

Visions for the Houston Region: Immigration, Economic Diversity and a Low-Carbon Hub

Presentation for Gulf Coast Economic Development District

12 July 2019



About the Center

The Center for Houston's Future seeks to make our region a top global community in which to work and live.

Our theory of change:

We bring business, government, and community stakeholders together to engage in fact-based strategic planning and collaboration on issues of great importance to the Houston region.

Our areas of focus:

**Strategic
Initiatives**

**Community
Engagement**

Leadership



- The Future of Workforce & Immigration
- Barriers to Greater Houston's Future Growth
- Low-Carbon Energy Solutions
- Collaboration with CHF





“This report seeks to create a springboard for a community-wide discussion on how we can become a region where immigration is broadly seen as an economic asset.”

Download the full report at futurehouston.org



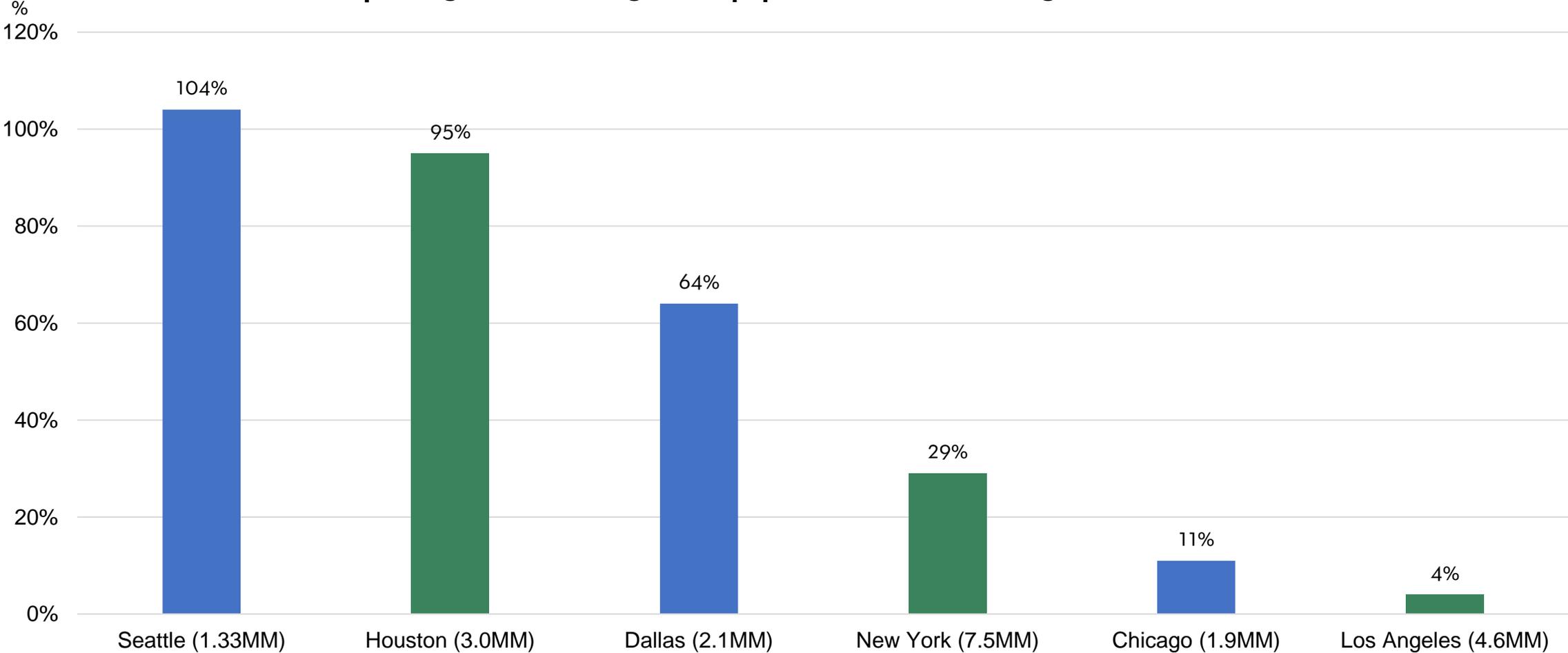
Why Immigration?

- CHF has developed an initiative focused on highlighting how immigration is needed to meet the growing need for workers among Greater Houston's businesses.
- **2018-2019:** gathering information, conducting research & connecting with stakeholders
- **March 2019:** release of Houston's Economic Future: Immigration, a report synthesizing what we learned over the past year
- **Now:** promoting findings from the report, pushing for next steps & identifying action items for going forward



Virtually No Other Region is More Affected by Immigration...

Projected growth of Foreign-Born population for selected regions, 2015-2036*



* Figures in parentheses represent projected for-born population in 2036
Source: U.S. Census Bureau. 2005-2009 and 2013-2017 American Survey 5-year extract



Houston's Foreign-Born Population Is Evolving

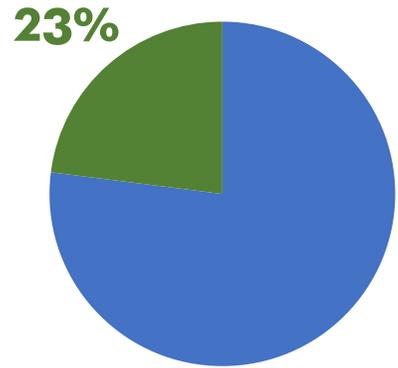
From 2006-2016, foreign-born residents became . . .

- More educated at every attainment level
- More integrated into the larger community
- More diverse in terms of their origin
- More likely to have legal status



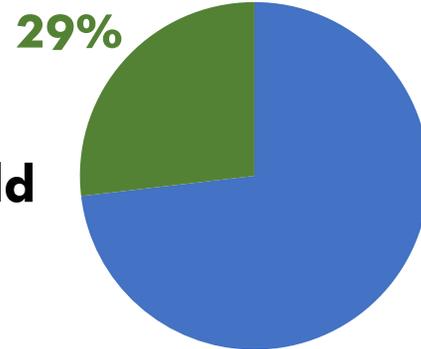
Immigrants Play a Significant Role in Our Workforce – 2016

Immigrants were



Of the region's population

But held



Of the region's jobs

Foreign-born share of high-skilled workforce



34% Stem



42% Doctors



43% Scientists



42% Petroleum Engineers



We Need Immigrants to Meet Houston's Demand for Workers

**Annual growth rate for employed workers
(2007-2016)**

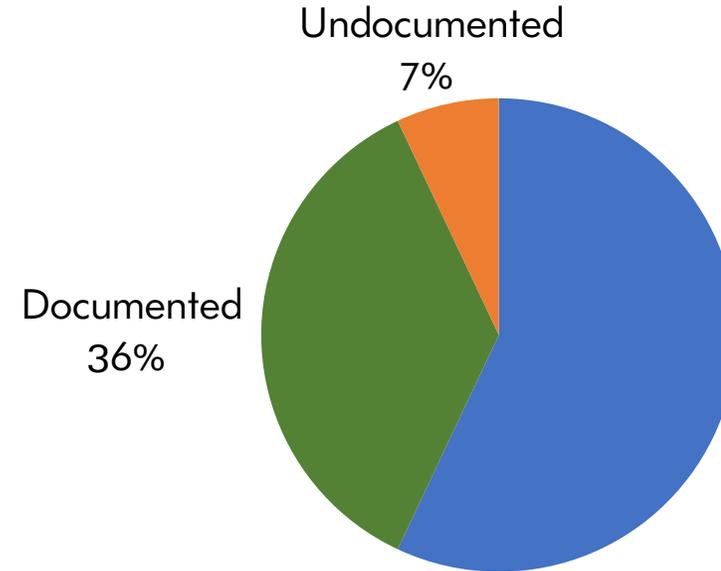


Immigrants Will Drive Employment Growth Through 2036

Industries most reliant on future immigration:

- Health care
- Professional Services
- Mining (Energy)
- Construction

Immigrants will hold **43%** of region's jobs



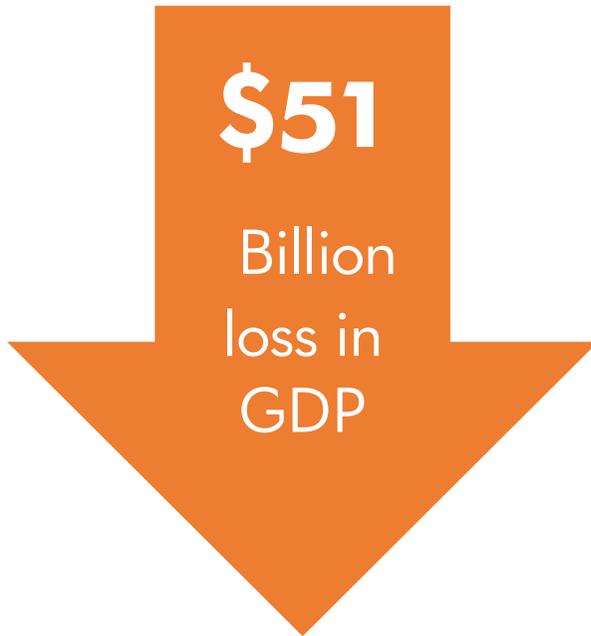
57% of **new** jobs created (since 2016) will be filled by immigrants



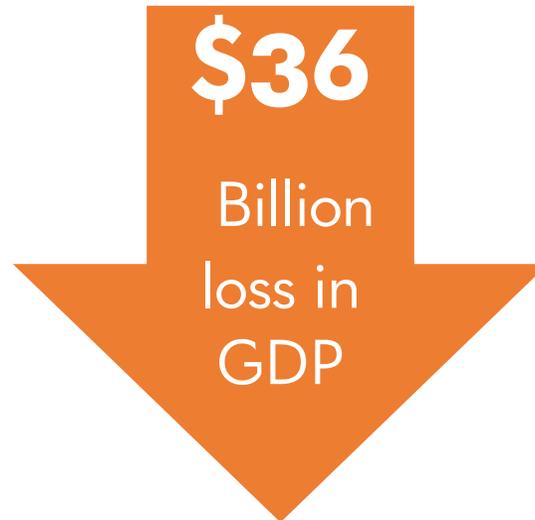
Changing Immigration Patterns Will Substantially Impact Growth

If we were to . . .

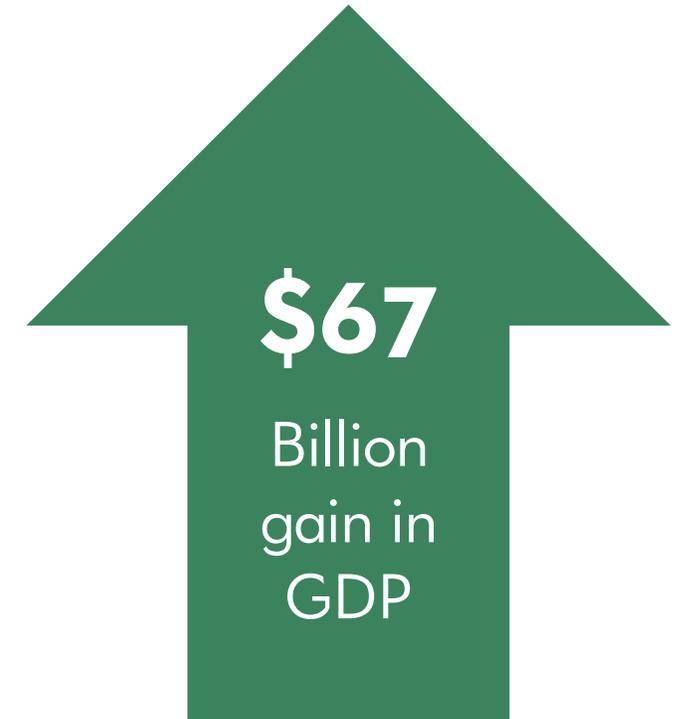
**Restrict all immigration
by 30%**



**Deport all undocumented
immigrants**



**Boost all immigration
by 30%**



- The Future of Workforce & Immigration
- **Barriers to Greater Houston's Future Growth**
- Low-Carbon Energy Solutions
- Collaboration with CHF

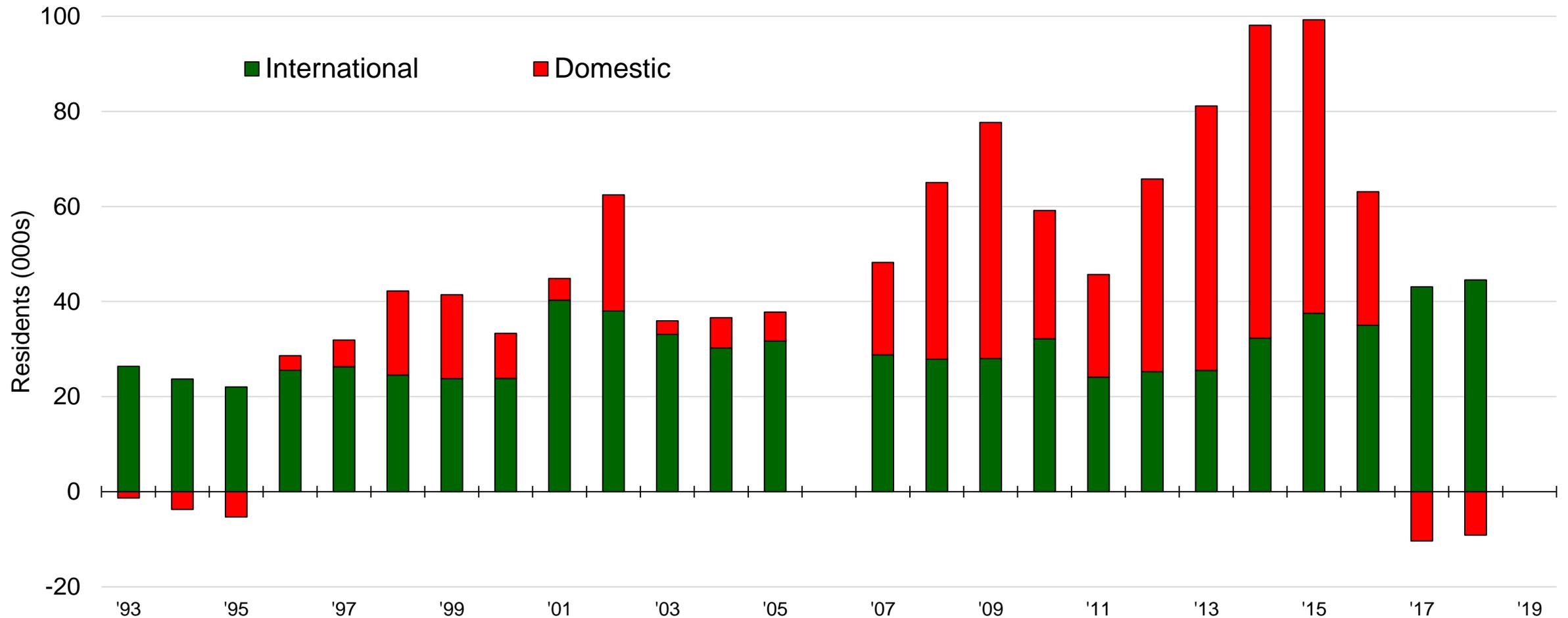


Houston's story over the last 20 years has been one of high economic growth and affordability, but this has now been called into question

- The Houston region's long trend of economic outperformance has been disrupted, suggesting the existing 'growth model' be reexamined and potentially changed
- When faced with similar crossroads – natural disaster, industry shifts, or other disruptions – peer cities have demonstrated an ability to transform and thrive
- The Houston region's current challenges suggest an opportunity for leadership to adopt similar strategies



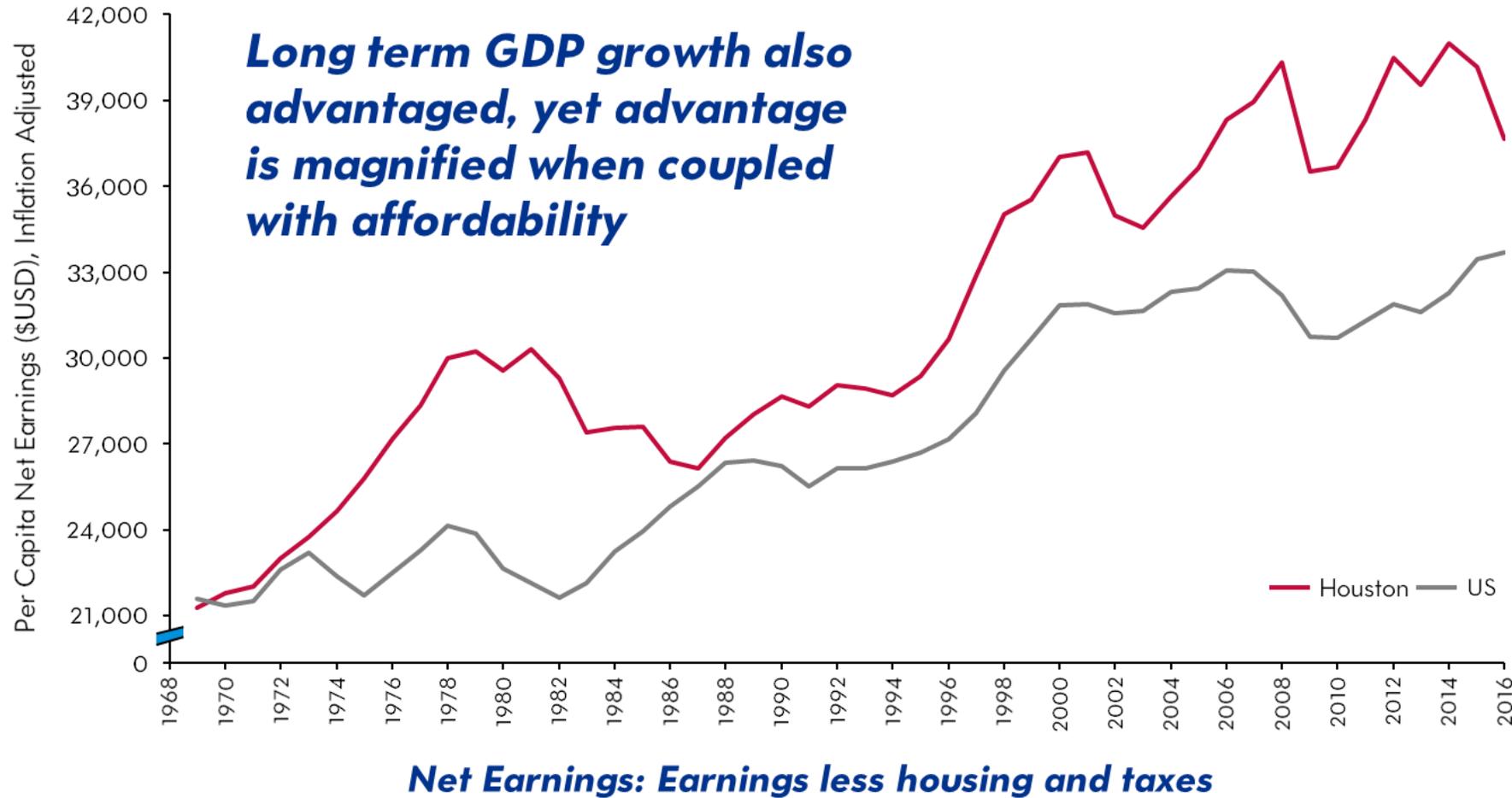
As a result, Houston has been a “magnet” for people across the globe and an economic success story



Source: U.S. Census Bureau data analyzed by the Greater Houston Partnership
'06 data distorted due to Hurricane Katrina evacuees



The region's oil & gas industry has historically driven steady growth in high-paying jobs that outpaced our peers & the U.S. average



Note(s): Per Capita Net Earnings adjusted using US Bureau of Labor Statistics Inflation Calculator
Source(s): US Bureau of Economic Analysis



Post 2014, Houston's economic advantages have been disrupted

	Then	Now
 <p>Infrastructure</p>	<p><i>Pro-growth policies and investments enabled rapid development</i></p>	<p><i>Limits of Houston MSA's pro-growth model are being reached (e.g., congestion, watershed destruction)</i></p>
 <p>Upstream Oil & Gas</p>	<p><i>While cyclical, O&G industry predominantly headed 'up and right'</i></p>	<p><i>Increasing probability of 'Lower for longer' or Lower Forever'</i></p>
 <p>Inclusive Economy</p>	<p><i>Growing economy attracted immigrants - education often 'imported', rest of system adequate</i></p>	<p><i>Less educated population out of balance with escalating job requirements</i></p>

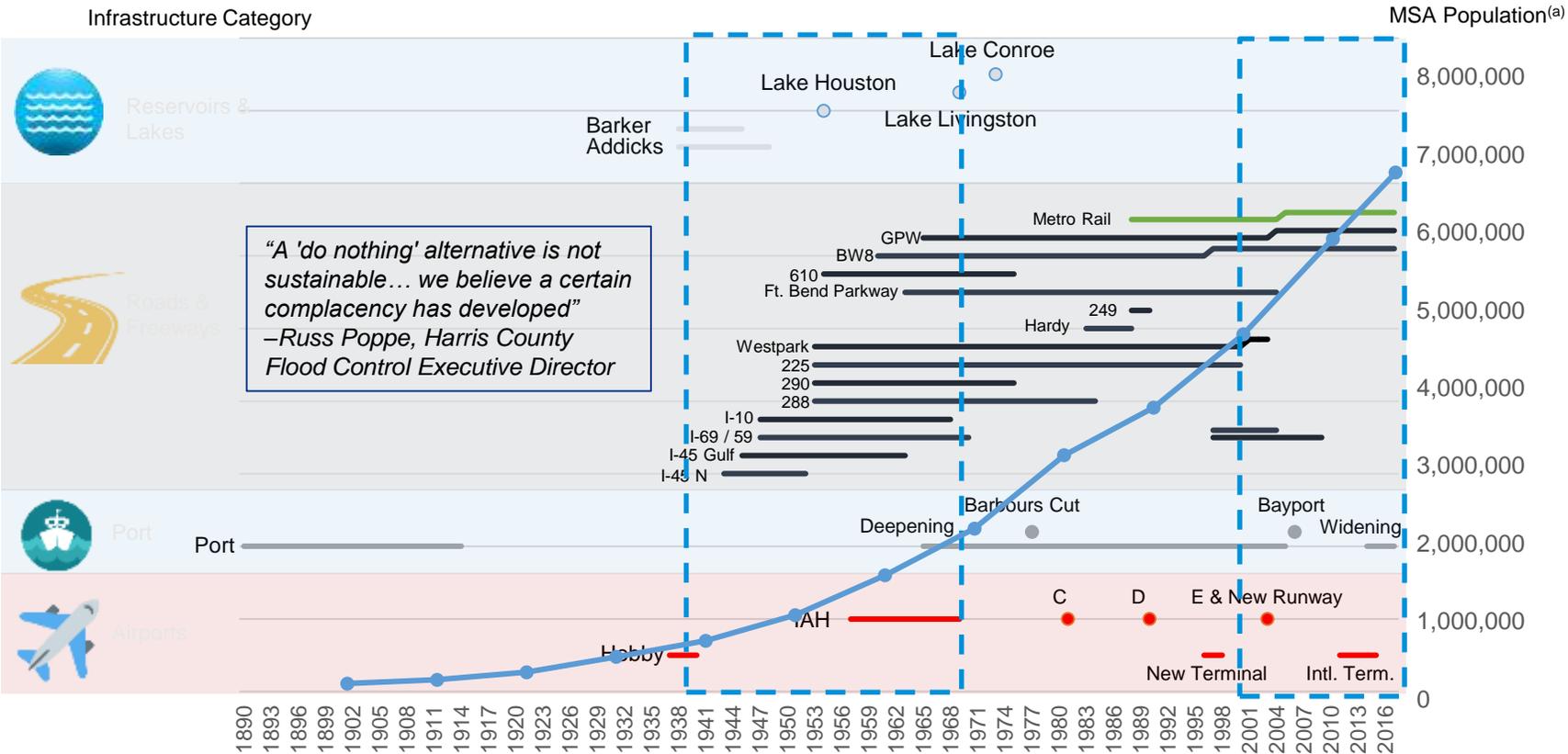


The gap in Houston infrastructure — largely in place decades ago—is clear

Houston infrastructure timeline vs. MSA Population growth

A city of 750,000 – 1.5 million plans for a future of growth, and delivers

Continued population growth with little investment has resulted in unmet infrastructure needs

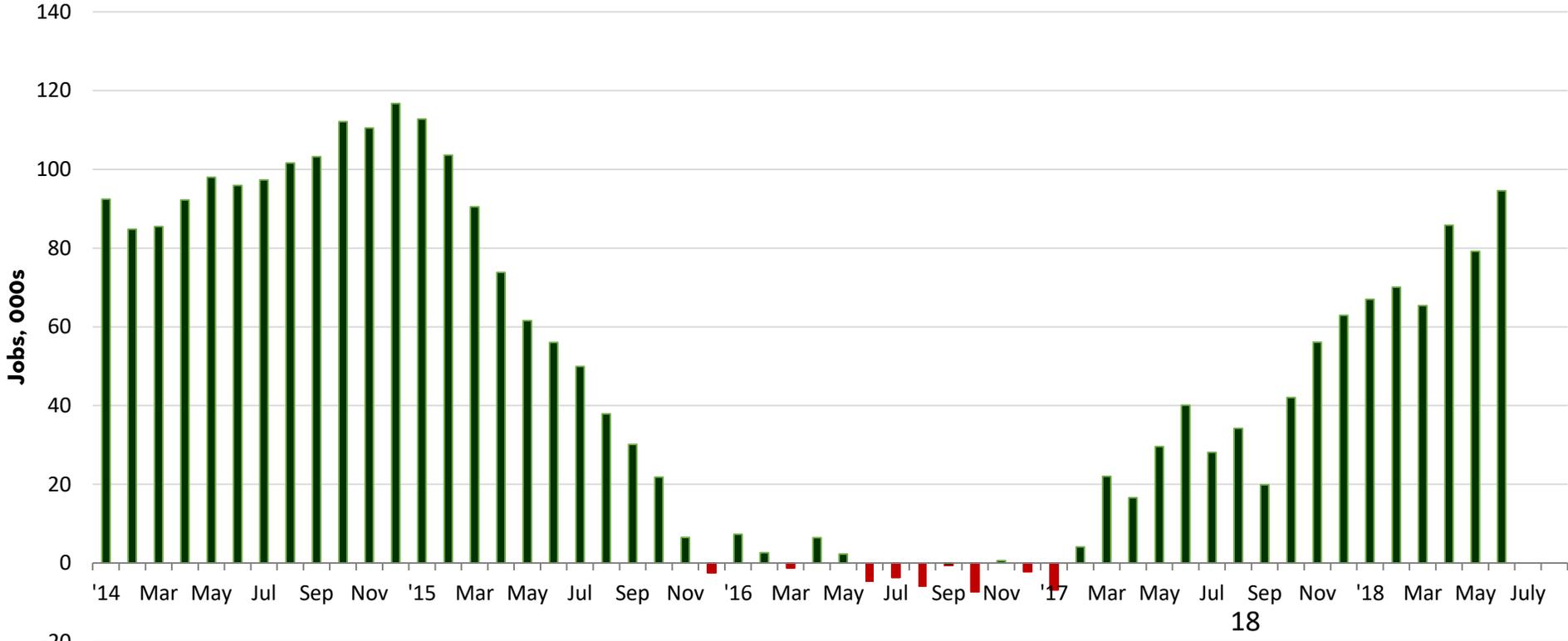


Note: (a) Population by county summed to determine total population – included counties currently in Houston MSA (Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Walker)
 Source(s): City of Houston, U.S. Census Bureau, Port of Houston website, Houston Freeways Stotbloom, Harris County Flood Control District



Houston Job Growth Has Returned

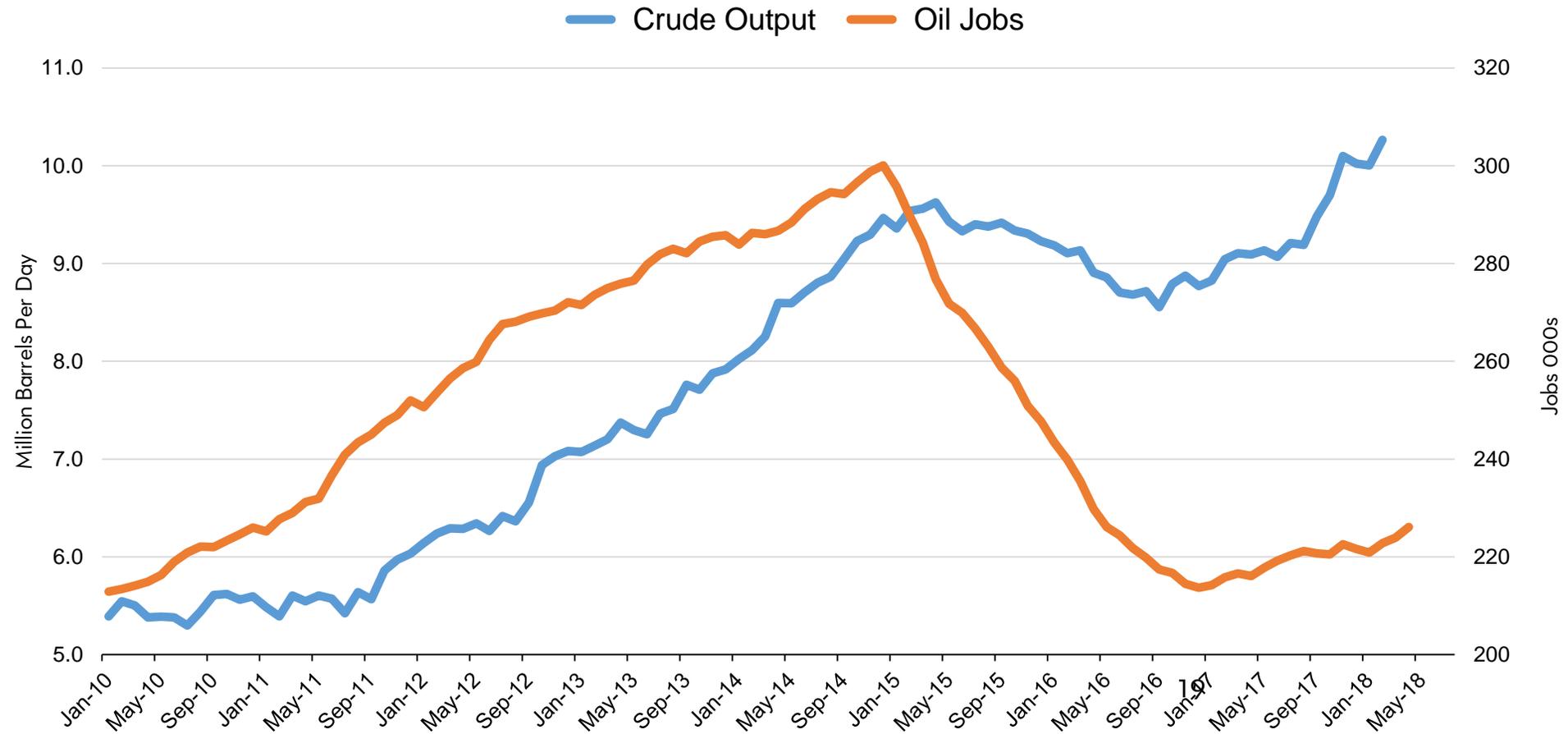
12-Month Running Totals



Source: Texas Workforce Commission



... but Oil and Gas Jobs still lag....



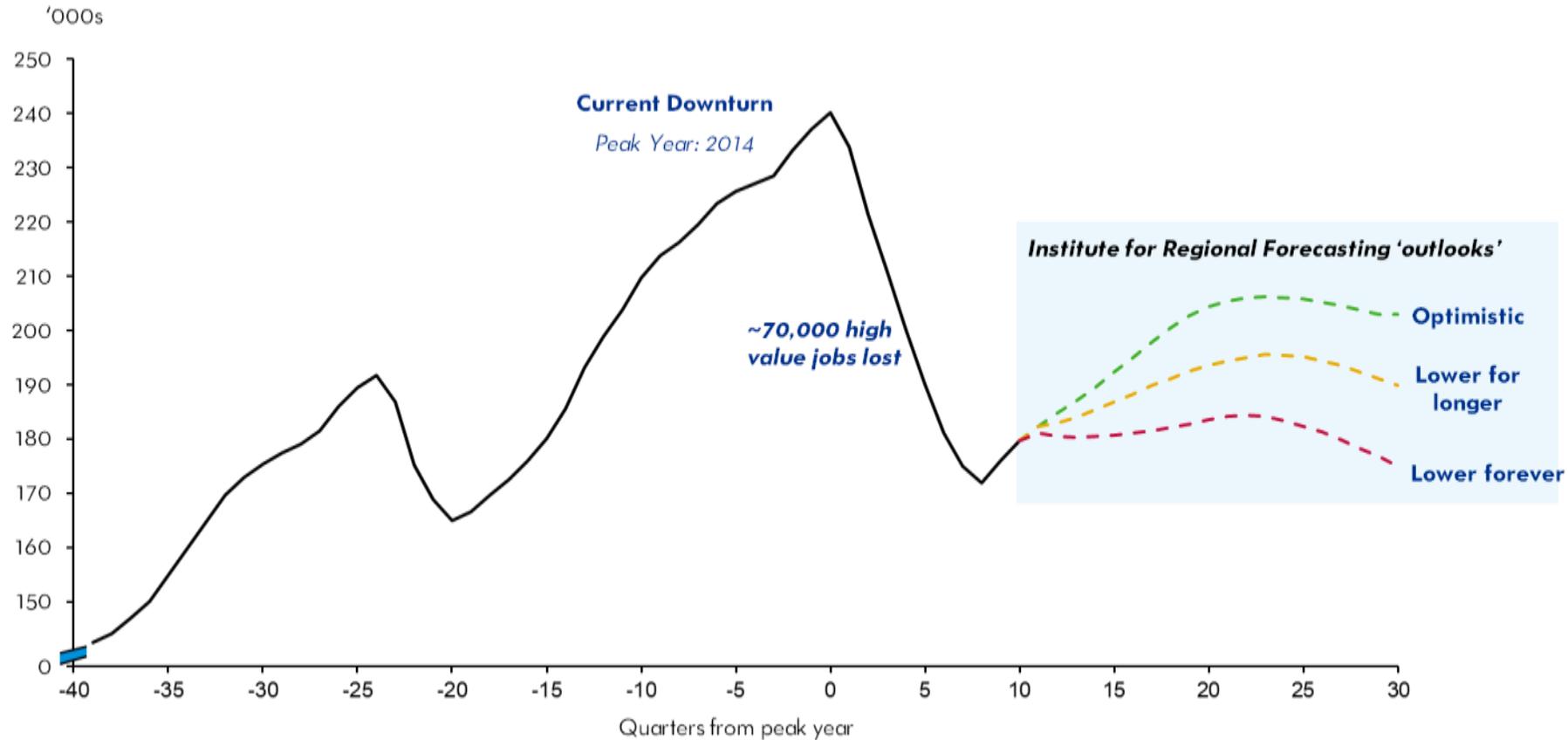
Source: US EIA, Texas Workforce Commission

* Exploration, oil field services, related manufacturing, engineering



Oil prices v. jobs: reversing Houston's decline in high paying jobs won't be easy

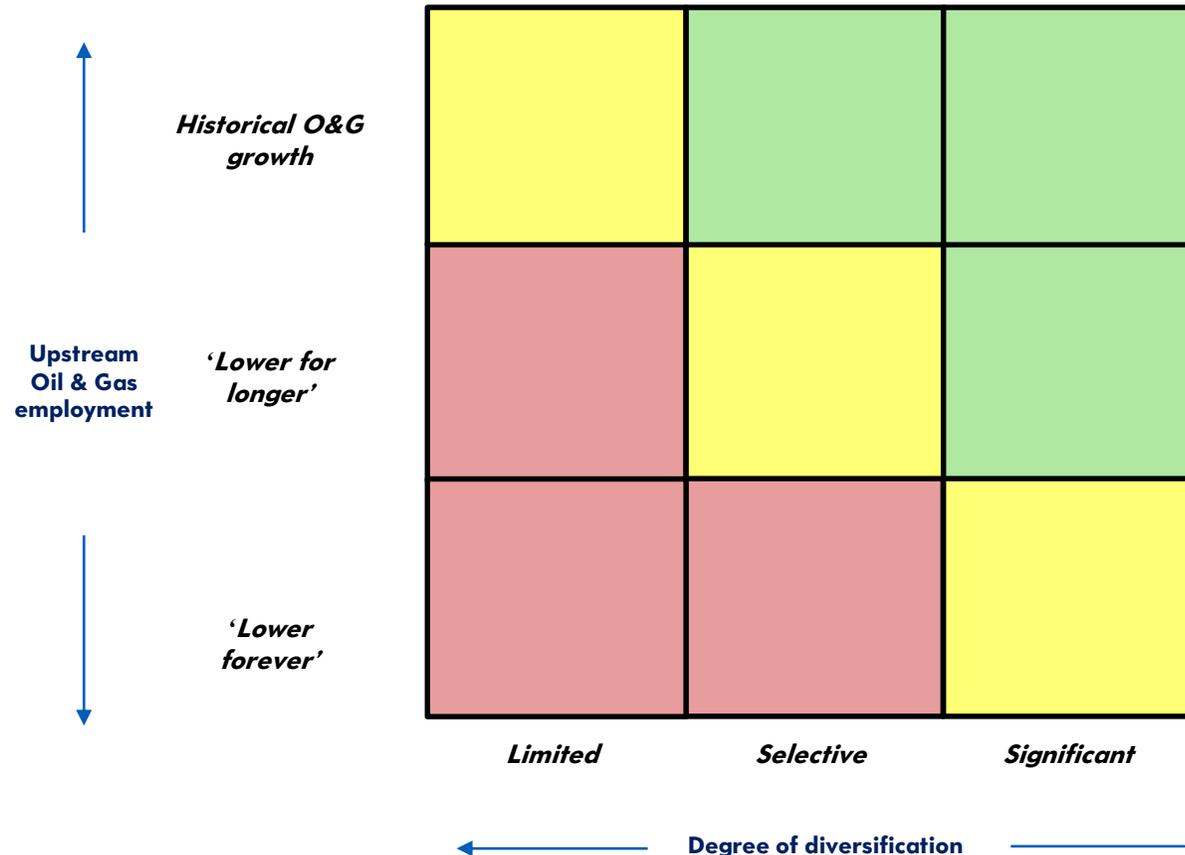
Houston MSA oil and gas related jobs versus peak quarter



Note(s): Jobs consist of oil production, oil services, machinery, and fabricated metals – change from SIC to NAICS coding results in classification change
Source(s): US Bureau of Labor Statistics; The Institute for Regional Forecasting



Modeling job growth



Modeling Approach

- Used IMPLAN economic development model
- Selected key sectors for job diversification through a multi-screening process
- Set target of outperforming peer city average annual growth rate **(2.1%)^(a)**
- Modeled extent of diversification beyond oil and gas required

Note: (a) Average employment CAGR from 1990 – 2016 of key peer cities outperforming US employment growth: Austin, Atlanta, Dallas, Denver, Oklahoma City, Phoenix
 Source(s): Bureau of Economic Analysis, Bureau of Labor Statistics



High multiplier jobs are key to driving economic growth

UC Berkeley economist Enrico Moretti finds . . .

- Innovation Jobs
 - Make intensive use of human capital
 - Make products that are unique and can't be reproduced elsewhere
- For each innovation job, **5 additional jobs** are created outside the innovation sector in the same city
 - 2 professional
 - 3 non-professional



High multiplier jobs are key to driving economic growth

Example: Twitter

- High tech has the largest multiplier, generating **3 times more** service jobs than traditional manufacturing. The sector:
 - Pays higher salaries
 - Uses more local services
 - Encourages clustering effects
- 900 employees in SF
- Indirect job creation: 4,500 jobs (1,800 professional / 2,700 non-professional)
- The most important impact of Twitter on SF labor market is **outside** of high tech



Our scenario modeling considered a combination of oil & gas industry growth and diversification across sectors

Back to the future	Cyclical oil price rebound reestablishes Houston's economic growth to match rate of peer cities.
High risk	Low oil price coupled with lack of diversification maintains current economic deterioration.
Keeping up	Selective diversification plus modest oil and gas expansion maintains Houston MSA growth, but does not match peer city levels.
Return to outperformance	Thoughtful diversification plus modest oil and gas expansion achieves Houston's outperformance.



We selected sectors for diversification based on connectedness to Houston, economic value-add, and growth potential

Selective Diversification

Existing presence

	Healthcare manufacturing 5 year CAGR: 7.1% 2017 jobs: 2,631
	Healthcare R&D^(a) 3 year CAGR: 1.7% 2017 jobs: 27,407
	Plastics manufacturing 5 year CAGR: 1.3% 2017 jobs: 6,525
	Chemical manufacturing 5 year CAGR: 1.7% 2017 jobs: 14,428

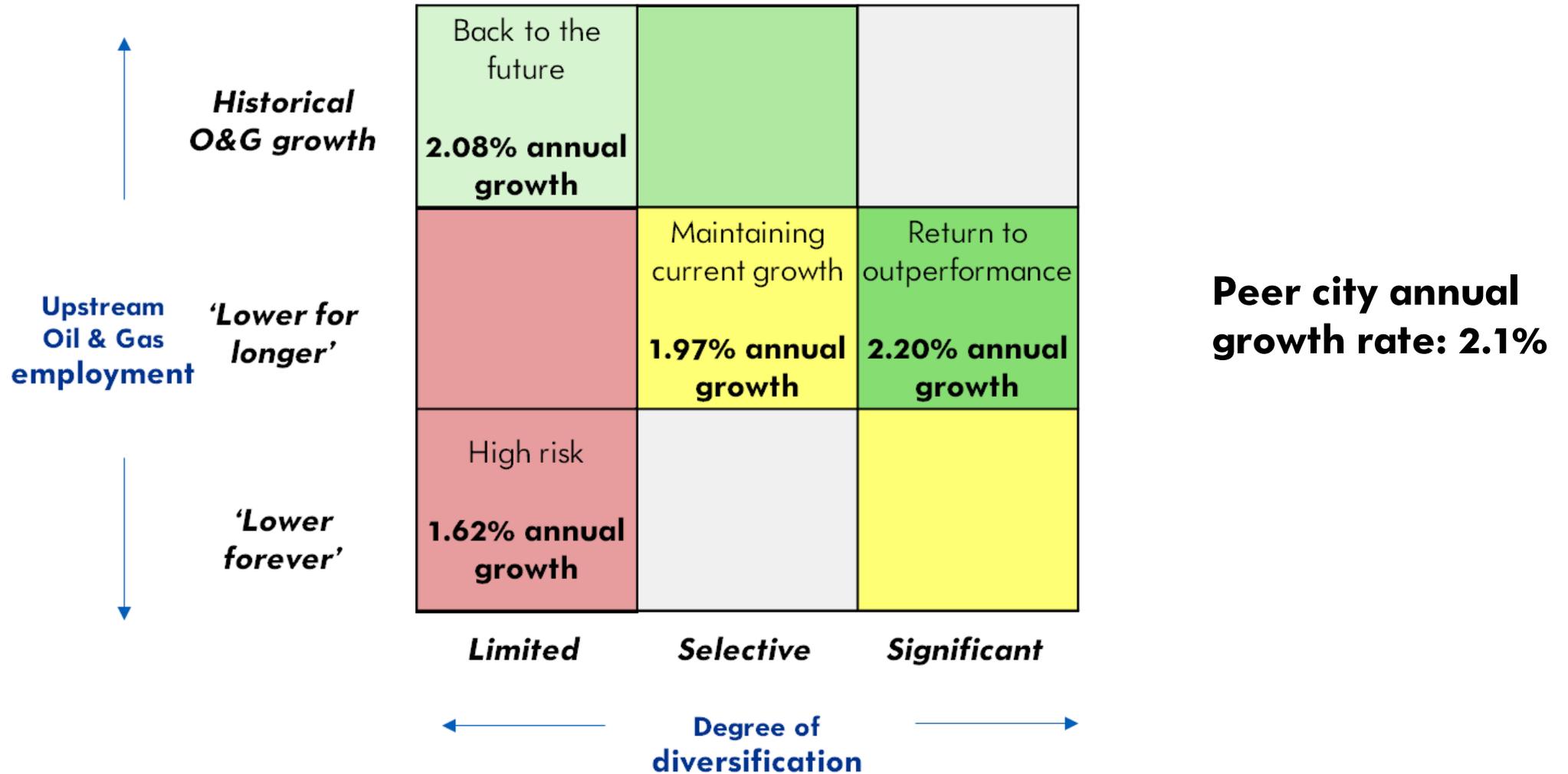
Significant Diversification

Existing capabilities and/or high applicability

	Data Science & Programming 5 year CAGR: 2.9% 2017 jobs: 30,885
	Computer systems & engineering 5 year CAGR: 2.8% 2017 jobs: 37,813
	Power transmission^(a) 5 year CAGR: 2.0% 2017 jobs: 9,539
	Utility scale renewables 5 year CAGR: 3.2% 2017 jobs: 706



Overall, significant job diversification will be required to maintain outperformance in the event of low to modest oil and gas expansion

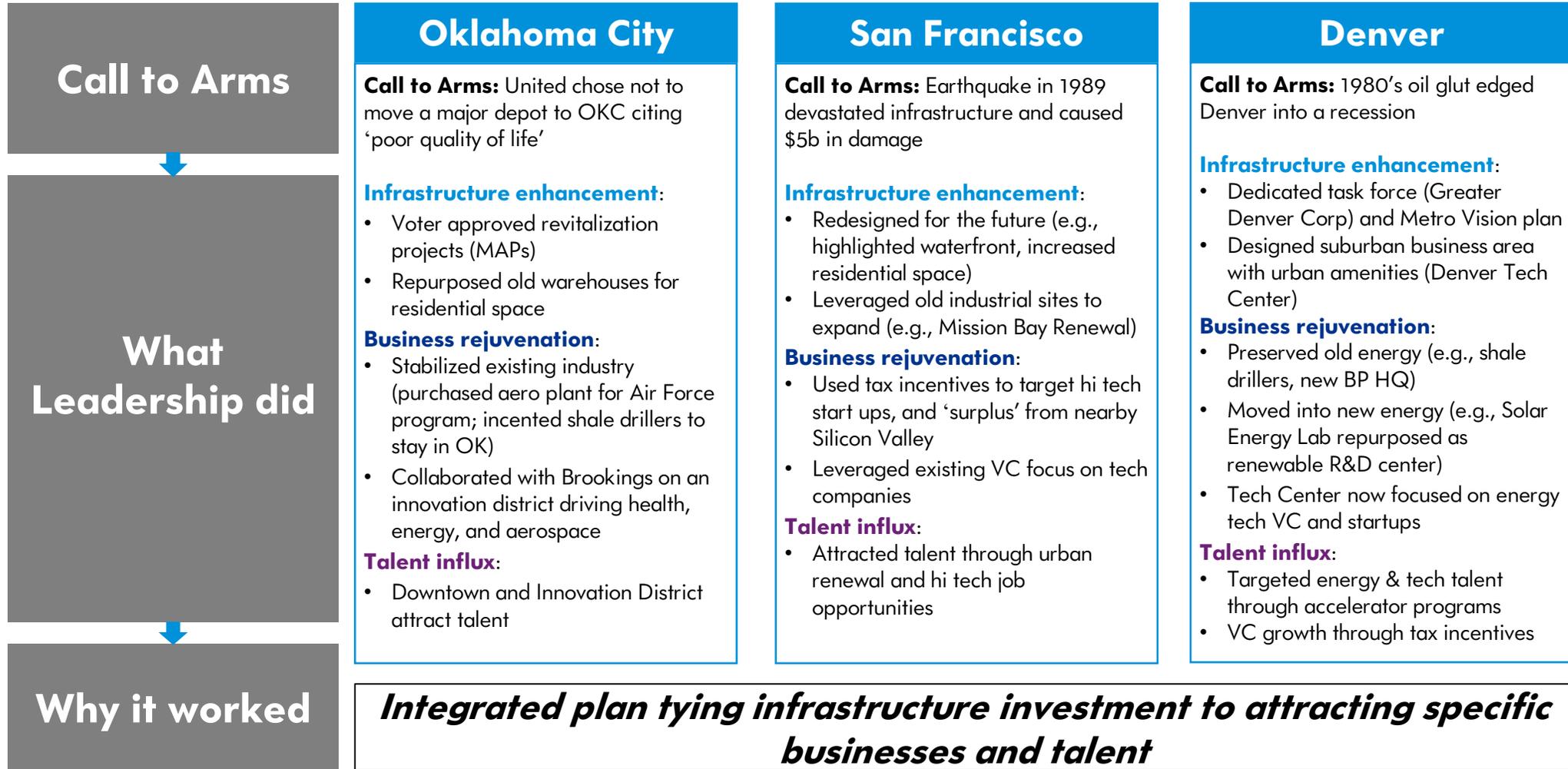


A Call to Action

- Houston MSA's long trend of economic outperformance has been disrupted, suggesting the existing 'growth model' be reexamined and potentially changed
- When faced with similar crossroads – natural disaster, industry shifts, or other disruptions – peer cities have demonstrated an ability to transform and thrive
- Houston MSA's current challenges suggest an opportunity for leadership to adopt similar strategies



Other cities revitalized their economies by integrating infrastructure, talent and business rejuvenation efforts



Source(s): CityLab, SF Gate, San Francisco Center for Economic Development, New York Times, KPMG Smart Cities, Denver Post, National Renewable Energy Lab, TechStars



The 'Magnet City' model integrates business, talent & infrastructure efforts to spur outperforming economic growth



Leadership 'call to arms'



Infrastructure rejuvenation

- Existing assets
- Future business needs
- Workforce vision



Business rejuvenation

- Existing assets
- Existing capabilities



Talent attraction and retention

- Role of infrastructure
- Business opportunity



Where does Houston stand against these key levers?

Magnet City Model

Leadership 'call to arms'

- Clearly exists

Infrastructure rejuvenated

- Existing assets
- Future business needs
- Workforce vision

- Crumbling infrastructure needs repair
- ***Beyond repair, what is needed to enhance target businesses and attract desired talent (new mobility paradigm)?***
- ***How will we fund new infrastructure?***

Business rejuvenation

- Existing assets
- Existing capabilities

- Significant public / private efforts in building innovation eco-systems underway
- ***What is the link to the assets we have and what we already do well?***

Talent attraction and retention

- Role of infrastructure
- Business opportunity

- How do we retain current talent?
- ***How do we handle the growing 'left-behind' issue?***
- ***What is the nature of the new talent we seek to attract, and how can we attract this talent?***



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CENTER FOR  HOUSTON'S FUTURE

Cosponsored by

Houston Low-Carbon Energy Summit

June 6, 2019 | 9am-4pm | Royal Sonesta Hotel



2019 HLCES Key Findings

- There is growing interest and movement in some sectors of Houston's energy sector in decarbonization.
- Many here believe CCUS (Carbon Storage and Utilization) must be part of the solution and if Houston isn't an innovation hub on CCUS we've missed out.
- There is also significant interest in working on methane leak and emission reduction.
- Texas already has a significant renewables footprint, but more can be done – especially on solar.
- Opportunities exist in everything including hydrogen, carbon-reduction engineering, energy data analytics, to electrification to VC
- One theme we heard at the summit: if Houston aims to keep attracting talent, especially younger workers, we need to move beyond our image as the oil and gas capital to becoming the energy capital – specifically the lower/low-carbon energy capital.
- Still lacking an overall vision, which we plan to part of shaping.



The Center for Houston's Future is working at the apex of many trends (immigration, climate change, infrastructure, education) that will be key to our economic future.

A new generation of leaders are required to transform Houston and continue its history of economic success.



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Business/Civic Leadership Forum

- Bi-annual Business and Civic Leadership Forums send participants on self-directed Learning Journeys to inform and inspire them to become more active civic leaders
- Graduates have gone on to run for local office, start NGOs, serve on boards and commissions, and take leadership on issues in their community



Ways to collaborate with CHF

- CHF's Business/Civic Leadership Forum
 - Fall 2019 session:
 - September 12-14
 - October 25-26
- Invite us to present our findings across the region



Questions?

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