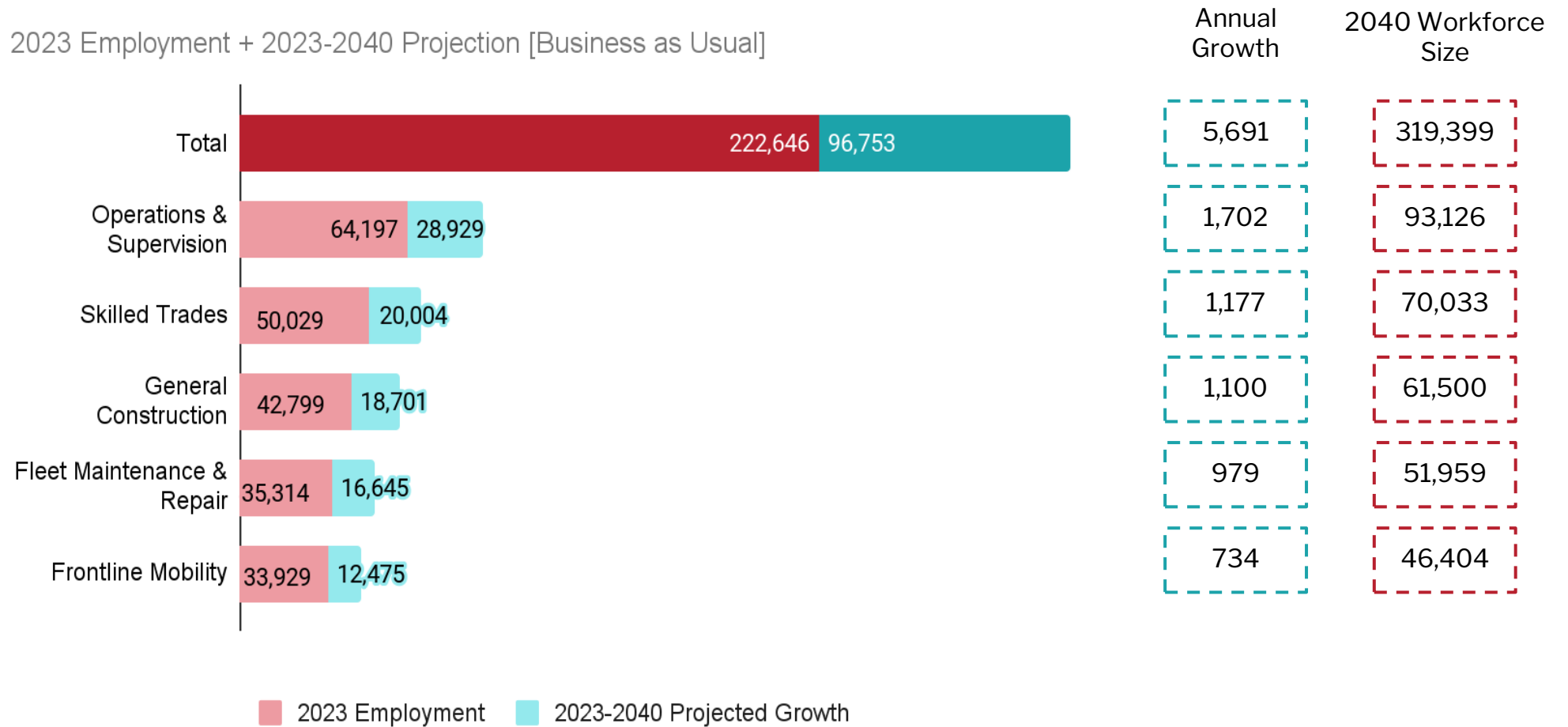
# And, we already face a skill deficit.

Location Quotient\*, 2023

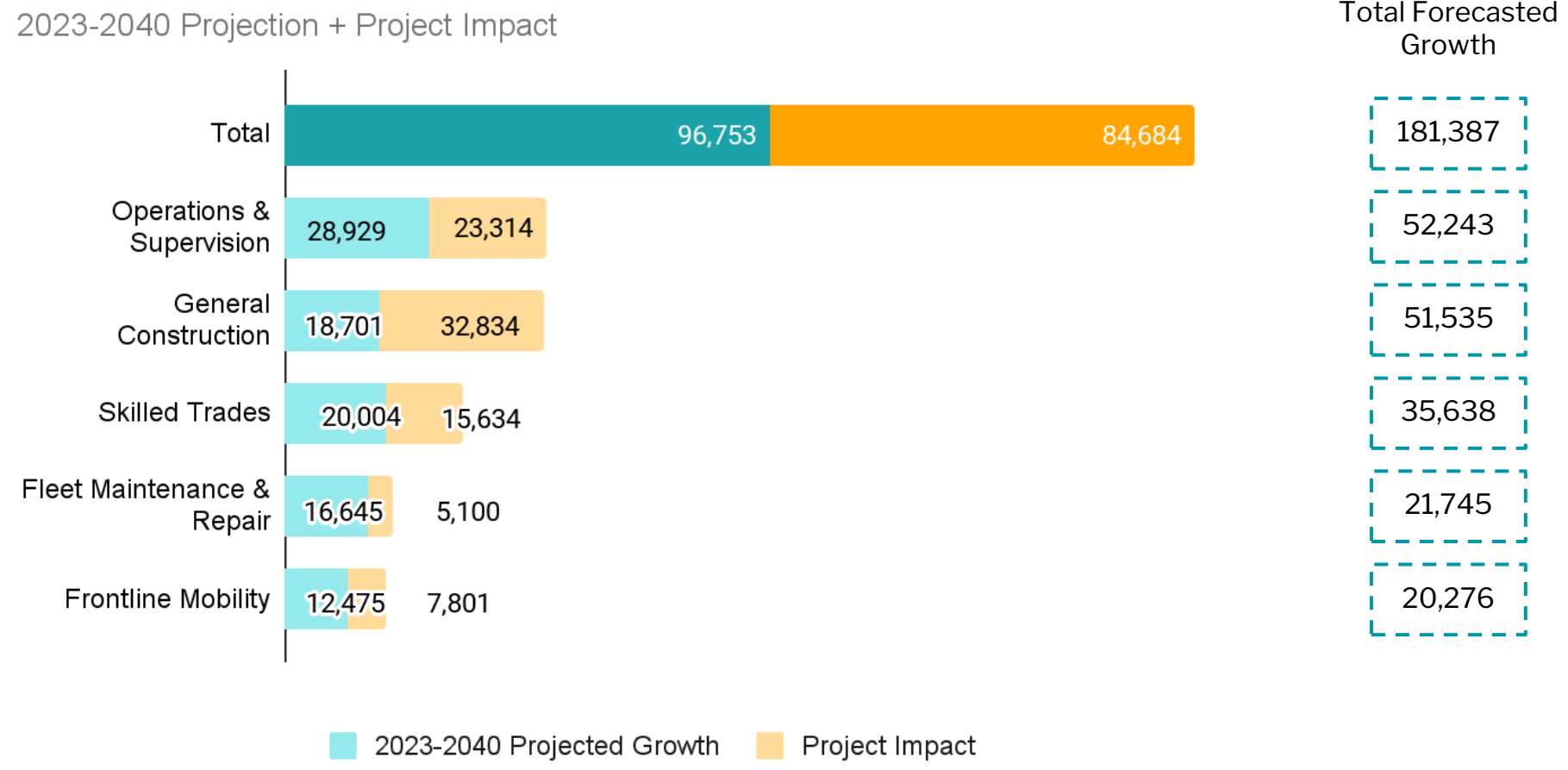


- Metro Austin's share of Frontline Mobility occupations is 23% smaller than a region its size
- 19% smaller for Skilled Trades
- 18% smaller for Fleet Maintenance and Repair

# Even without pending capital projects, the region's M+I workforce will add 96,700 workers by 2040 – a 38% increase.



# With regional capital projects added, M+I growth will top 181,000 – an 81% increase from 2023.

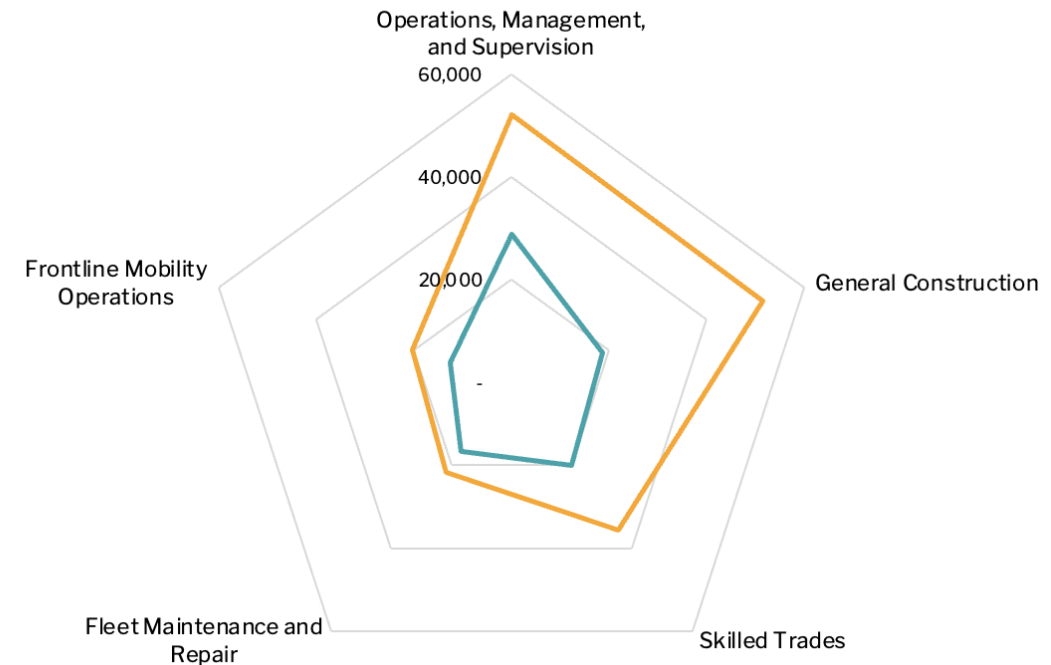


Source: Lightcast Calculations; CivicSol Analysis



# This will be bring supercharged growth, far exceeding business as usual projections.

Occupations	2023-2040 Projection	2023-2040 Projection + Project Impact
<b>Total</b>	<b>43%</b>	<b>81%</b>
Operations, Management, and Supervision	45%	81%
General Construction	44%	120%
Skilled Trades	40%	71%
Fleet Maintenance and Repair	47%	62%
Frontline Mobility Operations	41%	67%

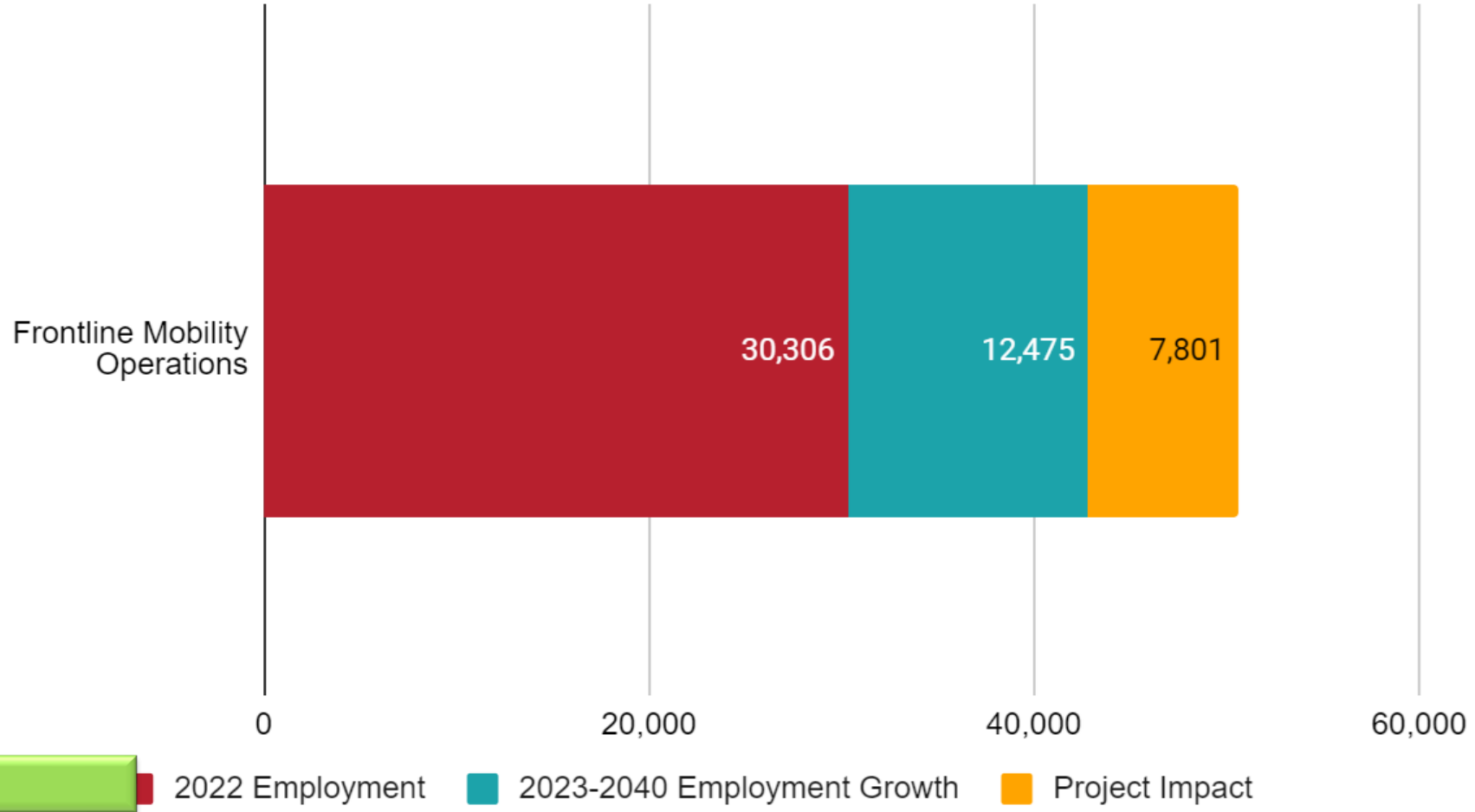


# By 2040, Frontline Mobility Operations job opportunities are projected to increase by 67%, adding 20,276 new jobs.

**50,583**  
total jobs by 2040

**1,126**  
job opportunities  
per year, on  
average

Frontline Mobility Operations: 2023-2040 Projection + Project Impact

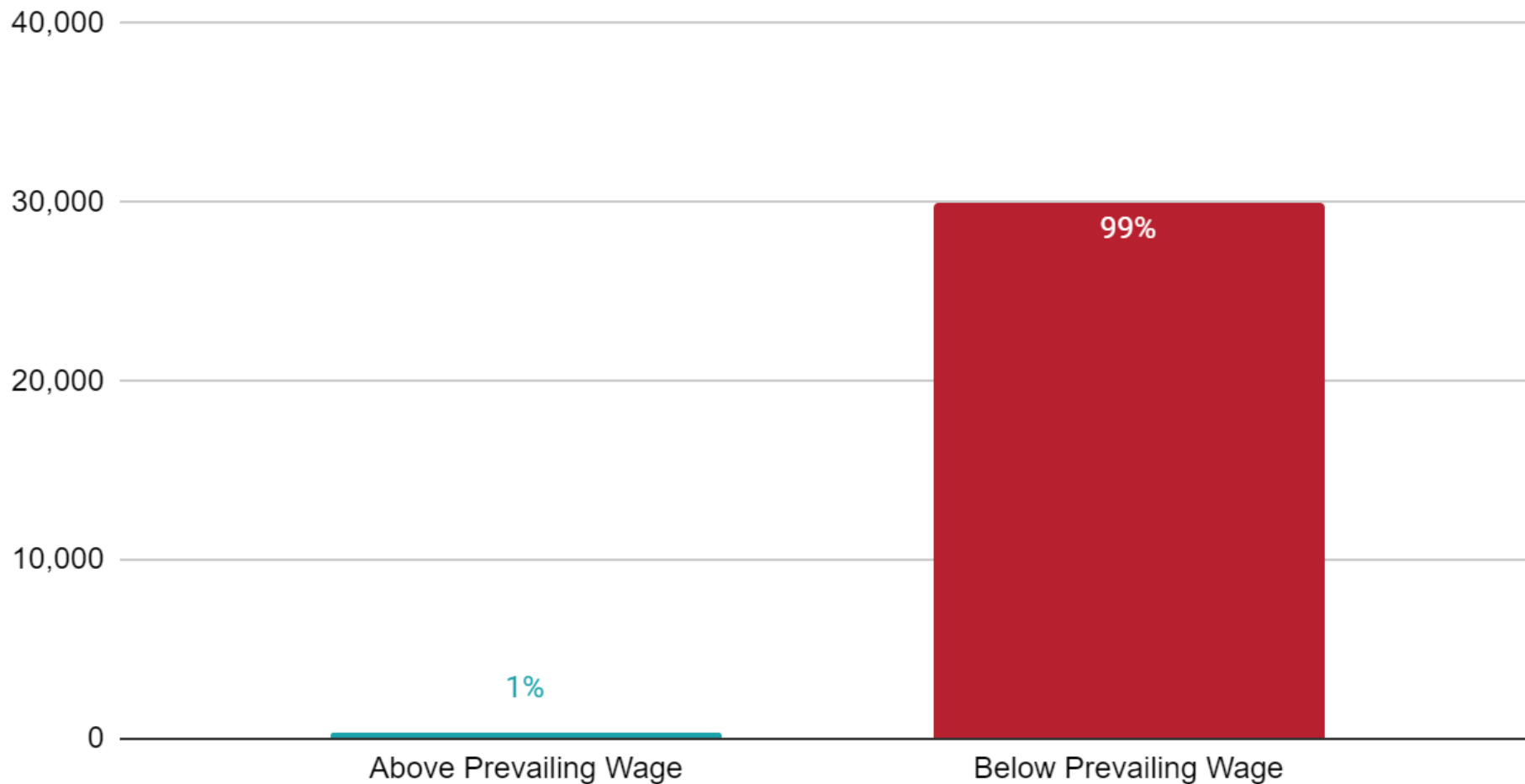


Source: Lightcast Calculations

# Almost none of the Frontline Mobility Operations jobs pay above the prevailing wage

**Noteworthy: In January 2022, CapMetro increased starting pay for bus drivers from \$17.50/hour to \$22/hour.**

Frontline Mobility Operations: Employment Above and Below Prevailing Wage (\$22/hr), 2022



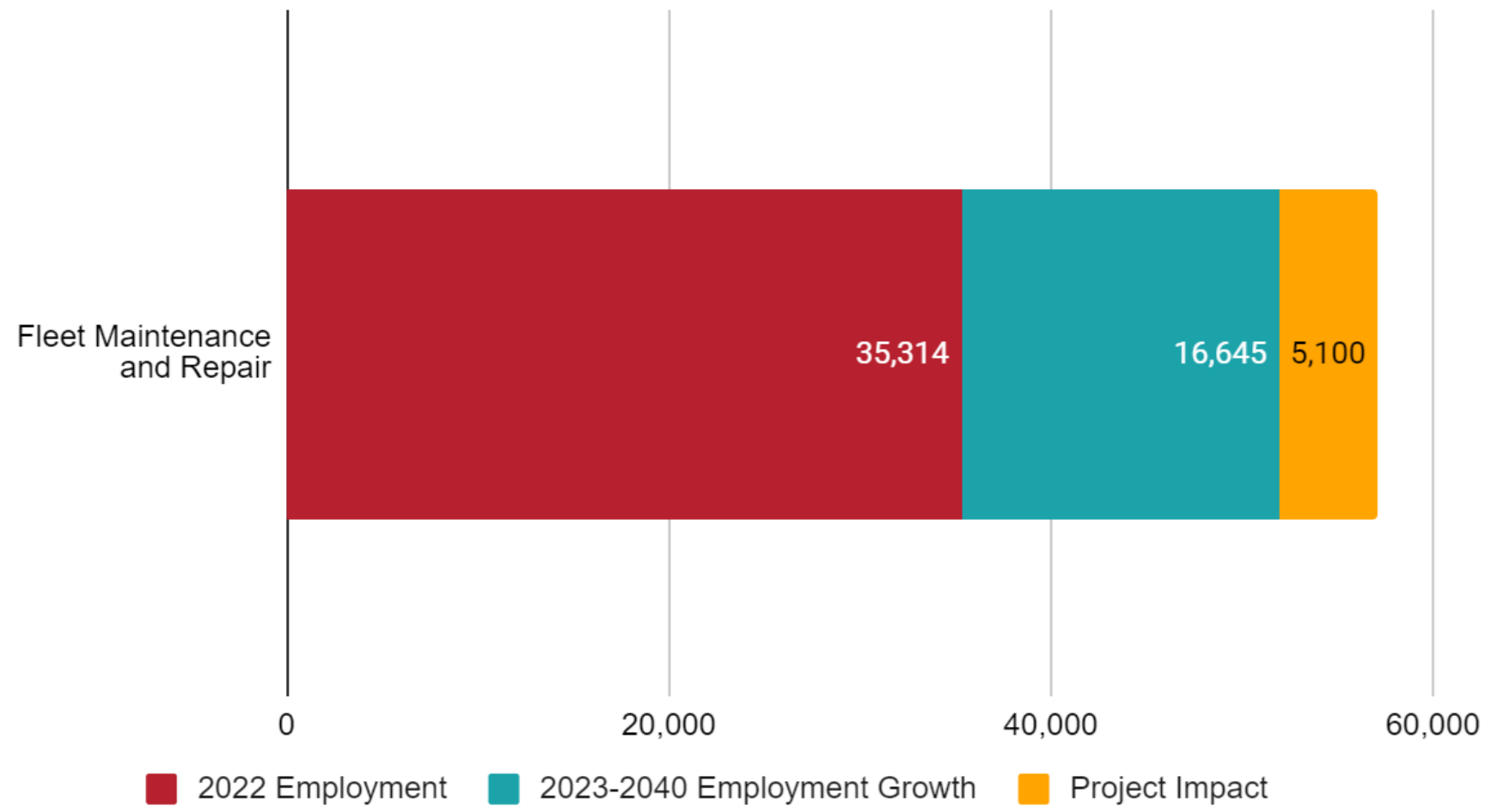


# By 2040, Fleet Maintenance and Repair job opportunities are projected to increase by 62%, adding 21,745 new jobs.

Fleet Maintenance and Repair: 2023-2040 Projection + Project Impact

**57,059**  
total jobs by 2040

**1,208**  
job opportunities  
per year, on  
average



# Wages are pulled down by General Maintenance Workers, who are within 10% of the prevailing wage but make up 35% of the group.

## Fleet Maintenance and Repair: Occupations Below the Prevailing Wage

Occupation	Count	Percentage of Group	Wage	Percentage of Prevailing Wage
Maintenance and Repair Workers, General	12,256	35%	\$20.05	9%
Industrial Truck and Tractor Operators	4,741	13%	\$18.81	14%
Miscellaneous Installation, Maintenance, and Repair Workers	3,043	9%	\$19.53	11%
Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	1,093	3%	\$15.52	29%

Minimum 500 jobs in 2022

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<b>1.</b>	<b>Incentivize</b>	Build economic development programs around M+I workforce development
<b>2.</b>	<b>Recruiting</b>	Modernize and invest in M+I skill training with an Infrastructure Academy
<b>3.</b>	<b>Pipeline</b>	Broaden the talent pipeline through reimagined recruitment efforts and stronger connections

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**4.**

## **Harmonize**

Rethink contracts to increase flexibility and match the growing demand

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**5.**

## **Coordination**

Align Austin and San Antonio efforts in the M+I industry to benefit the mega region.

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**6.**

## **Funding**

Identify federal and state funding streams to support sustainable training initiatives

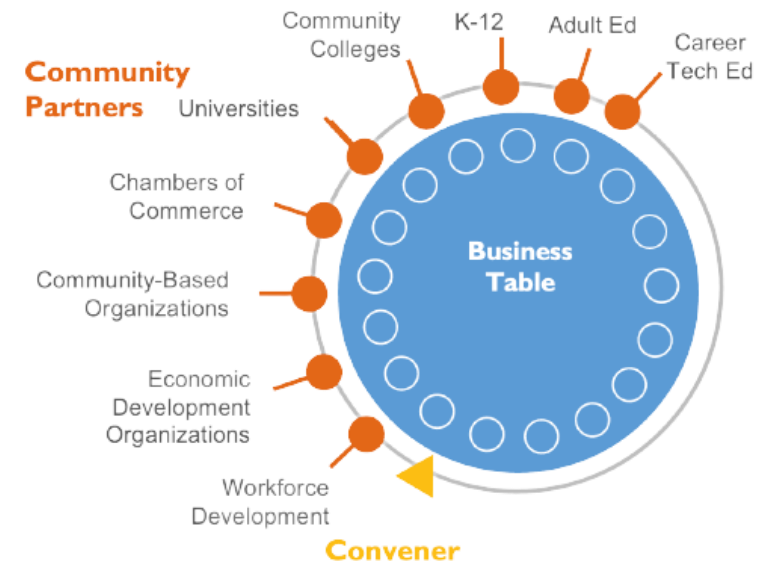
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## Doing Business Together

Comprised of over 140 job creators, talent providers, community engagement groups and project sponsors. The partnership leads in the development of a diverse Central Texas M+I workforce, united in its commitment to align and collaborate on leveraging resources for the benefit of the whole community.



Sector Partnerships rely on industry participation because you are the driver. Being industry led means you guide the priority action items and ensure the goals are accomplished through shared work. They primarily focus on the education and workforce training needs of an industry, but they can also focus on other issues related to an industry's competitiveness.







UP NEXT: CHRIS NIELSEN



## **That D\*\*\* Cab Company**

A brief history of the  
scrappiest company in  
Texas





2008



# CHRIS NIELSEN

FOR CITY COUNCIL



2009-2010

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## NEWS

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# City Hall Hustle: Low-Speed Ahead!

Council finally comes around on a pilot program for electric cabs

BY WELLS DUNBAR, FRI., OCT. 14, 2011

 Share 0

 Tweet

 print

 write a letter

With apologies to *Drive*: Think of a fraught course packed with hairpin curves, and quite honestly, the last vehicle you picture is an open-air, *low-speed electric vehicle* more akin to a golf cart than a Mini Cooper.

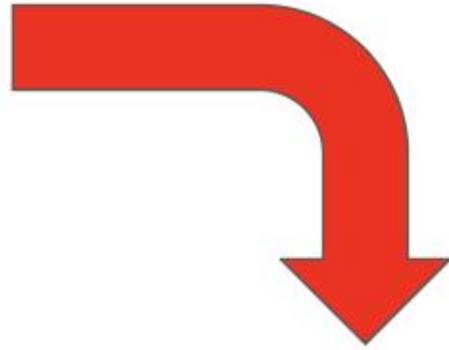
It's kinda hard to picture **Ryan Gosling** brooding prettily as he motors at 20 miles an hour down Congress Avenue.

But at City Hall, "the world's first low-speed vehicle chase," as put by one of its main participants, **Chris Nielsen**, may finally be drawing to a close, as City Council acted last week to approve a pilot program for the vehicles after a long, drawn-out, occasionally bitter clash over how to harness their utility.





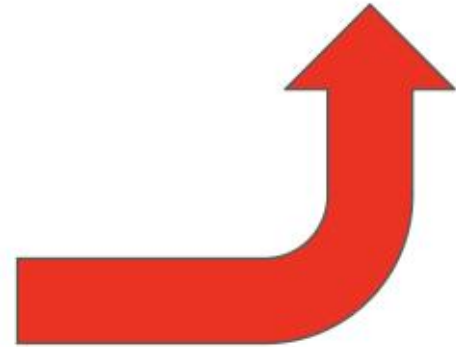
2012

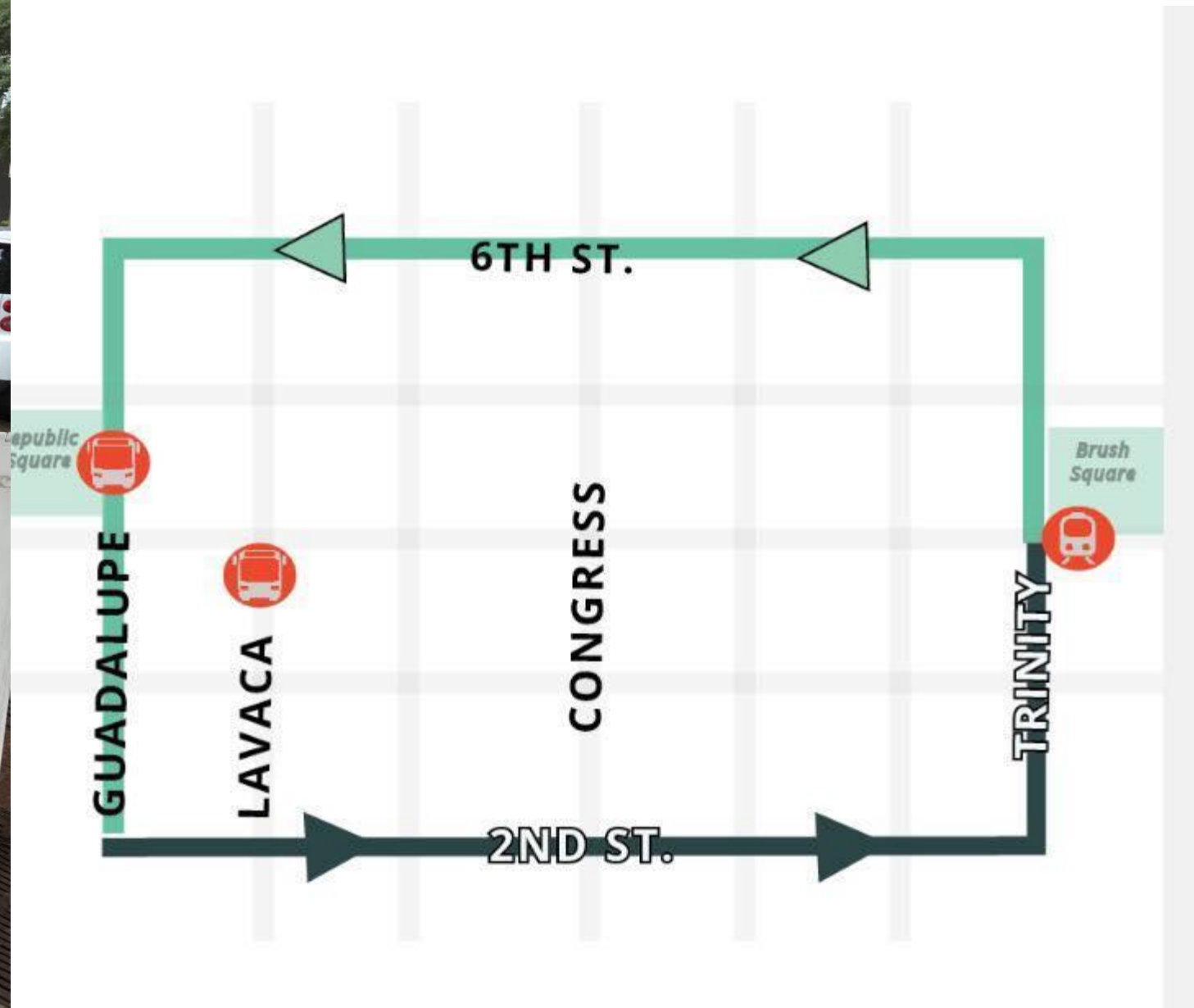


2014



2013





2015





2016





2017





2018





2019





2020 (2 weeks before lockdown)





2020 (lockdown)





2020 (first operations in 7 months!!)





02/2021





10/01/2021







10/04/2021



**NEW  
NEW  
NEW**



**SAN MARCOS**

Get Around Downtown

# NEW HOURS

**MON TUES WED 7am - 11pm**

**LATE NIGHT Thurs + Fri 7am - 3am**

**Saturday MORNING 9am - 1pm**

**IT'S  
FREE!**



**NEW  
NEW  
NEW**



**SAN MARCOS**

Get Around Downtown

# NEW ROUTE

**Now dropping off and picking up:**

- Cheatham St.
- San Antonio St
- Zelicks
- Plaza Park
- Jo's Cafe

**IT'S  
FREE!**



**VISIT [tinyurl.com/SMTXeCAB](https://tinyurl.com/SMTXeCAB) for new map !**





2023





# INTELLIGENT INFRASTRUCTURE ECONOMIC ZONE

**AUTONOMOUS MOBILITY ZONES**

**DISTRIBUTED WORK CENTERS**

**PUBLIC SAFETY & RESPONSE**



## NEW MOBILITY:

- 1,000 SHUTTLES
- ON-DEMAND
- MULTI-MODAL
- DISTRIBUTED
- DOOR-TO-DOOR

# wæev



**CONTROL**

**OPERATE**

**MANAGE**



**ONREL**  
NATIONAL RENEWABLE ENERGY LABORATORY



**PARKMYFLEET**  
Your Fleet Our Care

**PRESAGIS**



**AUTONOMY INSTITUTE**



## - AUTONOMOUS MOBILITY DISTRICTS -

2024

UP NEXT: MICHAEL SHEAR





# Austin's Success is also its Challenge – Rapid Growth

Michael Shear  
CEO

Strategic Office Networks, LLC  
Advisor – Autonomy Institute  
November 30, 2023



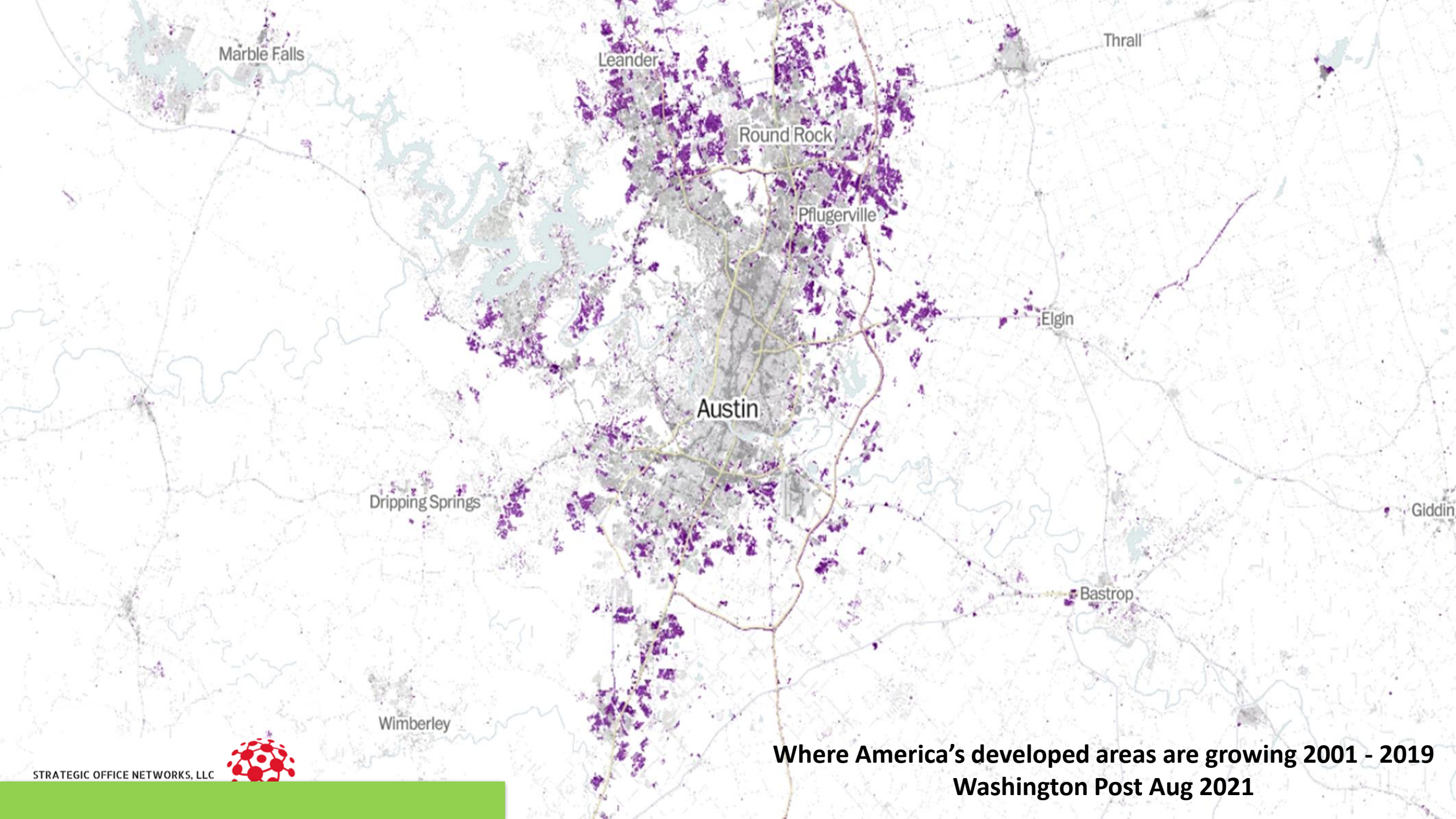
movability

“The totality is not, as it were, a mere heap, but the whole is something besides the parts; there is a cause.”

Aristotle





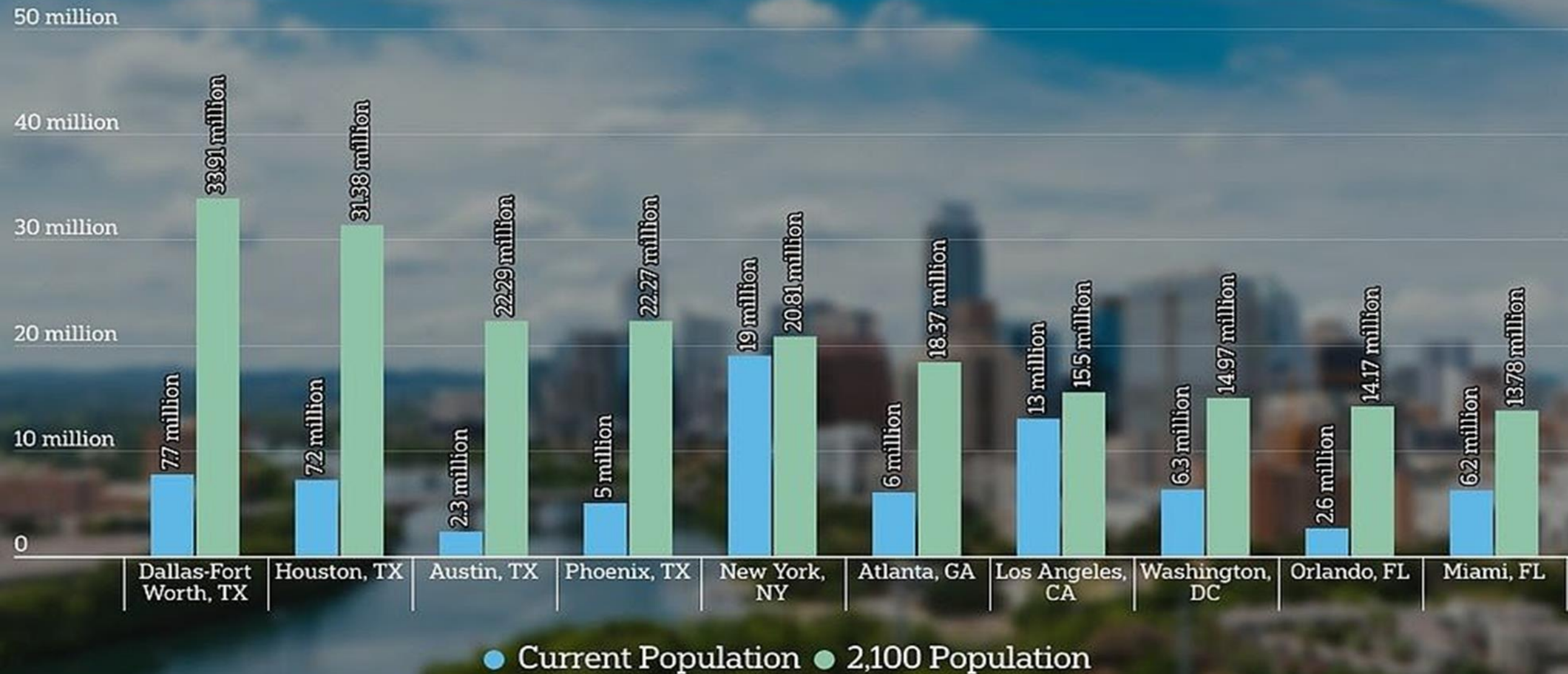


**Where America's developed areas are growing 2001 - 2019**  
**Washington Post Aug 2021**





# Texas poised to become the most populous state in US



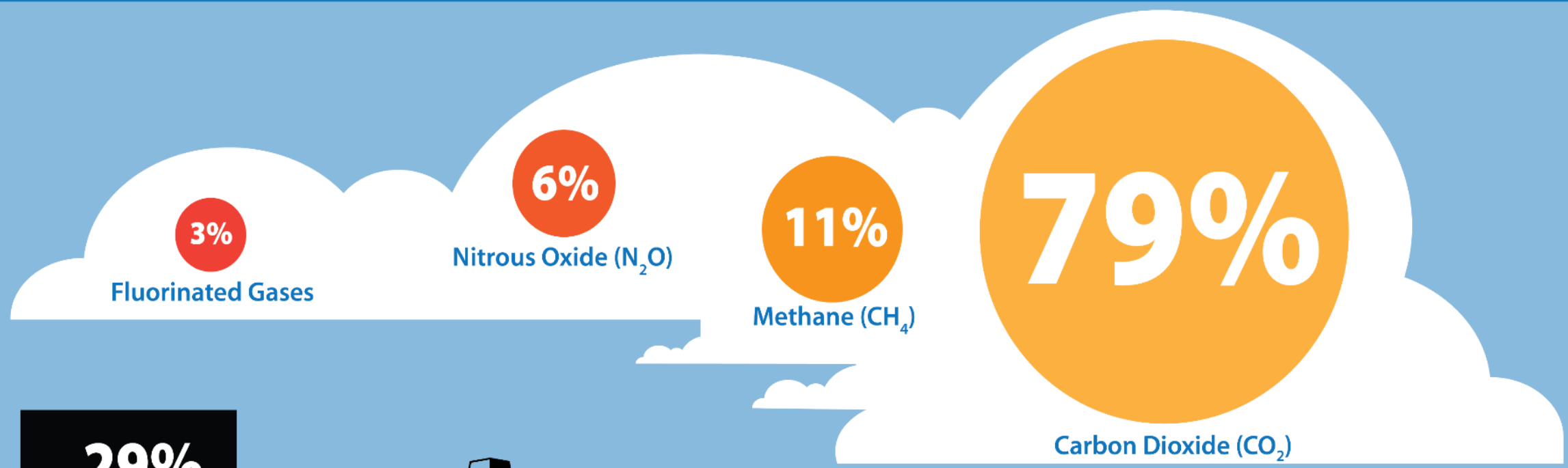




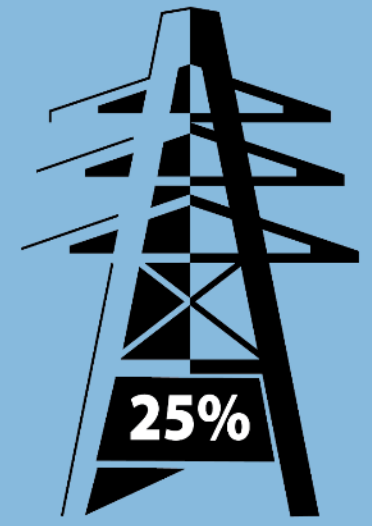


U.S. Greenhouse Gas Emissions in 2021\*

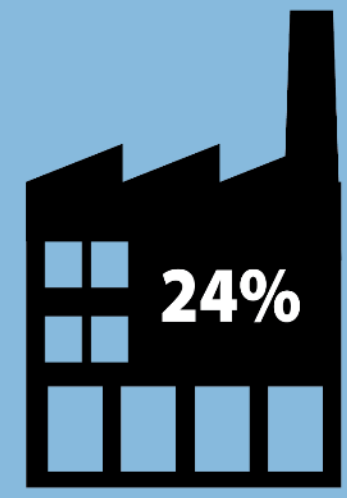
Total U.S. Greenhouse Gas Emissions by Economic Sector in 2021\*



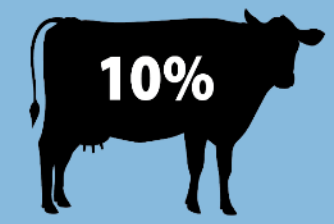
Transportation



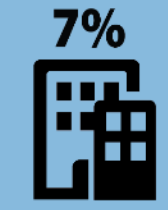
Electric Power Industry



Industry



Agriculture

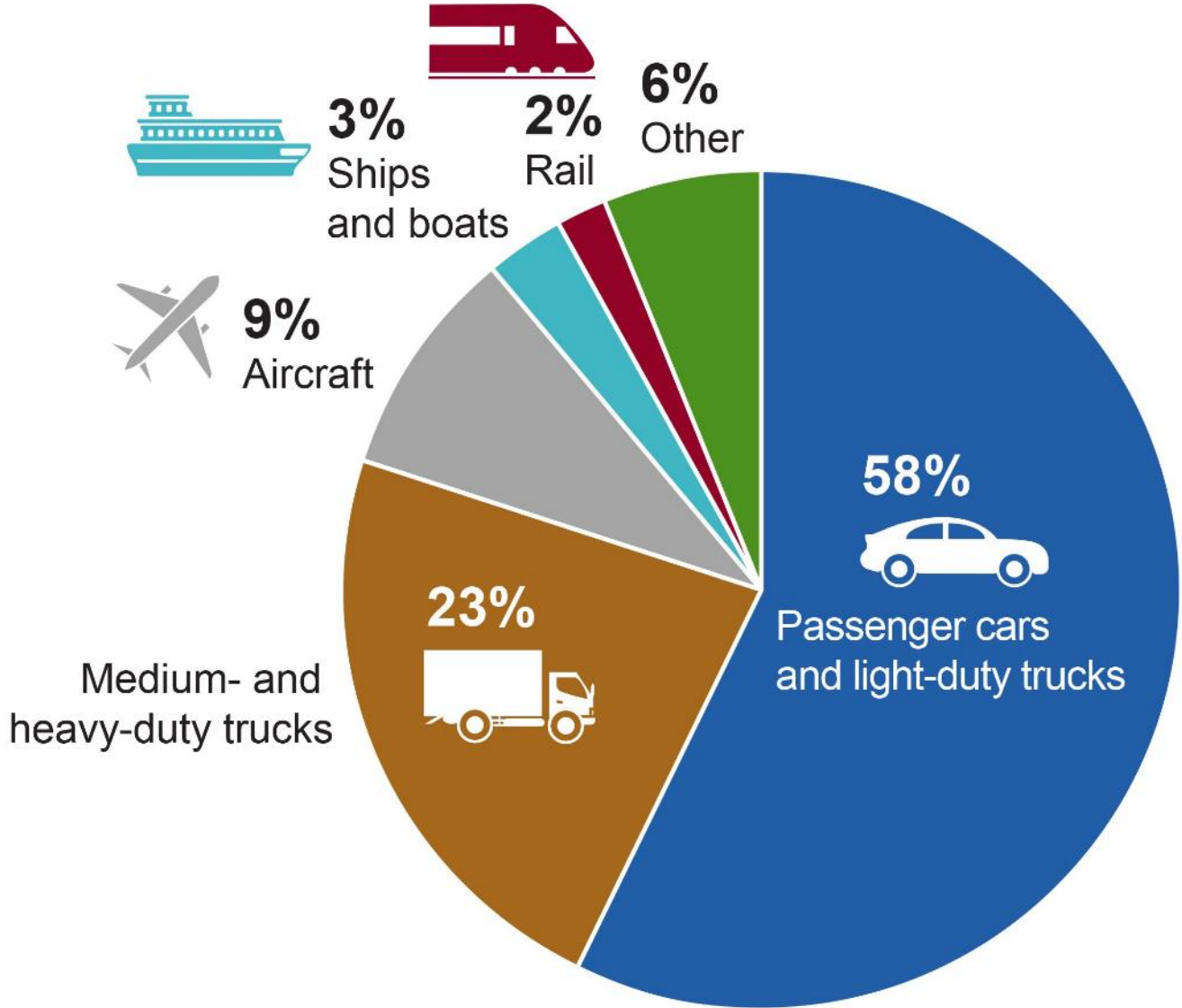


Commercial



Residential

# 2021 Greenhouse Gas Emissions from US Domestic Transportation by Mode



Between 1990 and 2021, transportation greenhouse gas emissions rose by **about 19%**.

This rise is mainly attributed to an increase in vehicle miles traveled by passenger cars and all truck types.



Final Report:  
Development of Policy on the  
Telecommunications-Transportation  
Tradeoff – December 1974

Research Applied to National Needs  
(RANN) program of the National  
Science Foundation

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**The**  
**Telecommunications-**  
**Transportation**  
**Tradeoff**  
*Options for Tomorrow*

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**Jack M. Nilles**  
and  
**F. Roy Carlson, Jr.**  
**Paul Gray**  
**Gerhard J. Hanneman**



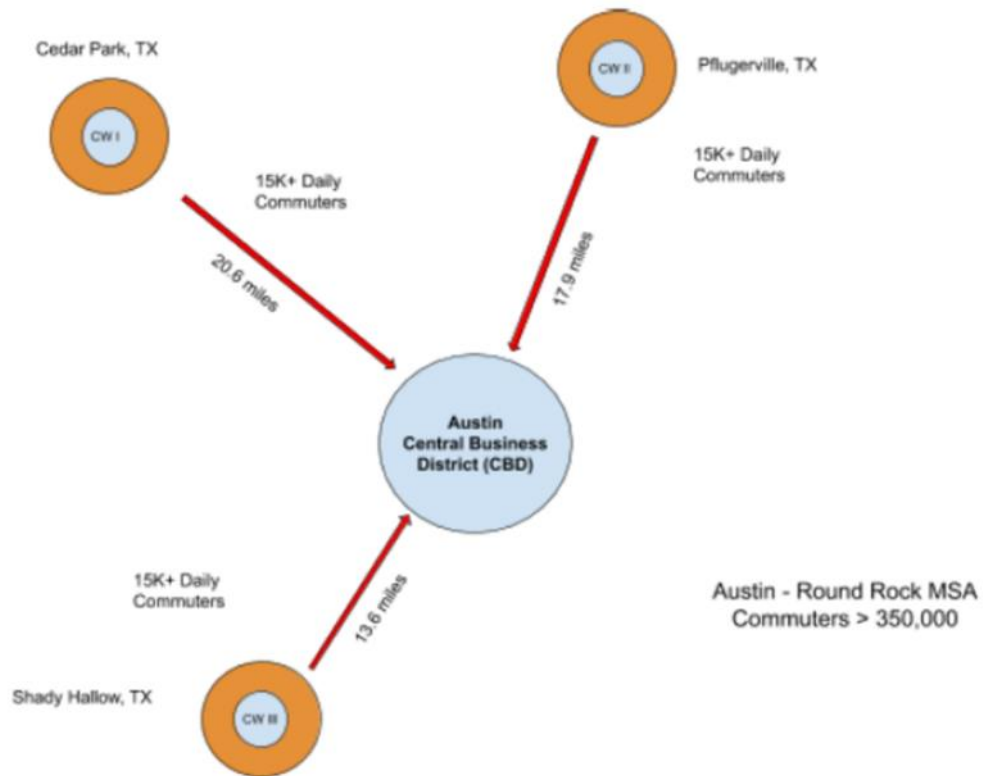


# NSF Competitions

## Civic Innovation Challenge – 2019

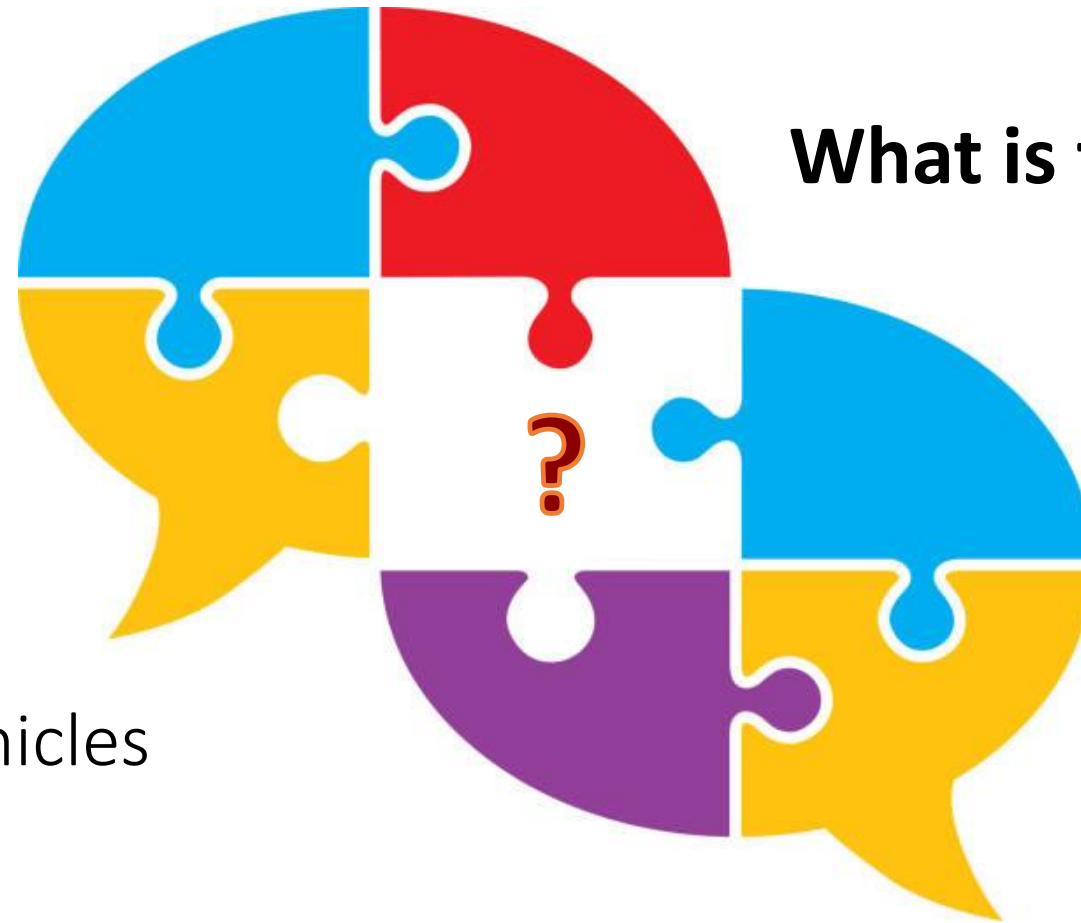
## Regional Innovation Engines - 2022

# Economic Impact Assessment



	Pflugerville	Cedar Park	Shady Hollow	Estimated MSA Level Savings
Distance Round Trip to CBD in Miles	35.8	41.2	27.2	15
Original Commute Time to CBD Round Trip	78	96	70	60
Total Vehicles	12,000	12,000	12,000	280,000
Participation Ratio in CW (Model Assumption)	10%	10%	10%	10%
Travelers From Cluster Area that continue to commute to Central Business District (after CW construction)	10,800	10,800	10,800	252,000
Participating Travelers From Cluster Area to Local CW (Reduction in CBD travellers)	1,200	1,200	1,200	28,000
Reduction in Total Miles Traveled	42,960	49,440	32,640	420,000
Reduction in Total Minutes Traveled	93,600	115,200	84,000	1,680,000
Reduction in External Social Congestion Cost	\$7,956	\$9,792	\$7,140	\$142,800
Reduction in Total Opportunity Cost of Travel Time (Lost Wages)	\$57,564	\$70,848	\$51,660	\$1,033,200
Reduction in Environmental Costs (Pollution + Emissions)	\$687	\$791	\$522	\$6,720
Reduction in Social Cost of Traffic Accidents	\$6,014	\$6,922	\$4,570	\$58,800
<b>Reduction in Total Daily Costs</b>	<b>\$64,266</b>	<b>\$78,561</b>	<b>\$56,752</b>	<b>\$1,098,720</b>
<b>Reduction in Total Annual Costs</b>	<b>\$16,709,098</b>	<b>\$20,425,766</b>	<b>\$14,755,478</b>	<b>\$285,667,200</b>

# NEW TECHNOLOGIES CREATE MULTIPLE CHANGE VECTORS



**What is the missing piece?**

Transportation –  
Electrification  
Autonomous Vehicles  
Flying Drones

Education – Healthcare - Workplace  
Distributed Designs





# 21ST-CENTURY INTELLIGENT INFRASTRUCTURE

- **BROADBAND FOR ALL**
- **MOBILITY 4.0 - ELECTRIC**
- **VISION ZERO**
- **ENABLE NEW SERVICES**
- **AUTOMATED SYSTEMS**
- **RESILIENT ENERGY**
- **REDUCED EMISSIONS**
- **SECURE SUPPLY CHAINS**

## SPECTRUM

NextG, Private RAN, Fiber, IoT Services

## TRANSPORTATION

ITS, CV2X, Radars, Lidar, Cameras, APNT

## SMART CITY

Advanced Services, EMS, Public Safety

## GOVERNMENT

APNT, Environmental, CBRN, RF, Beacons

## EDGE COMPUTE

Cloud, Integrators, Developers, Services

## ELECTRIC

Micro-grids, Energy Storage, EMP

**AUTONOMY**  
INSTITUTE

**PINN**



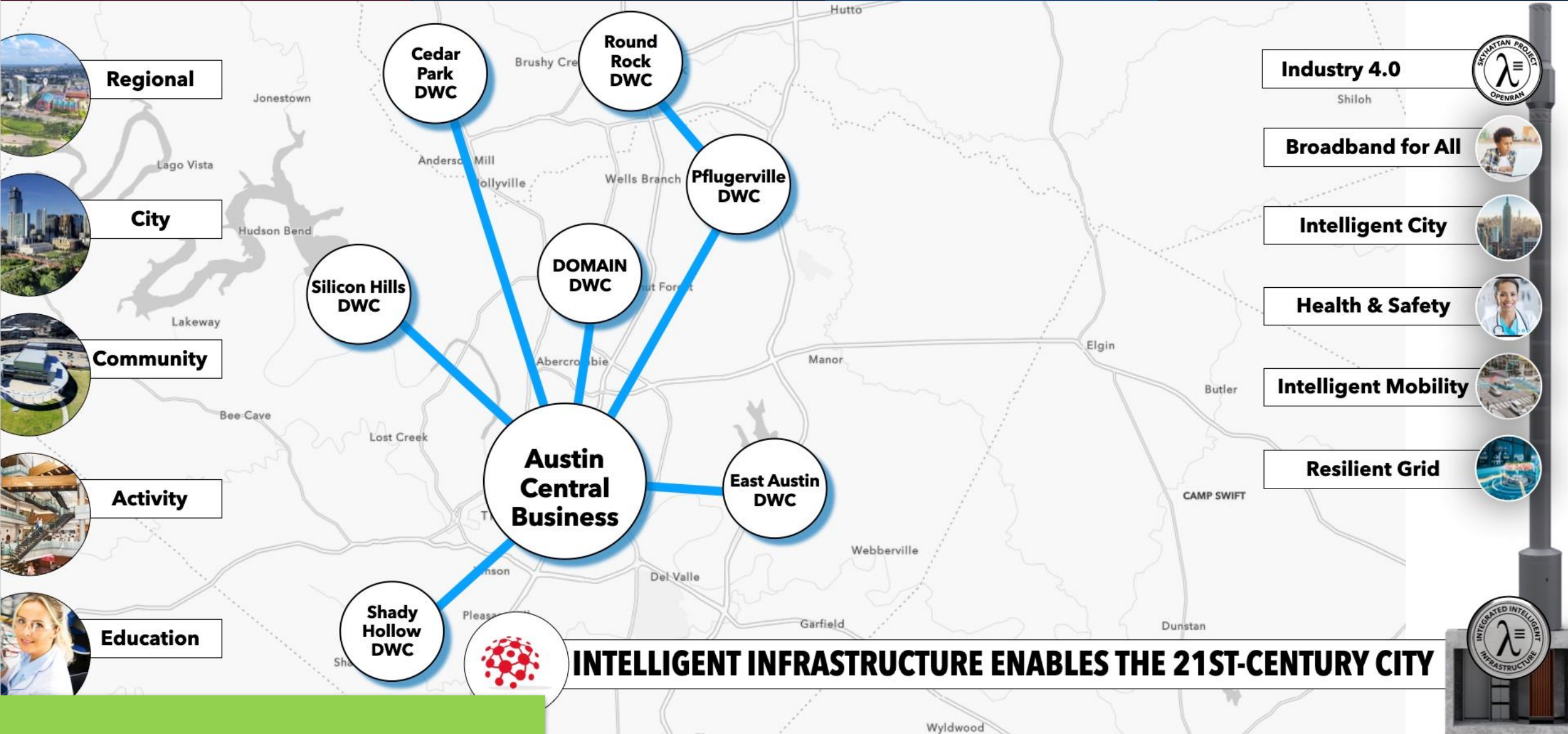
# ENABLING DISTRIBUTED WORK CENTERS

**BUILD STRONGER COMMUNITIES**

**PUBLIC-PRIVATE PARTNERSHIPS**

**ACCELERATE INNOVATION**

**REDUCE CONGESTION & EMISSIONS**







# INTELLIGENT INFRASTRUCTURE ECONOMIC ZONE

**BROADBAND**

**RESILIENCE**

**MOBILITY 4.0**

**VISION ZERO**

**SMART CITY**

**INDUSTRY 4.0**

**HEALTH**

**CONSTRUCTION**

**AGRICULTURE**

**SUSTAINMENT**

PREPARED BY:

**AUTONOMY INSTITUTE**



## THE ROUTE



## OF INTELLIGENT INFRASTRUCTURE

- Hewlett Packard Enterprise
- nvent
- PRESAGIS
- NVIDIA
- Kimley-Horn
- AI
- AXIS
- SEMPRE
- aruba
- NOKIA
- FiberLight
- COMPASS
- ADC
- SUPERMICRO
- aueti
- AIM
- TruWeather
- ABOVE
- RESILIENX
- FORTERRA
- SYNDEO



**AUTONOMOUS MOBILITY ZONES**

**DISTRIBUTED WORK CENTERS**

**PUBLIC SAFETY & RESPONSE**



**EDGE-READY**

**GREENPORT**  
 SITE NAME:  
 AUTONOMY INSTITUTE URBAN GRID  
 SITE ADDRESS:  
 Decker & SH130

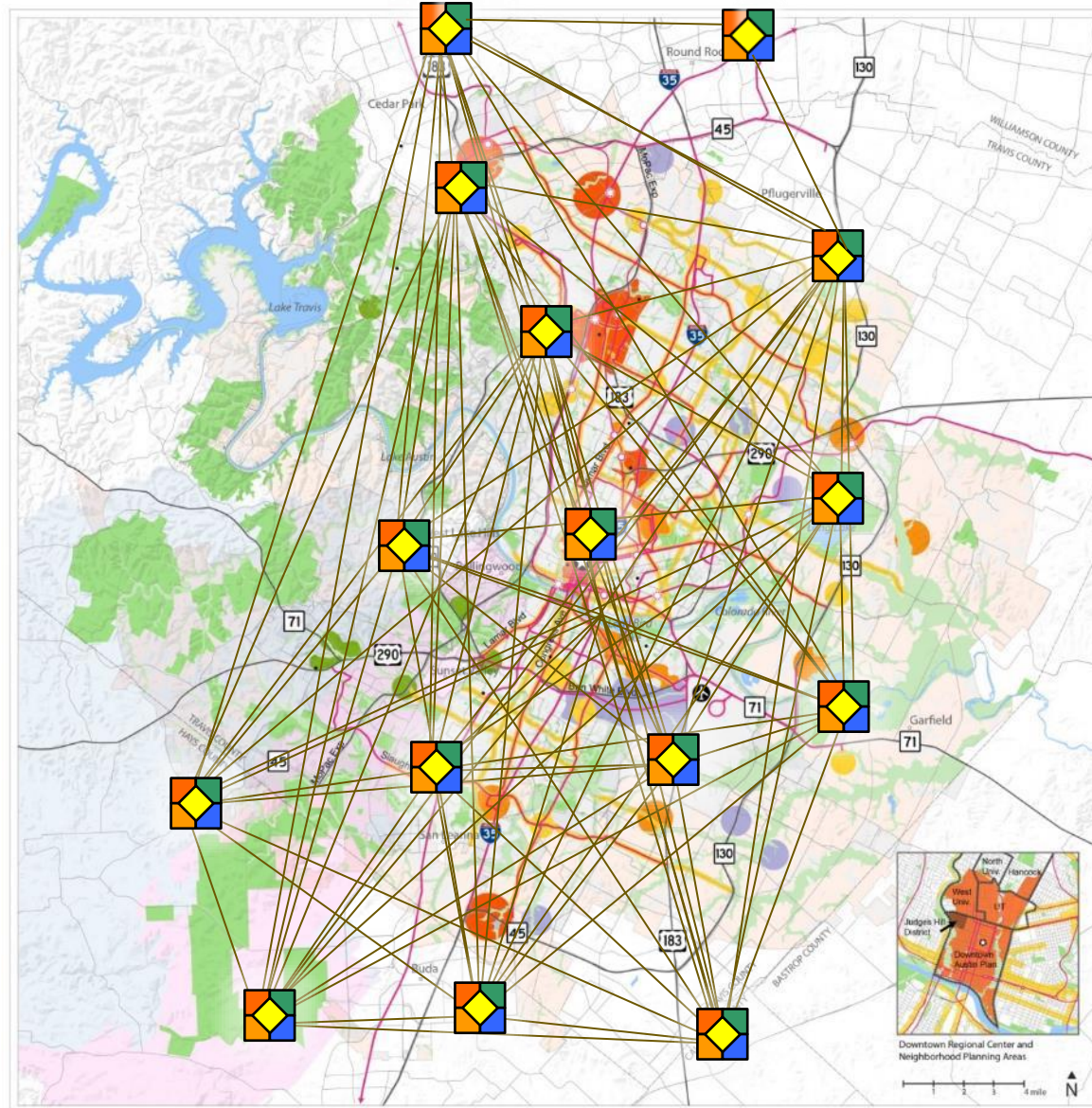


# AN INTELLIGENT NETWORK CONNECTING COMMUNITIES AND EMPLOYERS

Advanced Technology Centers  
Spanning Five Counties

24 Centers -  
100+ Employers  
20,000 Distributed Workers

Integrated Design -  
Education  
Healthcare  
Emergency Response  
Daycare



**IMAGINEAUSTON**  
Vibrant. Livable. Connected.

## Growth Concept Map

### Legend

- Regional Center
- Town Center
- Neighborhood Center
- Activity Corridor
- Activity Centers for Redevelopment in Sensitive Environmental Areas
- Job Center
- Current Open Space
- Future Open Space
- Barton Springs Contributing Zone
- Barton Springs Recharge Zone
- College / University

### Transportation

- High Capacity Transit Stop
- Proposed High Capacity Transit Stop
- High Capacity Transit
- Highway
- Other Streets

### Boundaries

- City Limits
- ETJ
- County Boundaries

The Growth Concept Map applies the Imagine Austin vision statement to the city's physical development. Generated through a public scenario-building process, it defines how we plan to accommodate new residents, jobs, mixed use areas, open space, and transportation infrastructure over the next 30 years.

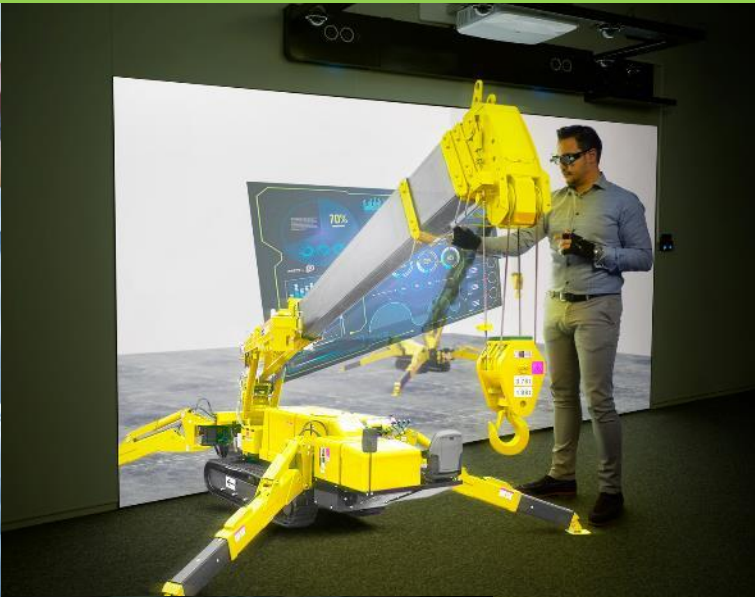
Map Disclaimers: A comprehensive plan shall not constitute zoning regulations or establish zoning district boundaries. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. This product has been produced by the Planning and Development Review Department for the sole purpose of geographic reference. No warranty is made by the City of Austin regarding specific accuracy or completeness.

Adopted June 15, 2012





# BRINGING A SPECTRUM OF NEW TECHNOLOGIES TO THE WORKPLACE





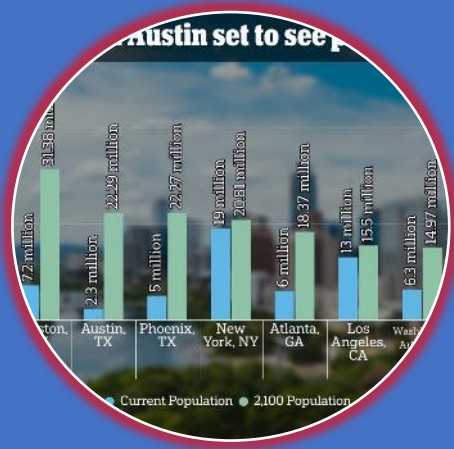
# HOW DOES THIS HELP DOWNTOWN?

As Austin adjusts to a new mix of residential, retail, and commercial spaces downtown technology centers will securely connect workers to employers outside the city.

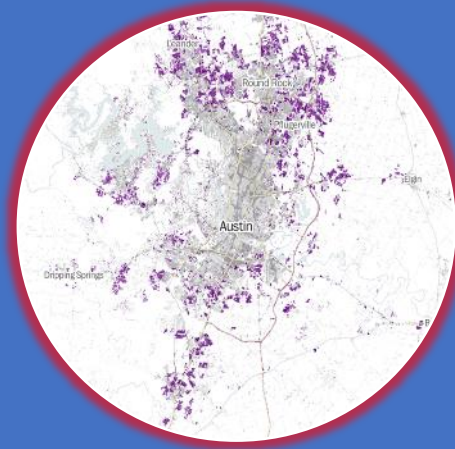
Other regional distributed technology centers will mitigate commuter traffic traveling through downtown improving traffic flow for other vehicles.

Gives Austin a unique new network infrastructure to attract more employers.





## Population Growth



## Geographic Expansion



## Occurrence of Major Climate Events

Unprecedented Rates of Growth